

## ENCLOSURE C – DESCRIPTION OF AQUATIC HABITAT

### A. AQUATIC HABITAT

Based on field surveys, the proposed Pennsylvania Pipeline Project (Project) crosses a total of 16 wetlands and 30 streams in Perry County. Resource Tables 2