



United States Department of the Interior

NATIONAL PARK SERVICE
Natural Resources Stewardship and Science
423 Forest Resources Building
University Park, PA 16802

June 2017

Memorandum

To: Kathy Penrod PhD, Natural Res. Specialist, Johnstown Flood National Memorial

From: Peter Sharpe and Eric Kelley, Northeast and National Capital Regions

Subject: Report for Travel to Johnstown Flood National Memorial, September 19 -23, 2016

Abstract

The objective of this investigation was to respond to a request for technical assistance for a comprehensive delineation of wetland habitats subject to jurisdiction under Section 404 of the Clean Water Act and all wetlands subject to National Park Service (NPS) procedures for implementing *Director's Order #77-1: Wetland Protection* (DO 71.1) within the historic reservoir area of Johnstown Flood National Memorial (JOFL) (see Figure 1). This effort was undertaken as a supplement to a previous wetland inventory conducted by Keller Engineers, Inc. (Keller) completed from 2007 to 2009 using the U.S. Army Corps of Engineers methods. Our primary focus was to additionally apply Cowardin et. Al (1979) to comply with DO 7.1 to update the Keller Engineers (2009) wetland inventory and field verify those mapped riverine and riparian buffer features. This update will provide the park and their national wetland science support personnel with the basic information needed to make informed management decisions regarding any future landscape, vegetation management, or conservation projects within the 82 acre study area. Cultural Landscape Management or other project activities may require regulatory compliance. A total of 23 unique wetland features were delineated in 2016 totalling 11.10 acres of palustrine wetland habitat, 4.00 acres of previously mapped riverine wetland features (Keller 2009) reclassifying 3.21 acres riverine wetland habitat, and 2.74 acres of habitat was reclassified from riverine (Keller 2009) to scrub-shrub riparian buffer.. This 2016 report is consistent with current DO 77.1 guidelines.



Photograph 1 (P1). Erik Kelley, NPS NCR, delineates Wetland W4 in September 2016.

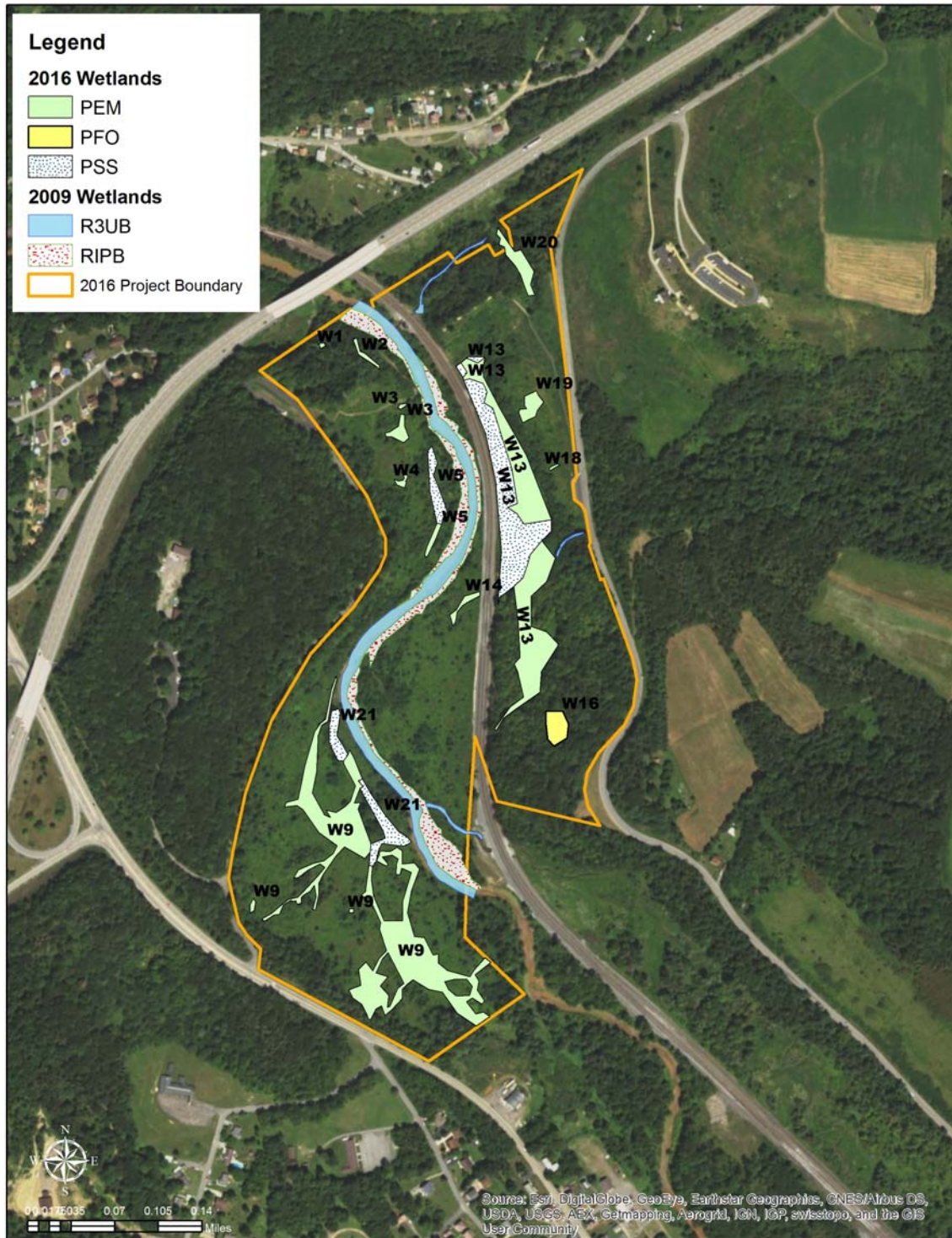


Figure 1. JOFL Wetland study area and general features of emphasis map only 2016 palustrine wetland features are labeled in this figure.

Purpose and Objectives

The primary objective was to provide the JOFL staff with an update to a previous wetland inventory completed in 2009 by Keller Engineers, Inc. (Keller 2009) within the former reservoir (Lakebed) and Abutment Cultural Landscape Areas of the park.

Participants

Kathy Penrod, NPS ALPO/JOFL

Eric Kelley, National Capital Region, Prince William Forest Park

Peter J. Sharpe, Water Resources Division AP stationed in the Northeast Region

Introduction

It is the mission of the National Park Service to preserve and maintain the natural and cultural resources of Johnstown Flood National Memorial (JOFL) and to interpret those same resources to the visiting public and the scientific and scholarly community. The mandate for JOFL is to memorialize the Great Flood of 1889; Park natural resource management strategies must support this park mandate in Cultural and Developed Zones Per the NPS mission this must be done in a manner that complies with DO 77.1

The NPS through Director's Order #77-1 (National Park Service 2012) requires mapping of wetlands and all other "waters of the United States" via a slightly different criteria than the USACE 1987 manual (Environmental Laboratory 1987) and associated regional supplements, thus the two types of wetland determination methods employed at JOFL were: (1) the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual (USACE 2012) and (2) the 1979 USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Methods

Interim Regional Supplement USACE Method (3-Parameter Approach)

The USACE method for identifying the wetland / upland boundary uses the definition as outlined in the U.S. Army Corps of Engineers *Wetlands Delineation Manual, 1987*, which defines a wetland as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Wetland boundaries were primarily determined by establishing a series of transects from a known wetland into known upland locations surrounding the area under examination. At suspected boundary locations along the transect investigators looked for evidence of hydric soils, hydrophytic vegetation, and wetland hydrology. The wetland/upland boundary line was thus delineated and any obvious topographic changes (e.g. abrupt toe-of-slope line) along the

wetland/upland perimeter that might occur. In many cases at JOFL abrupt toe-of-slope boundaries were present and thus served as reliable indicators of wetland/upland boundaries.

Parameter 1- Hydrophytic Vegetation Criteria

For determining the presence of hydrophytic vegetation, plant species within each community were visually identified by strata (e.g. trees, saplings/shrubs, herbs and woody vines) and listed in descending order of dominance. The USACE defined sampling stratum has 5 percent or more total plant cover. If a stratum had less than 5 percent cover during the growing season, then those species and their cover values were recorded on the data form, assuming application of Indicator 3 (Prevalence Test) was necessary. However, these species were not generally included on the data sheets if the wetland determination could be made via Indicator 1 (Rapid Test) or Indicator 2 (Dominance Test). For Indicators 1 and 2 only those species that comprised 5% or more of a given strata were assessed.

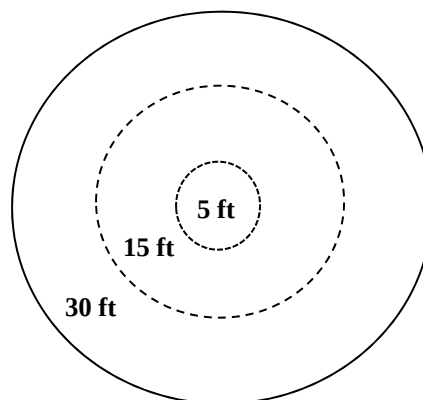


Figure 2. Typical wetland vegetation survey plot conforming to USACE interim regional supplement Eastern Mountains and Piedmont (2012) guidelines.

Vegetation survey plots conformed to current USACE interim supplement guidelines and involved the use of a series of nested circular plots radiating outward from the soil/hydrology test pit (Fig. 2). Plot sizes were as follows:

1. Tree stratum – 30 ft (9.1 m) radius
2. Woody vines – 30 ft (9.1 m) radius
3. Herb stratum – 5 ft (1.5 m) radius
4. Sapling/shrub stratum – 15 ft (4.6 m) radius

The wetland indicator status of observed dominant plant species was determined using the US Army Corps 2016 National Wetland Plant List for the Eastern Mountains and Piedmont Region (USACE-NWPL 2016) with additional verification through the USDA-NRCS (USDA 2017) plants database and are listed below:

- **OBL** (Obligate Wetland Plants) occur greater than 99 percent of the time in wetlands under natural conditions.
- **FACW** (Facultative Wetland Plants) occur between 67 and 99 percent of the time in wetlands under natural conditions.
- **FAC** (Facultative Plants) occur between 33 and 67 percent of the time in wetlands under natural conditions.

- **FACU** (Facultative Upland Plants) occur between 1 and 33 percent of the time in wetlands under natural conditions.
- **UPL** (Obligate Upland Plants) occur less than 1 percent of the time in wetlands under natural conditions.

Plant species dominance was determined as the most abundant species that individually or collectively accounted for more than 50 percent of the total absolute coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total (i.e. the 50/20 Rule).

The interim regional supplement to the original 1987 USACE manual identifies 4 primary indicators of hydrophytic vegetation, any of which, when met, signifies that the community indicates a wetland plant community. For purposes of brevity this section will only cover the two most commonly encountered indicators at JOFL (e.g. Indicators 1 and 2). For a complete description of all of the indicators the reader is directed to view the U.S Army Corps of Engineers (USACE) Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (2012).

For a plant community to meet the vegetation criteria under Indicator 1 the following description must be met: “All dominant species across all strata are rated OBL or FACW, or a combination of these two categories, based on a visual assessment.” Under Indicator 2 (a commonly employed indicator at JOFL) more than 50 percent of the dominant plant species across all strata must be rated OBL, FACW, or FAC.

Parameter 2 - Hydrology Criteria

Wetland hydrology indicators provide evidence that episodes of inundation or soil saturation lasting more than a few days during the growing season have occurred repeatedly over a period of years and that the timing, duration, and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology. The growing season begins when two or more non–evergreen vascular plant species growing within the study area exhibit one or more of the following biological indicators:

1. Emergence of herbaceous plants from the ground
2. Appearance of new growth from vegetative crowns (e.g., in graminoids, bulbs, and corms)
3. Coleoptile/cotyledon emergence from seed
4. Bud burst on woody plants (i.e., some green foliage is visible between spreading bud scales)
5. Emergence or elongation of leaves of woody plants
6. Emergence or opening of flowers

Growing season conditions can also be met if soil temperatures measured at 12 in. (30 cm) depth is 41 °F (5 °C) or higher. Hydrologic indicators of wetland conditions are based on the direct observation of surface water or groundwater during a site visit (Group A indicators), evidence that the site is subject to flooding or ponding, although the inundation need not be directly observed at the time of the investigation (Group B indicators). The inundation (Group B) indicators include water marks, drift deposits, sediment deposits, and similar features. Other hydrologic indicators consist of evidence that the soil is saturated currently or was saturated recently such as oxidized rhizospheres and the presence of reduced iron or sulfur in the soil profile (Group C indicators), which indicate that the soil has been saturated for an extended period. The final group of hydrologic indicators (Group D) consists of landscape, vegetation, and soil features that indicate contemporary rather than historical wet conditions. Wetland hydrology indicators are intended as one-time observations of site conditions that are sufficient evidence of wetland hydrology in areas where hydric soils and hydrophytic vegetation are present. For a site to meet the wetland hydrologic criteria it need only possess one primary indicator or two secondary indicators from one of the aforementioned groups.

An assessment of potential drought/non-drought conditions was also conducted for JOFL using US Drought Monitor (DM) – Drought Intensity Index. The DM – Drought Intensity Index is useful as a general means of assessing whether or not wetlands mapped over the study were potentially experiencing abnormally dry conditions which may affect the accuracy of the wetlands inventory. DM – Drought Intensity Index data for Cambria County, PA was assessed three months prior to data collection (June-August 2016) consistent with USACE suggested protocols (USACE, 2010).

Parameter 3 - Hydric Soil Criteria

Hydric Soils are defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA Soil Conservation Service 1994). One of the most significant changes to the original 1987 USACE manual with regards to wetland boundary determinations is in the area of hydric soil recognition and characterization. The new regional supplement still requires low chroma color soils and the presence of redoximorphic features, however, the revised indicators are much more specific and cover a broader range of potential wetland types than the original 1987 manual criteria.

Soil pits were excavated to a maximum depth of 18 inches (45.72 cm) using a 3- inch diameter bucket auger, unless on-site conditions such as shallow bedrock prohibited excavation or one or more of the hydric soil indicators were met. The data sheets for each mapped wetland include information on the soil profile colors, presence/absence of redoximorphic features, texture, and presence/absence of any shallow confining layers and their depths on-site.

GPS Survey of Wetland Boundaries

Wetland inventory work involved a total traverse of the inventory boundary of the park by foot. Areas of high wetland probability such as floodplains, toe-of-slopes, mapped hydric soil zones, and previously mapped wetland features from sources including: National Wetland Inventory (NWI 2017) data, JOFL Vegetation Classification and Mapping (Perles et al. 2006), and Keller Engineers (2009) wetland areas were visually assessed during the growing season. Once the areas of high wetland probability were cleared a traverse and visual assessment of the low probability areas of wetland occurrence was conducted. The areas of the park that were considered to have a low probability of wetland occurrence included steep slopes, non-hydric soil areas, and areas not previously mapped as wetlands. These steeper slopes with low probability of wetlands are located mostly along Route 869, South Abutment Road, and Lake Roads, the dam abutments, and some areas within the former lakebed. The primary goal of this effort was to physically map every palustrine wetland that was 0.1 acre in size or greater.

Pink wetland delineation flags were marked with a unique alpha numeric code and hung at regular intervals around the perimeter of each identified wetland habitat and located using a sub-meter accurate GPS system. Representative wetland test pits were also similarly flagged and located. GPS-based coordinates were collected for wetland test pit and boundary flags between the 19th and 23rd of September 2016, using a Trimble Geo7X receiver with an external Hurricane antenna in datum NAD83, UTM – zone 18N, meter coordinates and TerraSync software. A minimum of 4 satellite vehicles were tracked. Where possible a maximum Position Dilution of Precision (PDOP) of 6 was maintained for each set and a minimum of 50 positions were taken at each point feature. The data were post-processed and differentially corrected using Pathfinder Office 5.30 and base data downloaded from the Cumberland Coop COORs station located in Allegany County, MD. The data were then exported to shapefile format. Following this procedure we have estimated accuracies in the X and Y direction of 0 to 3 feet with the majority of the 19,802 individual corrected positions (88%) falling within the range of 0 to 1.75 feet. No tests were done to confirm the X/Y direction accuracy during this investigation.



Photograph 2 (P2). A smooth green snake (*Opheodrys vernalis*) was observed and photographed by Peter Sharpe at the active railroad CSX right-of-way portion of the study area on September 22, 2016.

Wetland Functions and Values

A desktop descriptive function and value analysis utilizing the US Army Corps of Engineers – New England District *The Highway Methodology Workbook Supplement* (USACE September 1999) was conducted post-hoc. We assessed principal function and values associated within the general Cowardin et al. (1979) wetland classes and provide that element of this inventory as additional information to support potential DO #77.1 and Section 404 Clean Water Act compliance actions within the park (Table 2).

Results

Generally there was little change between 2009 and 2016 with regards to the total wetland acreage within the reservoir study area (Table 1 and Fig. 2). A total of 23 unique wetland features were delineated in 2016 totalling 11.10 acres of palustrine wetland habitat, 4 previously mapped riverine wetland polygon features Keller Engineers (2009) were verified equalling 3.21 acres of riverine wetland habitat and another 2.74 acres of habitat was reclassified from riverine to scrub-shrub riparian buffer (RIPB) in 2016. Approximately 95-100% of the lands within Cambria County, PA experienced abnormally dry (D0) conditions beginning in the last week of July and leading through our field investigations in September 2016 (National Drought Mitigation Center 2017) see Appendix C. These dry conditions may have depressed local groundwater levels particulailry in areas of the park with only a

seasonally high water table and thus potentially limiting the effectiveness of this inventory. This 2016 delineation is consistent with current DO #77.1 guidelines (Table 1) and supercedes the wetland delineation completed by Keller Engineers (2009).

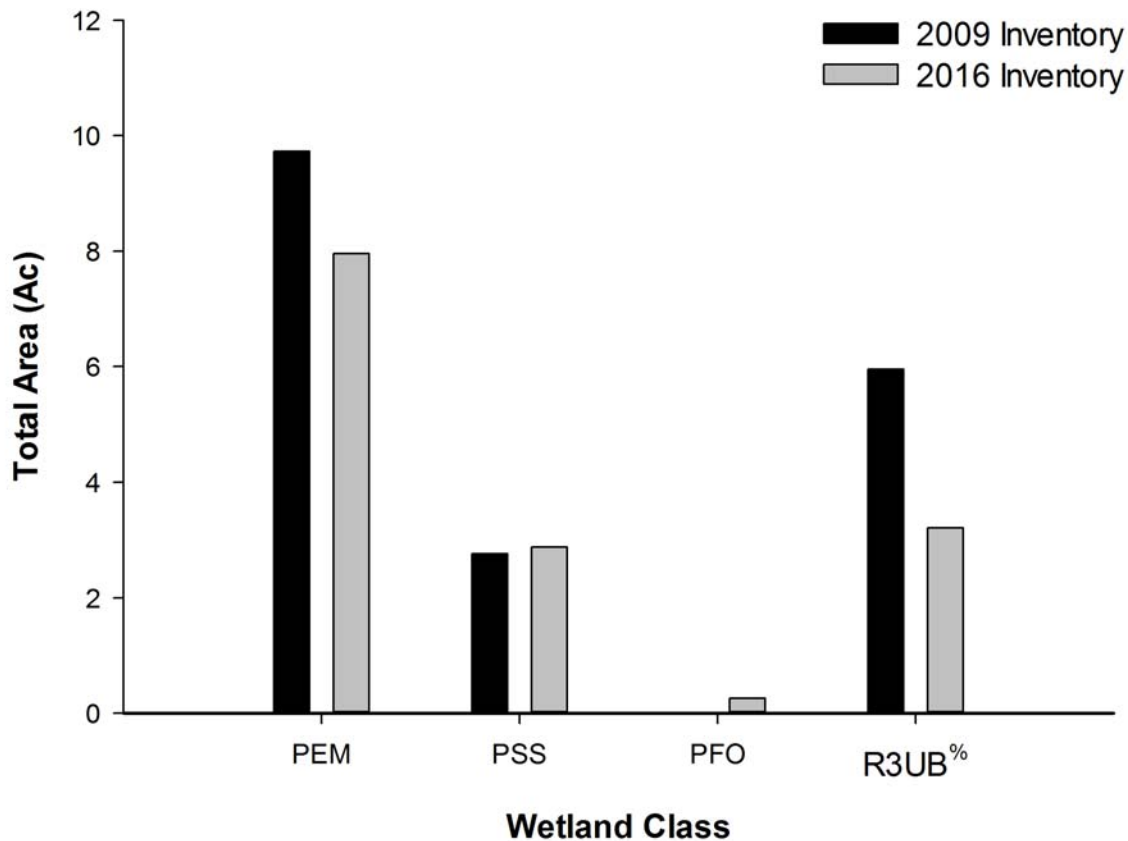
Table 1. Summary statistics showing the results of the Keller Engineers 2009 and Sharpe and Kelley 2016 wetland inventories for the JOFL Cultural Landscape Lakebed and Abutment areas. Statistics were performed using the PROC MEANS procedure in SAS version 9.4 (SAS Institute Inc., 2013).

2009 Inventory (Keller Engineers 2009)					
Wetland Class	Number of Wetland features	Total (ac)	Average (ac)	Smallest Feature (ac)	Largest Feature (ac)
PEM	18	9.73	0.54	0.004	5.20
PSS	7	2.76	0.39	0.04	1.40
R3UB	6	5.95	0.99	0.03	3.01
Grand Total	31	18.44			

2016 Inventory (Sharpe and Kelley 2016)					
Wetland Class	Number of Wetland features	Total (ac)	Average (ac)	Smallest Feature (ac)	Largest Feature (ac)
PEM	16	7.96	0.50	0.01	2.62
PSS	6	2.88	0.48	0.02	1.95
PFO	1	0.26	0.26	0.26	0.26
R3UB	4	3.21	0.80	0.03	3.01
RIPB*	2	2.74	1.37	0.95	1.79
Grand Total	29	17.05			

*RIPB is not a Cowardin et al. (1979) class. We created this class in GIS to differentiate the actual riverine wetland systems from the riparian buffers delineated in 2009.

The majority of the acreage differences between the two surveys occurred within the PEM (palustrine emergent) wetland class within the park (9.73 ac in 2009 versus 7.96 acres in 2016). An analytical assessment that attempts to address why this change occurred between inventory years is beyond the scope of this investigation, however, there are a number of possible factors working independently or in conjunction that could account for observed differences between 2009 and 2016. Some of these factors include but are not limited to: differences in hydrologic conditions on-site during sampling (2009 versus 2016); duration of survey; vegetation succession; and natural/anthropogenic disturbances.



%Riverine Habitats (R3UB) were not remapped in 2016. The difference shown is attributed to the reclassification of 2.74 ac of the habitats mapped as R3UB in 2009 to our new riparian buffer class (RIPB) in 2016.

Figure 2. Histogram showing the total acres of wetland habitat delineated by Cowardin et al. (1979) class type for the 2016 and 2009 inventories.

Wetland Descriptions

Due to the number of unique polygon features mapped during the 2016 inventory a detailed summary of each individual wetland polygon was not attempted for this report. The reader is referred to the wetland summary in Table 2, the report mapping, wetland data sheets, and representative photographs for more information.

Table 2. Summary of general palustrine wetland classes and their respective function and values at JOFL for the 2016 palustrine wetland delineation.

Wetland Polygon ID	Cowardin Class*	Size (Ac)	Primary Wetland Function and Values (<i>The Highway Methodology Workbook Supplement, September 1999</i>)
W1	PEM	0.01	Groundwater Recharge, Uniqueness/Heritage, Sediment Retention, Recreation
W2	PEM	0.06	Groundwater Discharge, Sediment Retention, Wildlife Habitat, Uniqueness/Heritage, Recreation
W3	PEM	0.13	Groundwater Discharge, Wildlife Habitat, Uniqueness/Heritage, Recreation
W4	PEM	0.04	Groundwater Discharge, Wildlife Habitat, Uniqueness/Heritage, Visual Quality/Aesthetics
W5	PEM	0.07	Groundwater Recharge/Discharge, Sediment Retention, Wildlife Habitat
W5	PSS	0.26	Groundwater Recharge/Discharge, Sediment Retention, Wildlife Habitat
W9	PEM	4.37	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Wildlife Habitat, Nutrient Removal
W13	PEM	2.72	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Wildlife Habitat, Nutrient Removal, Visual Quality/Aesthetics
W13	PSS	2.00	Sediment/Toxicant Retention, Wildlife Habitat, Nutrient Removal, Visual Quality/Aesthetics
W14	PEM	0.08	Groundwater Discharge, Wildlife Habitat, Uniqueness/Heritage, Visual Quality/Aesthetics
W16	PFO	0.26	Groundwater Discharge, Wildlife Habitat, Production Export
W18	PEM	0.01	Groundwater Discharge
W19	PEM	0.18	Groundwater Discharge, Wildlife Habitat
W20	PEM	0.29	Groundwater Discharge, Wildlife Habitat
W21	PSS	0.62	Sediment Retention, Wildlife Habitat, Production Export

*The wetland delineation data sheets and attached geodatabase provide greater Cowardin et al. (1979) specificity (subclass and special modifiers) and spatial extent information for the above wetland systems presented in this report.

What follows is a general description of the principal palustrine wetland classes inventoried over the course this study.

Palustrine Emergent Wetlands (PEM) – Total Acres = 7.96

Palustrine emergent wetland classes were the most commonly encountered wetland type within the reservoir study area boundary both in terms of their frequency (n=16) and total area (7.96 acres). With one notable exception (see photograph 4 below) these wetlands have remained relatively undisturbed since 2009 Keller inventory. Dominant plant species varied depending on the wetland, but generally species such as *Leersia oryzoides*, *Scirpus cyprinus*, *Juncus effusus*, *Typha latifolia*, *Phalaris arundinacea*, and *Euthamia graminifolia* were commonly observed within these habitats. The water regimes within these systems appeared to be saturated or flooded at least seasonally and as such soil indicators generally fell within the F3 (Depleted Matrix) hydric soil type.



Photograph 3 (P3) – Wetland 5 (PEM portion) view is 196°S. Photo Date 19 September 2016 – P. Sharpe.



Photograph 4 (P4) – Wetland 4 view is 324°NW looking at an ATV trail that bisects the site. Photo Date 19 September 2016 – P. Sharpe.



Photograph 5 (P5) – Wetland 19 view is 164° south. Photo Date 19 September 2014 – P. Sharpe.

Palustrine Scrub-Shrub Wetlands (PSS) – Total Acres = 2.88

Palustrine scrub-shrub wetland classes were the next most frequent wetland type within the reservoir study area boundary (n=6) encompassing a total area of (2.88 acres). Though they encompass less total area compared to the emergent wetlands these systems appear to exhibit high function and value within the landscape as wildlife habitat and sediment/toxicant retention and nutrient removal. The PSS habitats along the western edge of the South Fork of the Little Conemaugh River appeared to be derived from old oxbow channels (see photograph 6 below) while the large PSS system to the Northeast of the river (W13) appeared to be the by-product of trapped surface and groundwater flows upgradient of the railroad line running through the park. *Salix sericea* and *Alnus incana* sub. *rugosa* tended to dominate the shrub layers of these habitats with herbaceous species such as *Leersia oryzoides*, *cuscuta gronovii*, *Lycopus americanus*, and *Phalaris arundinacea* commonly observed beneath the canopies. The water regimes within these systems appeared to be seasonally saturated/flooded with soil indicators typically falling within the F19 (Piedmont Floodplain Soils) at the drier sites and F3 (Depleted Matrix) for the PSS habitats with more apparent saturation/inundation of their soils.



Photograph 6 (P6) – Wetland 21 (PSS) view is 153°SE looking at the remains of an oxbow channel. Photo Date 21 September 2016 – P. Sharpe.



Photograph 7 (P7) – Image of a beaver lodge within Wetland 21 (PSS). Photo Date 21 September 2016 – P. Sharpe.

Palustrine Forested Wetlands (PFO) – Total Acres = 0.26

Though not significant on either a total area or frequency basis compared to other wetland classes within the park, the Palustrine Forested wetland class (PFO) was a new category observed within the park since the 2009 Keller work. The forested wetland observed in 2016 appears to have been the product of natural succession occurring since the 2009 Keller inventory as this area within the park (W16) was previously mapped as a scrub-shrub habitat (see Photograph 8). *Acer rubrum* dominated the canopy species within the site with the shrub layer mainly comprised of (*Lonicera tatarica*) associated with wetland herbaceous species such as *Impatiens capensis*, *Persicaria virginiana*, *Solidago uliginosa*, and *Leersia oryzoides*. A shallow water table was observed within the site as was soil saturation within the upper 12 inches of the soil profile indicating hydric conditions. Soils within this wetland were also suggestive of prolonged saturated conditions as they fell within the F3 (Depleted Matrix) category.



Photograph 8 (P8) – Wetland 16 (PFO) view is 19°N looking at a light gap within the PFO community. Photo Date 19 September 2016 – P. Sharpe.

Riverine Wetlands (R3UB) – Total Acres = 3.21

Unlike the palustrine wetlands within the reservoir study area the riverine wetland systems (streams/waterways) were not re-delineated in the field over the course of this investigation. It was our opinion that the 2009 Keller riverine inventory boundaries were still accurate with one notable exception – the scrub-shrub riparian buffers. Current DO #77.1 guidelines stipulate that riverine wetland systems typically be delineated from ordinary high water mark to ordinary high water mark which is also keeping with common US Army Corps and PADEP practice for delineating these water features. In an effort to keep the riparian buffer spatial data collected by Keller (2009) and comply with best practices for delineating these habitats we re-categorized the non-waterway data from riverine (R3UB) in 2009 to “riparian buffer” (RIPB) in 2016 (see Table 1).

The South Fork of the Little Conemaugh River remains the principal riverine feature within the study area. This waterway is severely impaired as evidenced by Sheeder and Tzilkowski (2006) who assessed a suite of biological and water quality parameters at two river locations within the reservoir study area boundary (JOFL-1 and 5 of the 2006 report). The other principal waterways

(riverine features) within the study area identified by Sheeder and Tzilkowski (2006) and mapped as R3UB features in the Keller (2009) inventory were considered to possess “good” water quality, though signs of stress potentially stemming from highway road drainage (US Route 19) was noted. One of these unnamed tributaries (JOFL-2) was reevaluated in 2008 (Tzilkowski et al. 2008) and it was determined to have an impaired condition compared against similar waterways from the Allegheny Portage Railroad National Historic Site (ALPO). It was theorized that the sources of impairment to this waterway were likely from historic mining activity.

Recommendations

The information provided in this report should be considered an update to the 2009 Keller wetland inventory and supplemental to the previous NPS work onsite. Any manipulations to the wetlands which would include the removal of wetland vegetation; dredging, or filling the wetlands; or changes to the stream course, current, or cross section of any of the mapped riverine features within the park, are likely to be subject to NPS, state/local, and EPA/US Army Corps (Pittsburgh District) review under D.O. #77.1 and Section 404 Clean Water Act guidelines. Dr. Kevin Noon (NPS-WRD) and myself would be your principal points of contact for guidance related to the development of a formal wetland and floodplain statement of findings should the park have any compliance related questions related to the information contained within this report.

We also recommend eliminating, or relocating to an upland area, the ATV trail that is currently bisecting Wetland 4 (see Photograph 4). If the trail cannot be easily removed an alternative path which avoids wetland impacts was discussed and shown to Dr. Kathy Penrod in the field and the park is encouraged to use that alternative route.

Conclusion

This 2016 delineation is consistent with current DO #77.1 guidelines (Table 1) and supercedes the wetland delineation completed by Keller Engineers (2009).

If you have any questions regarding this report please call Peter Sharpe (267) 858-1001.

Wetland data sheets and supporting GIS data will be provided to Kathy Penrod and posted to the NPS data store.

cc: (by e-mail only)

WRD - K. Noon,

NER – C. Chapin, M. Marshall

References Cited

- Cowardin, L. M., F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. Technical Report Y-87-1.
- Keller Engineers, Inc. June 2009. Wetland Identification and Delineation Report for Johnstown Flood National Memorial in Adams and Croyle Townships, Cambria County, PA. Project Number 1713-6.
- National Drought Mitigation Center. 2017. US Drought Risk Atlas. (<http://droughtatlas.unl.edu/Data.aspx>, 4 May 2017).
- National Park Service (NPS). 2012. National Park Service Procedural Manual #77-1: Wetland Protection.
- National Wetland Inventory. 2017. Wetlands Mapper. (<https://www.fws.gov/wetlands/data/mapper.html>, 4 May 2017)
- Perles, S.J., G.S. Podneisinski, E.A. Zimmerman, W.A. Millinor, L.A. Sneddon. February 2006. Vegetation Classification and Mapping at Johnstown Flood National Memorial. Technical Report NPS/NER/NRTR—2006/034. National Park Service. Philadelphia, PA.
- SAS (2002–2013) System version 9.4 for windows. SAS Institute Inc., Carry, NC., USA
- Sheeder, S. A. and C. J. Tzilkowski. October 2006. Level I Water Quality Inventory and Aquatic Biological Assessment of The Allegheny Portage Railroad National Historic Site and The Johnstown Flood National Memorial. Technical Report NPS/NER/NRTR -2006/060. National Park Service, Northeast Region. Philadelphia, PA.
- U.S. Army Corps of Engineers (New England District). September 1999. The Highway Methodology Workbook Supplement. NAEEP-360-1-30a.
- U.S. Army Corps of Engineers (USACE). 2012. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-10-9. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers (USACE). 2016. National Wetland Plant List (NWPL). (http://wetland-plants.usace.army.mil/nwpl_static/mapper/mapper.html, 4 May 2017).

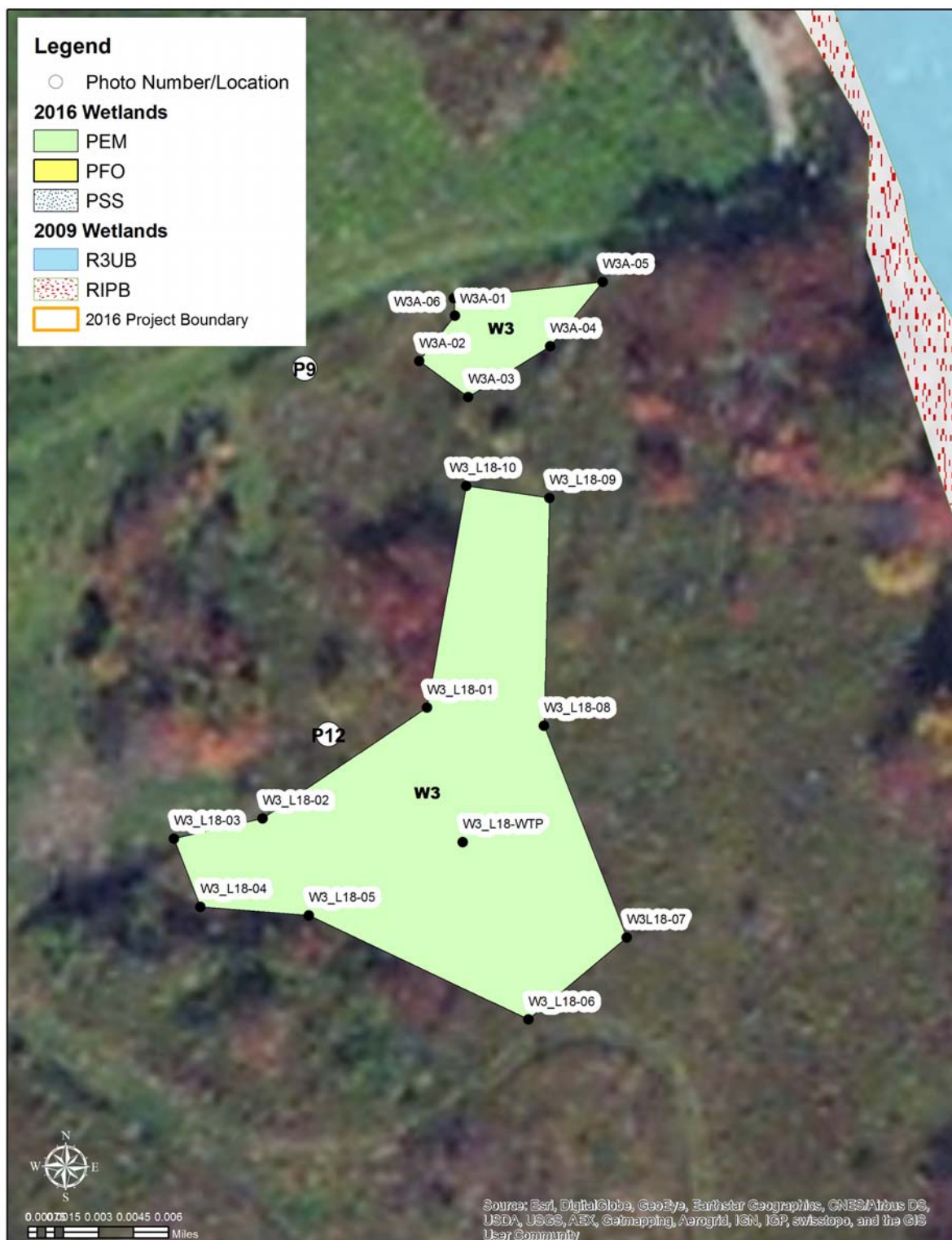
USDA, NRCS. 2017. The PLANTS Database (<http://plants.usda.gov>, 4 May 2017). National Plant Data Team, Greensboro, NC 27401-4901 USA.

USDA Soil Conservation Service. 1994. Changes in hydric soils of the United States. Federal Register 59(133): 35680-35681, July 13, 1994.

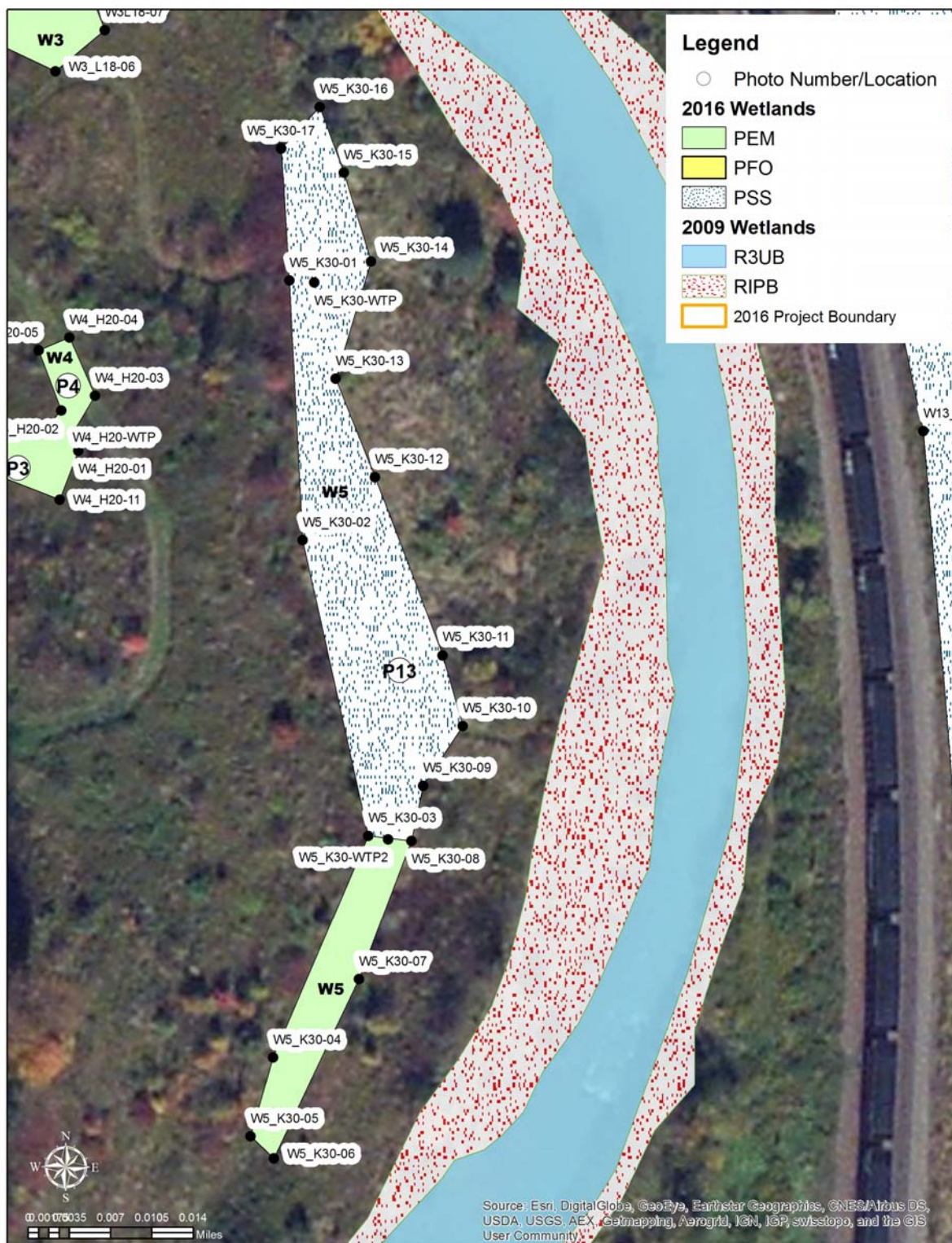
Appendix A. Detailed wetland polygon mapping

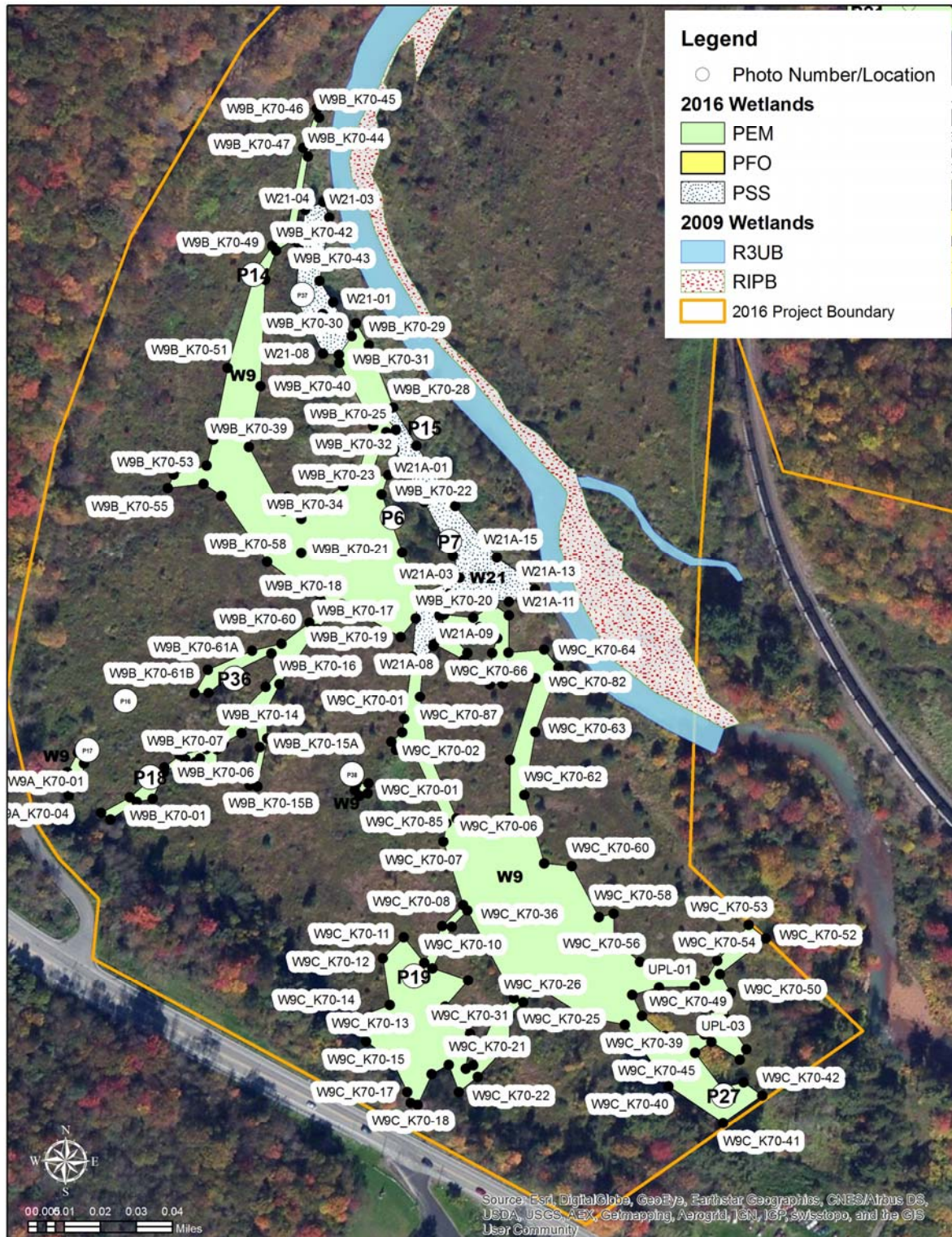


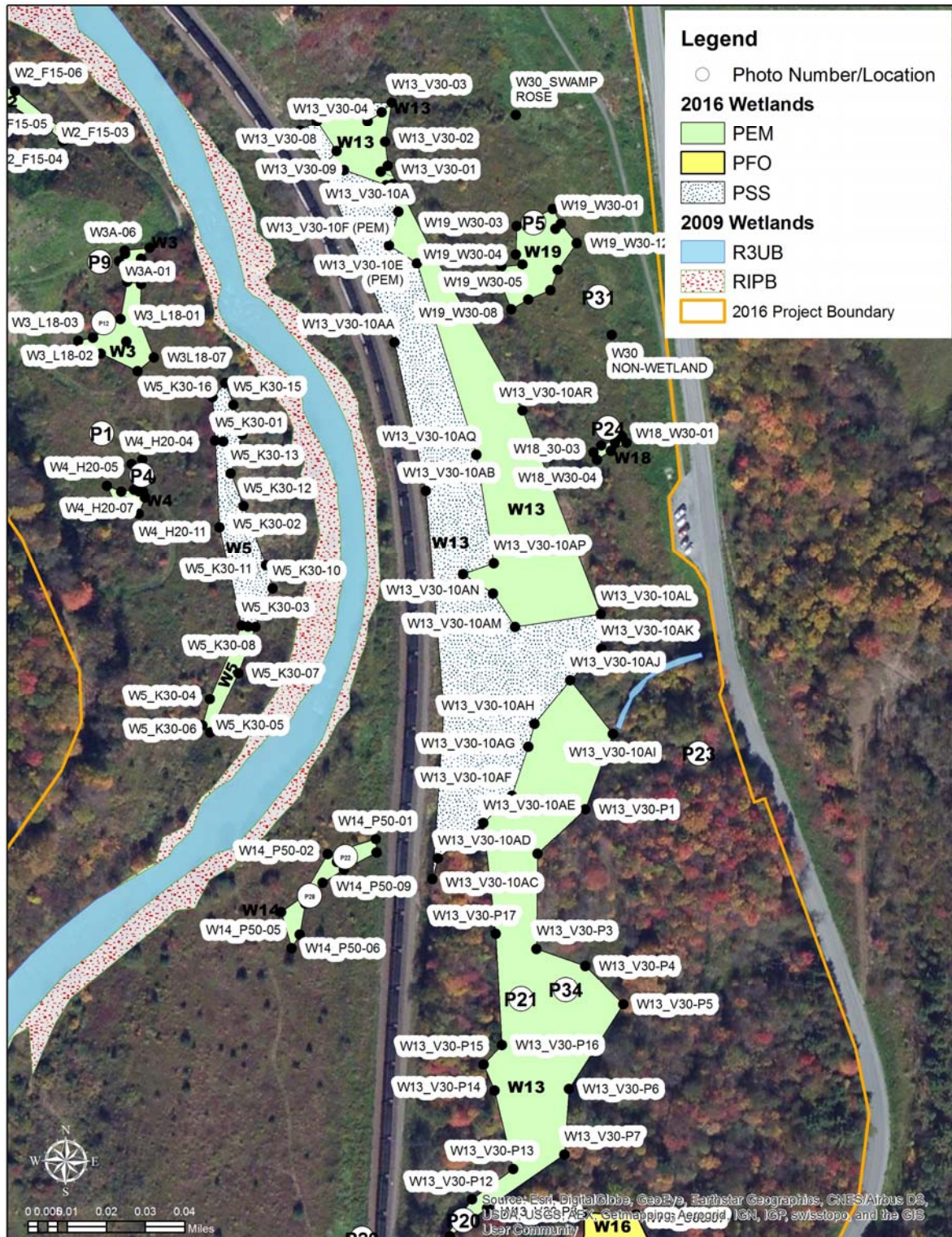




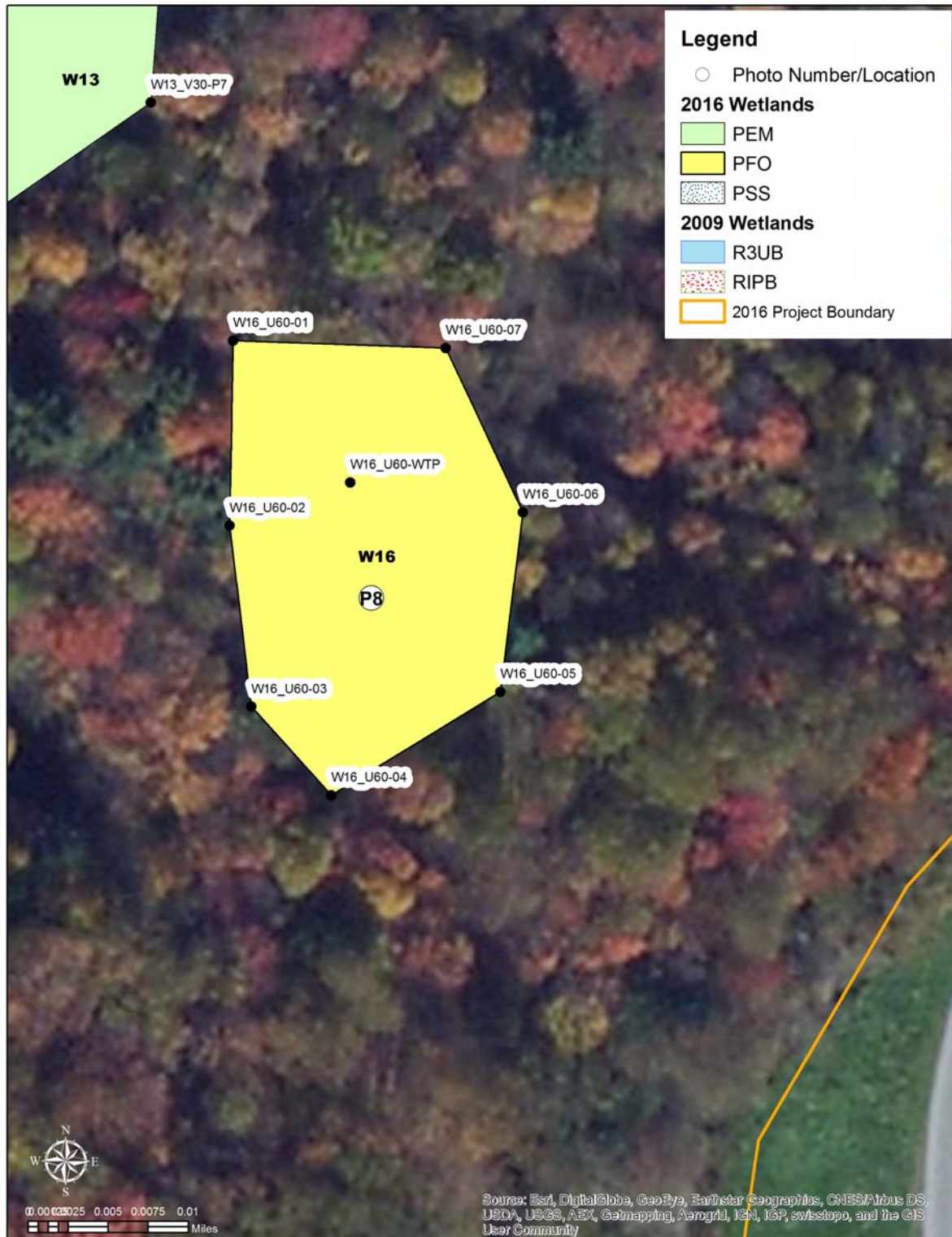


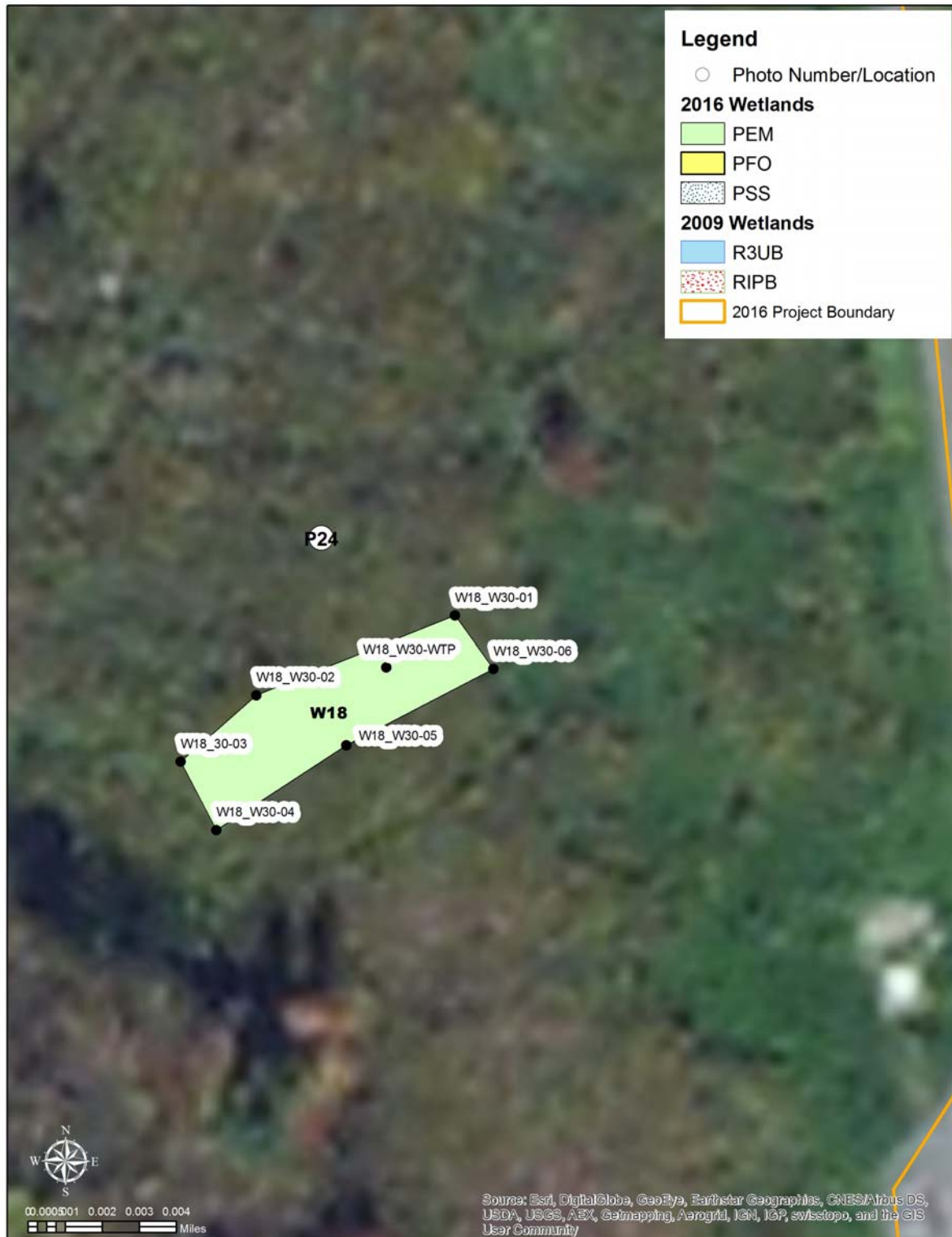


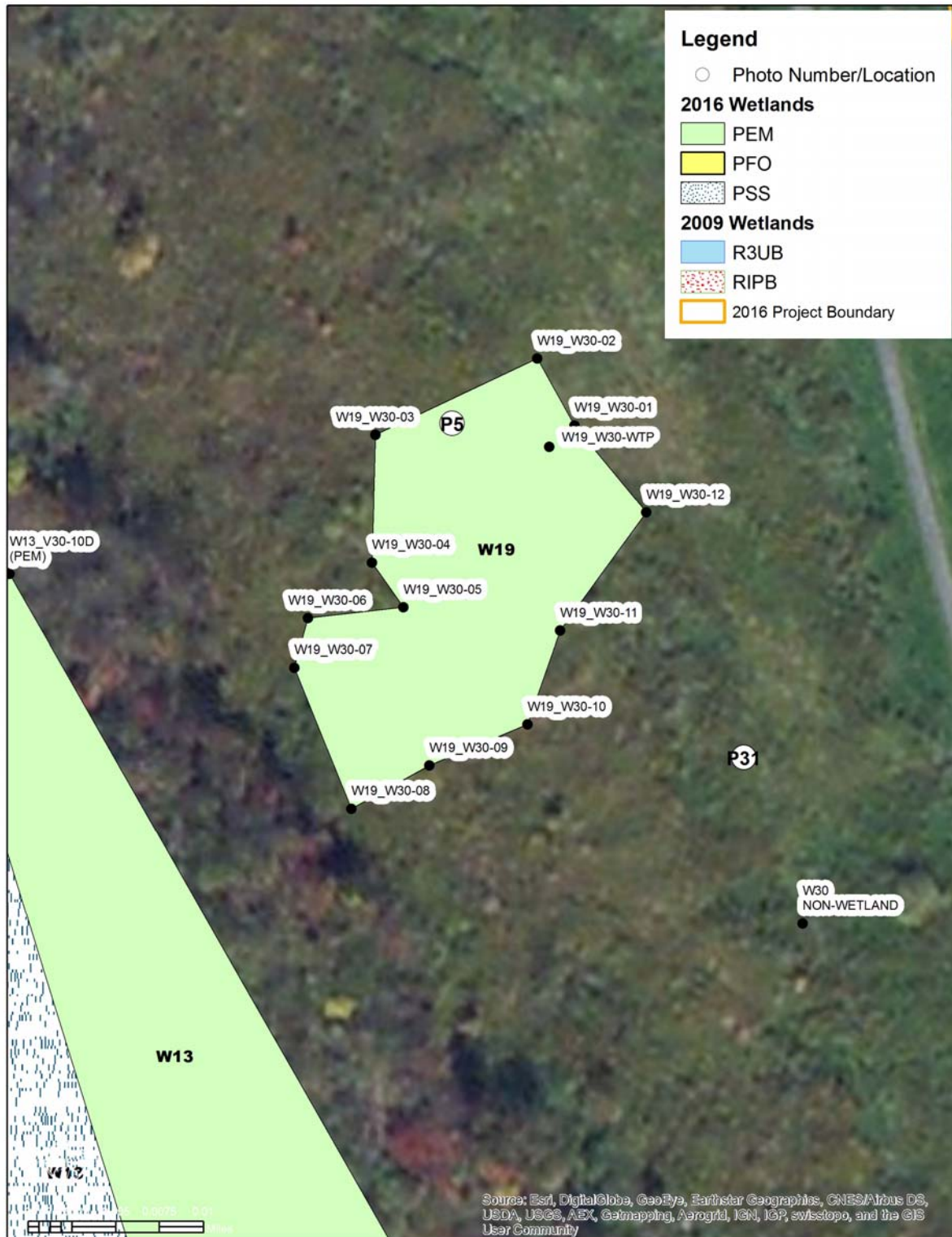


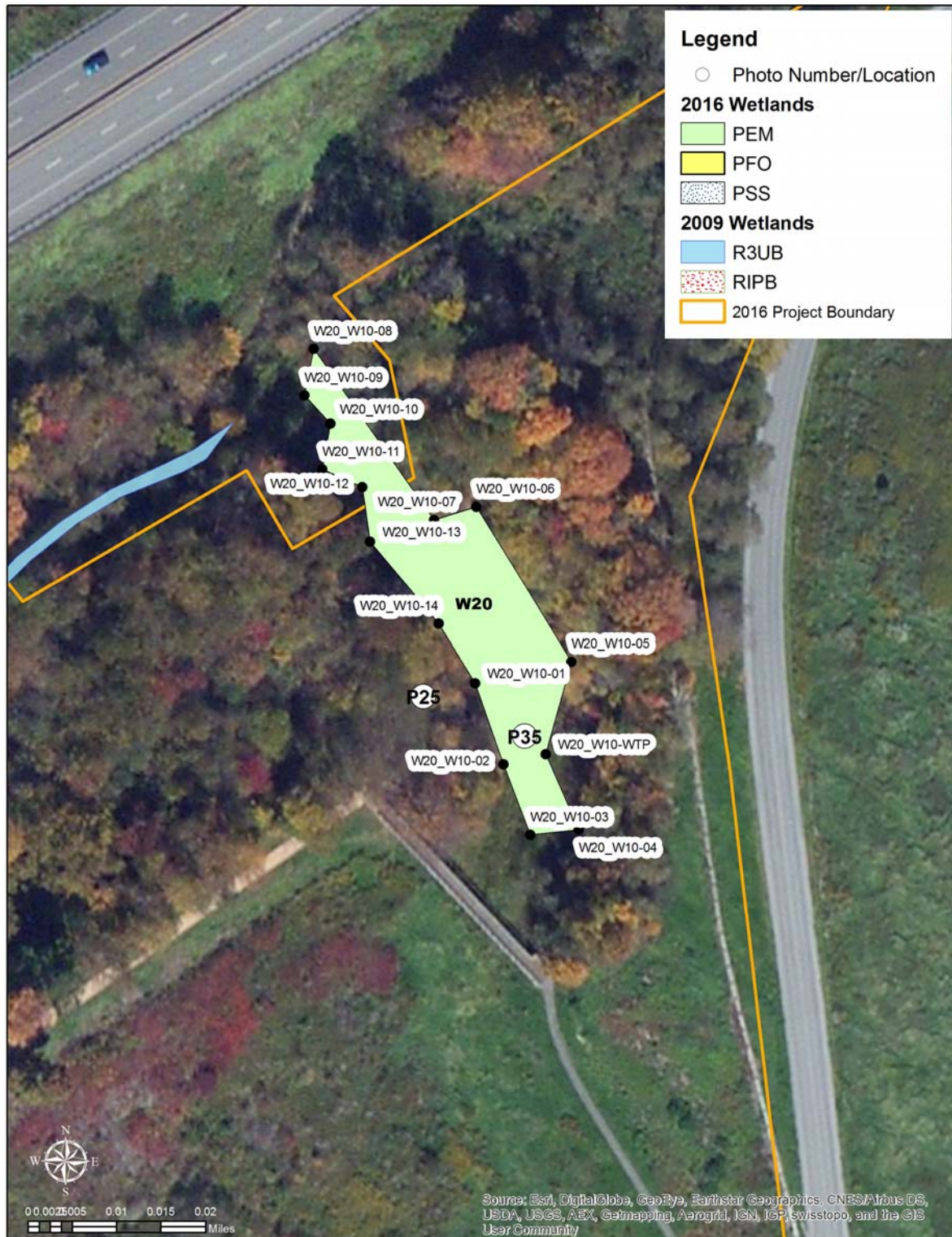


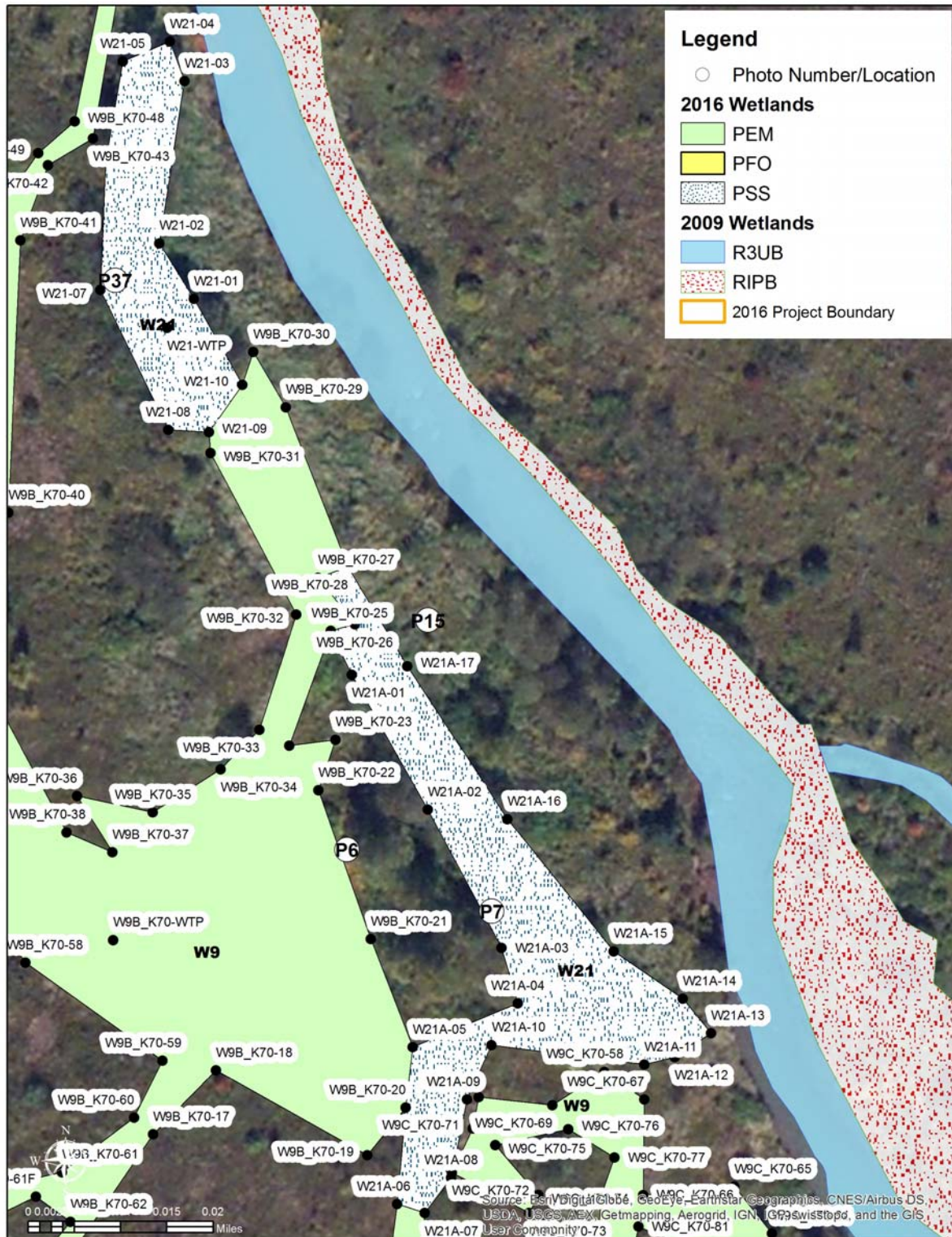












Appendix B. Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/23/2016
 Applicant/Owner: NPS State: PA Sampling Point: W1-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): sinkhole/borrow pit Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 40.348745 Long: -78.776499 Datum: NAD83
 Soil Map Unit Name: At-Atkins silt loam NWI Classification: PEM2Bx

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☒ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☒ Yes ☐ No Depth (inches): <u>12</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>10</u> (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W1-WTP

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	☐ Yes ☐ No	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.667</u> % (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>7.5</u> x 1 = <u>7.5</u> FACW species <u>17.5</u> x 2 = <u>35</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>25</u> (A) <u>42.5</u> (B) Prevalence Index = B/A = <u>1.700</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain)
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>79</u>) 1. <u>Symplocarpus foetidus</u> <u>7.5</u> ☒ Yes ☐ No <u>OBL</u> 2. <u>Impatiens pallida</u> <u>17.5</u> ☒ Yes ☐ No <u>FACW</u> 3. <u>Carex sp.</u> <u>7.5</u> ☐ Yes ☒ No 4. <u>Persicaria virginiana</u> <u>7.5</u> ☐ Yes ☒ No <u>FAC</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ _____ = Total Cover 50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>2827</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Hydrophytic Vegetation Present? ☒ Yes ☐ No				
Remarks: (If observed, list morphological adaptations below). sparsely vegetated concave site				

Sampling Point: W1-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/22/2016
 Applicant/Owner: NPS State: PA Sampling Point: W2-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Toe-of-Slope Local relief (concave, convex, none): Convex Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.348626 Long: -78.775898 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM2Br

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☒ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☒ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>2.0</u> Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W2-WTP

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	☐ Yes ☐ No	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____			Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
4. _____	_____			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>17.5</u> x 3 = <u>52.5</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>72.5</u> (A) <u>162.5</u> (B) Prevalence Index = B/A = <u>2.241</u>
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain)
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>79</u>) 1. <u>Impatiens capensis</u> <u>37.5</u> ☒ Yes ☐ No <u>FACW</u> 2. <u>Symphotrichum praealtum</u> <u>17.5</u> ☒ Yes ☐ No <u>FACW</u> 3. <u>Rumex crispus</u> <u>17.5</u> ☐ Yes ☒ No <u>FAC</u> 4. _____ ☐ Yes ☐ No 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ _____ = Total Cover 50% of total cover: <u>36.25</u> 20% of total cover: <u>14.5</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>2827</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Hydrophytic Vegetation Present? ☒ Yes ☐ No				
Remarks: (If observed, list morphological adaptations below).				

Sampling Point: W2-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/23/2016
 Applicant/Owner: NPS State: PA Sampling Point: W3,3A-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Toe-of-slope Local relief (concave, convex, none): Convex Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR N Lat: 40.347639 Long: -78.775273 Datum: NAD83
 Soil Map Unit Name: Ph-Philo silt loam NWI Classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W3,3A-

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.			☐ Yes ☐ No		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.					Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.000</u> % (A/B)
4.					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>21</u> x 2 = <u>42</u> FAC species <u>78.5</u> x 3 = <u>235.5</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>99.5</u> (A) <u>277.5</u> (B) Prevalence Index = B/A = <u>2.789</u>
5.					
6.					
7.					
8.					
_____ = Total Cover					Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____ 20% of total cover: _____					
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.	<u>Rubus occidentalis</u>	<u>37.5</u>	☒ Yes ☐ No	<u>NI</u>	
2.			☐ Yes ☐ No		
3.					Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
4.					
5.					
6.					
7.					
_____ = Total Cover					Hydrophytic Vegetation Present? ☒ Yes ☐ No
50% of total cover: <u>18.75</u> 20% of total cover: <u>7.5</u>					
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Solidago rugosa</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FAC</u>	
2.	<u>Euthamia graminifolia</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FAC</u>	
3.	<u>Scirpus cyperinus</u>	<u>17.5</u>	☐ Yes ☒ No	<u>FACW</u>	
4.	<u>Apocynum sp. (veg)</u>	<u>37.5</u>	☒ Yes ☐ No		
5.	<u>Verbena bonariensis</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FAC</u>	
6.	<u>Onoclea sensibilis</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FACW</u>	
7.			☐ Yes ☐ No		
8.					
9.					
_____ = Total Cover					
50% of total cover: <u>68.5</u> 20% of total cover: <u>27.4</u>					
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Remarks: (If observed, list morphological adaptations below).					

Sampling Point: W3,3A-

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/23/2016
 Applicant/Owner: NPS State: PA Sampling Point: W4-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Toe-Of-Slope Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.347026 Long: -78.775102 Datum: NAD83
 Soil Map Unit Name: Ph-Philo silt loam NWI Classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☒ Vegetation ☒ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: one section of wetland <0.1 ac has been impacted by trail construction. Soils are compacted and the vegetation appears to be periodically mowed. Cambria county was experiencing abnormally dry conditions during and prior to inventory. US Drought	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☒ Yes ☐ No Depth (inches): <u>8.0</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>2.0</u> (includes capillary fringe)	Wetland Hydrology Present? ☒ Yes ☐ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W4-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.			☐ Yes ☐ No		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
2.					
3.					
4.					
5.					
6.					
7.					
8.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>24.5</u> x 1 = <u>24.5</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>71</u> x 3 = <u>213</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>170.5</u> (A) <u>387.5</u> (B) Prevalence Index = B/A = <u>2.273</u>
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
6.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Scirpus cyperinus</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FACW</u>	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2.	<u>Juncus effusus</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FACW</u>	
3.	<u>Persicaria sagittata</u>	<u>3.5</u>	☐ Yes ☒ No	<u>OBL</u>	
4.	<u>Verbena bonariensis</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FAC</u>	
5.	<u>Euthamia graminifolia</u>	<u>67.5</u>	☒ Yes ☐ No	<u>FAC</u>	
6.	<u>Symphotrichum puniceum</u>	<u>3.5</u>	☐ Yes ☒ No	<u>OBL</u>	
7.	<u>Carex lurida</u>	<u>17.5</u>	☐ Yes ☒ No	<u>OBL</u>	
8.			☐ Yes ☐ No		
9.					
10.					
11.					
12.					
<u>170.5</u> = Total Cover 50% of total cover: <u>85.25</u> 20% of total cover: <u>34.1</u>					
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					
Hydrophytic Vegetation Present? ☒ Yes ☐ No					
Remarks: (If observed, list morphological adaptations below).					

Sampling Point: W4-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/22/2016
 Applicant/Owner: NPS State: PA Sampling Point: W5-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Oxbow Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 40.346653 Long: -78.774512 Datum: NAD83
 Soil Map Unit Name: Ph-Philo silt loam NWI Classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☒ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☒ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>3.0</u> Water Table Present? ☒ Yes ☐ No Depth (inches): <u>9.5</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0.0</u> (includes capillary fringe)	Wetland Hydrology Present? ☒ Yes ☐ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W5-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.			☐ Yes ☐ No		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
2.					
3.					
4.					
5.					
6.					
7.					
8.					
_____ = Total Cover					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>102.5</u> x 1 = <u>102.5</u> FACW species <u>41</u> x 2 = <u>82</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>143.5</u> (A) <u>184.5</u> (B) Prevalence Index = B/A = <u>1.286</u>
50% of total cover: _____ 20% of total cover: _____					
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.			☐ Yes ☐ No		Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.			☐ Yes ☐ No		
3.					
4.					
5.					
6.					
7.					
8.					
_____ = Total Cover					Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
50% of total cover: _____ 20% of total cover: _____					
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Leersia oryzoides</u>	<u>67.5</u>	☒ Yes ☐ No	<u>OBL</u>	Hydrophytic Vegetation Present? ☒ Yes ☐ No
2.	<u>Juncus effusus</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FACW</u>	
3.	<u>Schoenoplectus tabernaemontani</u>	<u>1.5</u>	☐ Yes ☒ No	<u>OBL</u>	
4.	<u>Carex lurida</u>	<u>3.5</u>	☐ Yes ☒ No	<u>OBL</u>	
5.	<u>Symphytotrichum puniceum</u>	<u>7.5</u>	☐ Yes ☒ No	<u>OBL</u>	
6.	<u>Ludwigia palustris</u>	<u>17.5</u>	☐ Yes ☒ No	<u>OBL</u>	
7.	<u>Glyceria striata</u>	<u>1.5</u>	☐ Yes ☒ No	<u>OBL</u>	
8.	<u>Spiraea tomentosa</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FACW</u>	
9.	<u>sphagnum sp.</u>	<u>17.5</u>	☐ Yes ☒ No		
10.	<u>Typha latifolia</u>	<u>3.5</u>	☐ Yes ☒ No	<u>OBL</u>	
11.			☐ Yes ☐ No		
12.					
_____ = Total Cover					
50% of total cover: <u>80.5</u> 20% of total cover: <u>32.2</u>					
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Remarks: (If observed, list morphological adaptations below).					

Sampling Point: W5-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/22/2016
 Applicant/Owner: NPS State: PA Sampling Point: W5-WTP PSS
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Oxbow Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 40.347280 Long: -78.774687 Datum: NAD83
 Soil Map Unit Name: Ph-Philo silt loam NWI Classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: PEM portion of wetland has stronger hydrologic indicators.		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W5-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.			☐ Yes ☐ No		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.					Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.667</u> % (A/B)
4.					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>67.5</u> x 1 = <u>67.5</u> FACW species <u>87.5</u> x 2 = <u>175</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>155</u> (A) <u>242.5</u> (B) Prevalence Index = B/A = <u>1.565</u>
5.					
6.					
7.					
8.					
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____					
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.	<u>Salix sericea</u>	<u>67.5</u>	☒ Yes ☐ No	<u>OBL</u>	
2.	<u>Crataegus sp.</u>	<u>17.5</u>	☒ Yes ☐ No		
3.			☐ Yes ☐ No		
4.					
5.					
6.					
7.					
8.					
_____ = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>					
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Phalaris arundinacea</u>	<u>87.5</u>	☒ Yes ☐ No	<u>FACW</u>	
2.			☐ Yes ☐ No		
3.			☐ Yes ☐ No		
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
_____ = Total Cover 50% of total cover: <u>43.75</u> 20% of total cover: <u>17.5</u>					
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____					
Remarks: (If observed, list morphological adaptations below).					Hydrophytic Vegetation Present? ☒ Yes ☐ No

Sampling Point: W5-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/21/2016
 Applicant/Owner: NPS State: PA Sampling Point: W9A,B,C-
 Investigator(s): Peter sharpe, Eric Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.3429857 Long: -78.7759662 Datum: NAD 83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☒ Yes ☐ No Depth (inches): <u>12</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>6</u> (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W9A,B,C-

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	☐ Yes ☐ No	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____			Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
4. _____	_____			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>98.5</u> x 1 = <u>98.5</u> FACW species <u>3.5</u> x 2 = <u>7</u> FAC species <u>3.5</u> x 3 = <u>10.5</u> FACU species <u>3.5</u> x 4 = <u>14</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>109</u> (A) <u>130</u> (B) Prevalence Index = B/A = <u>1.193</u>
5. _____	_____			
6. _____	_____			
7. _____	_____			
8. _____	_____			Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain)
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>79</u>) 1. <u>Typha latifolia</u> <u>7.5</u> ☐ Yes ☒ No <u>OBL</u> 2. <u>Leersia oryzoides</u> <u>87.5</u> ☒ Yes ☐ No <u>OBL</u> 3. <u>Verbena bonariensis</u> <u>3.5</u> ☐ Yes ☒ No <u>FAC</u> 4. <u>Carex lurida</u> <u>3.5</u> ☐ Yes ☒ No <u>OBL</u> 5. <u>Epilobium coloratum</u> <u>3.5</u> ☐ Yes ☒ No <u>FACW</u> 6. <u>Dipsacus fullonum</u> <u>3.5</u> ☐ Yes ☒ No <u>FACU</u> 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ _____ = Total Cover 50% of total cover: <u>54.5</u> 20% of total cover: <u>21.8</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>2827</u>) 1. _____ ☐ Yes ☐ No 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below).				Hydrophytic Vegetation Present? ☒ Yes ☐ No

Sampling Point: W9A,B,C-

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/20/2016
 Applicant/Owner: NPS State: PA Sampling Point: W13-WTP
 Investigator(s): P. Sharpe, E. Kelly Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-1
 Subregion (LRR or MLRA): LRR N Lat: 40.348365 Long: -78.773897 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM1Bh

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: W13-WTP

US Army Corps of Engineers

Eastern Mountains and Piedmont

Sampling Point: W13-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/20/2016
 Applicant/Owner: NPS State: PA Sampling Point: W13-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.346345 Long: -78.773538 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PSS1Bh

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☒ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☒ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>3.5</u> Water Table Present? ☒ Yes ☐ No Depth (inches): <u>0.0</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0.0</u> (includes capillary fringe)	Wetland Hydrology Present? ☒ Yes ☐ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W13-WTP

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	☐ Yes ☐ No	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>149.5</u> x 1 = <u>149.5</u> FACW species <u>3.5</u> x 2 = <u>7</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>153</u> (A) <u>156.5</u> (B) Prevalence Index = B/A = <u>1.023</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain)
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>) 1. <u>Salix sericea</u> <u>97.5</u> ☒ Yes ☐ No <u>OBL</u> 2. _____ <u>_____</u> ☐ Yes ☐ No _____ 3. _____ <u>_____</u> _____ 4. _____ <u>_____</u> _____ 5. _____ <u>_____</u> _____ 6. _____ <u>_____</u> _____ 7. _____ <u>_____</u> _____ 8. _____ <u>_____</u> _____				
_____ = Total Cover 50% of total cover: <u>48.75</u> 20% of total cover: <u>19.5</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>79</u>) 1. <u>Cuscuta gronovii</u> <u>3.5</u> ☐ Yes ☒ No _____ 2. <u>Lycopus americanus</u> <u>3.5</u> ☐ Yes ☒ No <u>OBL</u> 3. <u>Leersia oryzoides</u> <u>37.5</u> ☒ Yes ☐ No <u>OBL</u> 4. <u>Persicaria sagittata</u> <u>7.5</u> ☐ Yes ☒ No <u>OBL</u> 5. <u>Eupatorium perfoliatum</u> <u>3.5</u> ☐ Yes ☒ No <u>FACW</u> 6. <u>Persicaria hydropiper</u> <u>3.5</u> ☐ Yes ☒ No <u>OBL</u> 7. <u>Schoenoplectus tabernaemontani</u> <u>3.5</u> ☐ Yes ☒ No <u>OBL</u> 8. _____ <u>_____</u> _____ 9. _____ <u>_____</u> _____ 10. _____ <u>_____</u> _____ 11. _____ <u>_____</u> _____ 12. _____ <u>_____</u> _____				
_____ = Total Cover 50% of total cover: <u>31.25</u> 20% of total cover: <u>12.5</u>				Hydrophytic Vegetation Present? ☒ Yes ☐ No
Woody Vine Stratum (Plot size: <u>2827</u>) 1. _____ <u>_____</u> ☐ Yes ☐ No _____ 2. _____ <u>_____</u> _____ 3. _____ <u>_____</u> _____ 4. _____ <u>_____</u> _____ 5. _____ <u>_____</u> _____				
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below).				

Sampling Point: W13-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/22/2016
 Applicant/Owner: NPS State: PA Sampling Point: W14-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 40.345758 Long: -78.774119 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☒ Yes ☐ No Depth (inches): <u>12.0</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>7.0</u> (includes capillary fringe)	Wetland Hydrology Present? ☒ Yes ☐ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W14-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.			☐ Yes ☐ No		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B) Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>45</u> x 1 = <u>45</u> FACW species <u>162.5</u> x 2 = <u>325</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>207.5</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>1.783</u>
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		<u> </u> = Total Cover			
		50% of total cover: <u> </u>	20% of total cover: <u> </u>		
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.	<u>Salix sericea</u>	<u>7.5</u>	☐ Yes ☒ No	<u>OBL</u>	
2.			☐ Yes ☐ No		
3.					
4.					
5.					
6.					
7.					
8.					
		<u>7.5</u> = Total Cover			
		50% of total cover: <u>3.75</u>	20% of total cover: <u>1.5</u>		
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Spiraea tomentosa</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FACW</u>	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2.	<u>Scirpus cyperinus</u>	<u>87.5</u>	☒ Yes ☐ No	<u>FACW</u>	
3.	<u>Juncus effusus</u>	<u>67.5</u>	☒ Yes ☐ No	<u>FACW</u>	
4.	<u>Glyceria striata</u>	<u>37.5</u>	☐ Yes ☒ No	<u>OBL</u>	
5.			☐ Yes ☐ No		
6.					
7.					
8.					
9.					
10.					
11.					
12.					
		<u>200</u> = Total Cover			
		50% of total cover: <u>100</u>	20% of total cover: <u>40</u>		
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
		<u> </u> = Total Cover			
		50% of total cover: <u> </u>	20% of total cover: <u> </u>		
Hydrophytic Vegetation Present? ☒ Yes ☐ No					
Remarks: (If observed, list morphological adaptations below).					

Sampling Point: W14-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/20/2016
 Applicant/Owner: NPS State: PA Sampling Point: W16-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Toe-Of-Slope Local relief (concave, convex, none): Convex Slope (%): 2-3%
 Subregion (LRR or MLRA): LRR N Lat: 40.344415 Long: -78.772572 Datum: NAD83
 Soil Map Unit Name: LDF - Laidig soils NWI Classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☒ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☒ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☒ Yes ☐ No Depth (inches): <u>11</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>9</u> (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: buttressed tree roots, stressed and dead shrubs and trees		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W16-WTP

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.000</u> % (A/B)
2. <u>Fraxinus pennsylvanica</u>	<u>17.5</u>	☐ Yes ☒ No	<u>FACW</u>	
3. <u>Acer saccharum</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FACU</u>	
4. <u>Magnolia acuminata</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FACU</u>	
5. _____	_____	☐ Yes ☐ No	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>70</u> = Total Cover 50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>7</u> x 1 = <u>7</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>52.5</u> x 4 = <u>210</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>129.5</u> (A) <u>402</u> (B) Prevalence Index = B/A = <u>3.104</u>
Sapling/Shrub Stratum (Plot size: <u>707</u>)				
1. <u>Lonicera tatarica</u>	<u>37.5</u>	☒ Yes ☐ No	<u>FACU</u>	
2. _____	_____	☐ Yes ☐ No	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>37.5</u> = Total Cover 50% of total cover: <u>18.75</u> 20% of total cover: <u>7.5</u>				
Herb Stratum (Plot size: <u>79</u>)				Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Impatiens capensis</u>	<u>7.5</u>	☒ Yes ☐ No	<u>FACW</u>	
2. <u>Persicaria virginiana</u>	<u>7.5</u>	☒ Yes ☐ No	<u>FAC</u>	
3. <u>Solidago uliginosa</u>	<u>3.5</u>	☐ Yes ☐ No	<u>OBL</u>	
4. <u>Leersia oryzoides</u>	<u>3.5</u>	☐ Yes ☐ No	<u>OBL</u>	
5. _____	_____	☐ Yes ☐ No	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>22</u> = Total Cover 50% of total cover: <u>11</u> 20% of total cover: <u>4.4</u>				
Woody Vine Stratum (Plot size: <u>2827</u>)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	☐ Yes ☐ No	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Hydrophytic Vegetation Present? ☒ Yes ☐ No				
Remarks: (If observed, list morphological adaptations below).				

Sampling Point: W16-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/20/2016
 Applicant/Owner: NPS State: PA Sampling Point: W18-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 10-20%
 Subregion (LRR or MLRA): LRR N Lat: 40.329575 Long: -78.780472 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM1B

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☒ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>0.5</u> Water Table Present? ☒ Yes ☐ No Depth (inches): <u>9.5</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0.0</u> (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W18-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.			☐ Yes ☐ No		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.000</u> % (A/B)
2.					
3.					
4.					
5.					
6.					
7.					
8.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>48</u> x 1 = <u>48</u> FACW species <u>12.5</u> x 2 = <u>25</u> FAC species <u>7.5</u> x 3 = <u>22.5</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>68</u> (A) <u>95.5</u> (B) Prevalence Index = B/A = <u>1.404</u>
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Typha latifolia</u>	<u>7.5</u>	☐ Yes ☒ No	<u>OBL</u>	
2.	<u>Juncus effusus</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FACW</u>	
3.	<u>Solidago uliginosa</u>	<u>37.5</u>	☒ Yes ☐ No	<u>OBL</u>	
4.	<u>Euthamia graminifolia</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FAC</u>	
5.	<u>Securigera varia</u>	<u>17.5</u>	☒ Yes ☐ No	<u>NI</u>	
6.	<u>Lysimachia terrestris</u>	<u>1.5</u>	☐ Yes ☒ No	<u>OBL</u>	
7.	<u>Symphotrichum lateriflorum</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FACW</u>	
8.	<u>Persicaria sagittata</u>	<u>1.5</u>	☐ Yes ☒ No	<u>OBL</u>	
9.	<u>Scirpus cyperinus</u>	<u>1.5</u>	☐ Yes ☒ No	<u>FACW</u>	
10.			☐ Yes ☐ No		
11.					
12.					
<u>85.5</u> = Total Cover 50% of total cover: <u>42.75</u> 20% of total cover: <u>17.1</u>					Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
<u> </u> = Total Cover 50% of total cover: <u> </u> 20% of total cover: <u> </u>					
Remarks: (If observed, list morphological adaptations below).					

 Hydrophytic Vegetation Present? ☒ Yes ☐ No

Sampling Point: W18-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/20/2016
 Applicant/Owner: NPS State: PA Sampling Point: W19-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 10-15%
 Subregion (LRR or MLRA): LRR N Lat: 40.348097 Long: -78.773146 Datum: NAD83
 Soil Map Unit Name: At - Atkins silt loam NWI Classification: PEM1B

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☒ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? ☒ Yes ☐ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W19-WTP

Tree Stratum (Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix nigra</u>	<u>17.5</u>	☒ Yes ☐ No	<u>OBL</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	☐ Yes ☐ No	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.000</u> % (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>24.5</u> x 2 = <u>49</u> FAC species <u>7.5</u> x 3 = <u>22.5</u> FACU species <u>1.5</u> x 4 = <u>6</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>93.5</u> (A) <u>137.5</u> (B) Prevalence Index = B/A = <u>1.471</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>17.5</u> = Total Cover 50% of total cover: <u>8.75</u> 20% of total cover: <u>3.5</u>				Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>)				
1. <u>Salix sericea</u>	<u>37.5</u>	☒ Yes ☐ No	<u>OBL</u>	
2. _____	_____	☐ Yes ☐ No	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>37.5</u> = Total Cover 50% of total cover: <u>18.75</u> 20% of total cover: <u>7.5</u>				Hydrophytic Vegetation Present? ☒ Yes ☐ No
Herb Stratum (Plot size: <u>79</u>)				
1. <u>Onoclea sensibilis</u>	<u>17.5</u>	☒ Yes ☐ No	<u>FACW</u>	
2. <u>Impatiens capensis</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FACW</u>	
3. <u>Euthamia graminifolia</u>	<u>7.5</u>	☐ Yes ☒ No	<u>FAC</u>	
4. <u>Typha latifolia</u>	<u>3.5</u>	☐ Yes ☒ No	<u>OBL</u>	
5. <u>Symphytichum lateriflorum</u>	<u>3.5</u>	☐ Yes ☒ No	<u>FACW</u>	
6. <u>Persicaria sagittata</u>	<u>1.5</u>	☐ Yes ☒ No	<u>OBL</u>	
7. <u>Dipsacus laciniatus</u>	<u>1.5</u>	☐ Yes ☒ No	<u>FACU</u>	
8. _____	_____	☐ Yes ☐ No	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>38.5</u> = Total Cover 50% of total cover: <u>19.25</u> 20% of total cover: <u>7.7</u>				
Woody Vine Stratum (Plot size: <u>2827</u>)				
1. _____	_____	☐ Yes ☐ No	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below).				

Sampling Point: W19-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/21/2016
 Applicant/Owner: NPS State: PA Sampling Point: W20-WTP
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Croyle
 Landform (hillslope, terrace, etc.): Toe of Slope Local relief (concave, convex, none): None Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.349658 Long: -78.773556 Datum: NAD 83
 Soil Map Unit Name: LDF - Laidig soils NWI Classification: PEM2Br

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☒ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: location is in old spillway. concrete barrier beneath site. Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☒ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth (inches): <u>1</u> Water Table Present? ☒ Yes ☐ No Depth (inches): <u>0</u> Saturation Present? ☒ Yes ☐ No Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W20-WTP

Tree Stratum	(Plot size: <u>2827</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.			☐ Yes ☐ No		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.			☐ Yes ☐ No		Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.667</u> % (A/B)
4.					Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>145</u> x 1 = <u>145</u> FACW species <u>3.7</u> x 2 = <u>7.4</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>148.7</u> (A) <u>152.4</u> (B) Prevalence Index = B/A = <u>1.025</u>
5.					
6.					
7.					
8.					
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____					Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0* ☐ 4 - Morphological Adaptations* ☐ Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>707</u>)					
1.	<u>Salix sericea</u>	<u>37.5</u>	☒ Yes ☐ No	<u>OBL</u>	
2.			☐ Yes ☐ No		
3.					
4.					Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5.					
6.					
7.					
8.					
_____ = Total Cover 50% of total cover: <u>18.75</u> 20% of total cover: <u>7.5</u>					Hydrophytic Vegetation Present? ☒ Yes ☐ No
Herb Stratum (Plot size: <u>79</u>)					
1.	<u>Juncus effusus</u>	<u>3.7</u>	☐ Yes ☐ No	<u>FACW</u>	
2.	<u>Symphotrichum puniceum</u>	<u>37.5</u>	☒ Yes ☐ No	<u>OBL</u>	
3.	<u>Epilobium leptophyllum</u>	<u>7.5</u>	☐ Yes ☐ No	<u>OBL</u>	
4.	<u>Ludwigia palustris</u>	<u>62.5</u>	☒ Yes ☐ No	<u>OBL</u>	
5.	<u>sphagnum moss</u>	<u>62.5</u>	☒ Yes ☐ No		
6.			☐ Yes ☐ No		
7.					
8.					
9.					
10.					
11.					
12.					
_____ = Total Cover 50% of total cover: <u>86.85</u> 20% of total cover: <u>34.74</u>					
Woody Vine Stratum (Plot size: <u>2827</u>)					
1.			☐ Yes ☐ No		
2.					
3.					
4.					
5.					
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____					
Remarks: (If observed, list morphological adaptations below). Mainly a PEM with a small inclusion of Silky Willow Approx 1/4 of the total wetland area.					

Sampling Point: W20-WTP

Eastern Mountains and Piedmont

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: JOFL City/County: Cambria Sampling Date: 9/21/2016
 Applicant/Owner: NPS State: PA Sampling Point: W21.21A-
 Investigator(s): P. Sharpe, E. Kelley Section, Township, Range: Adams
 Landform (hillslope, terrace, etc.): Oxbow Channel Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR or MLRA): LRR N Lat: 40.343989 Long: -78.776082 Datum: NAD83
 Soil Map Unit Name: Ph - Philo silt loam NWI Classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is the Sampled Area within a Wetland? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No	
Remarks: Cambria county was experiencing abnormally dry conditions during and prior to inventory US Drought Monitor data.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☒ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? ☐ Yes ☒ No Depth (inches): _____ Water Table Present? ☐ Yes ☒ No Depth (inches): _____ Saturation Present? ☐ Yes ☒ No Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: W21,21A-

US Army Corps of Engineers

Eastern Mountains and Piedmont

SOIL

Sampling Point: W21,21A-

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)																																
Depth (inches)	Matrix		Redox		Type ₁	Loc ₂	Texture	Remarks																								
	Color (moist)	%	Color (moist)	%																												
0-11	10YR 2/1	90	5YR 4/6	10	C	M	sandy clay loam	E. Kelley																								
11-15	10YR 3/1	85	2.5YR 3/6	15	C	M	sandy clay loam	E. Kelley																								
15-19	10YR 4/6	60	2.5Y 6/6	40	C	M	sandy	E. Kelley																								
1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. 2Location: PL=Pore Lining, M=Matrix.																																
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)																																
<table border="0"> <tr> <td>☐ Histosol (A1)</td> <td>☐ Dark Surface (S7)</td> </tr> <tr> <td>☐ Histic Epipedon (A2)</td> <td>☐ Polyvalue Below Surface (S8) (MLRA 147, 148)</td> </tr> <tr> <td>☐ Black Histic (A3)</td> <td>☐ Thin Dark Surface (S9) (MLRA 147, 148)</td> </tr> <tr> <td>☐ Hydrogen Sulfide (A4)</td> <td>☐ Loamy Gleyed Matrix (F2)</td> </tr> <tr> <td>☐ Stratified Layers (A5)</td> <td>☐ Depleted Matrix (F3)</td> </tr> <tr> <td>☐ 2 cm Muck (A10) (LRR N)</td> <td>☐ Redox Dark Surface (F6)</td> </tr> <tr> <td>☐ Depleted Below Dark Surface (A11)</td> <td>☐ Depleted Dark Surface (F7)</td> </tr> <tr> <td>☐ Thick Dark Surface (A12)</td> <td>☒ Redox Depressions (F8)</td> </tr> <tr> <td>☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</td> <td>☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)</td> </tr> <tr> <td>☐ Sandy Gleyed Matrix (S4)</td> <td>☐ Umbric Surface (F13) (MLRA 136, 122)</td> </tr> <tr> <td>☐ Sandy Redox (S5)</td> <td>☐ Piedmont Floodplain Soils (F19) (MLRA 148)</td> </tr> <tr> <td>☐ Stripped Matrix (S6)</td> <td></td> </tr> </table>									☐ Histosol (A1)	☐ Dark Surface (S7)	☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)	☐ Black Histic (A3)	☐ Thin Dark Surface (S9) (MLRA 147, 148)	☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Stratified Layers (A5)	☐ Depleted Matrix (F3)	☐ 2 cm Muck (A10) (LRR N)	☐ Redox Dark Surface (F6)	☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	☐ Thick Dark Surface (A12)	☒ Redox Depressions (F8)	☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)	☐ Sandy Gleyed Matrix (S4)	☐ Umbric Surface (F13) (MLRA 136, 122)	☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)	☐ Stripped Matrix (S6)	
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☐ Coast Prairie Redox (A16) (MLRA 147, 148)																																
☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)																																
☐ Red Parent Material (TF2)																																
☐ Very Shallow Dark Surface (TF12)																																
☐ Other (Explain in Remarks)																																
3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.																																
Restrictive Layer (if observed):						Hydric Soil Present? ☒ Yes ☐ No																										
Type: _____ Depth (inches): _____																																
Remarks:																																

Appendix C. Climate conditions prior to survey

US Drought Monitor (DM) – Drought Intensity Index data for JOFL – information is specific for Cambria County, PA and may not reflect park specific weather and climate conditions. The row in bold represents the week our wetlands inventory was performed. **D0-D4:** Droughts D0-D4 denote drought intensity with D1 being the least intense and D4 being the most intense. D0 which is denoted primarily for JOFL below indicates abnormally dry conditions. For more information readers may consult the following online resource: <http://droughtatlas.unl.edu/Data.aspx>. Values within the table denote the estimated percent of Cambria County lands falling within a specific drought category – “None” signifies no drought.

Date	None	D0	D1	D2	D3	D4
6/7/2016	0	100	0	0	0	0
6/14/2016	0	100	0	0	0	0
6/21/2016	99.5	0.5	0	0	0	0
6/28/2016	100	0	0	0	0	0
7/5/2016	68.02	31.98	0	0	0	0
7/12/2016	68.02	31.98	0	0	0	0
7/19/2016	68.02	31.98	0	0	0	0
7/26/2016	0	100	0	0	0	0
8/2/2016	0.25	99.75	0	0	0	0
8/9/2016	0.25	99.75	9.72	0	0	0
8/16/2016	0.25	99.75	9.71	0	0	0
8/23/2016	5.13	94.87	9.71	0	0	0
8/30/2016	4.45	95.55	9.71	0	0	0
9/6/2016	4.45	95.55	9.71	0	0	0
9/13/2016	4.35	95.65	8.74	0	0	0
9/20/2016	4.35	95.65	8.74	0	0	0
9/27/2016	4.35	95.65	8.74	0	0	0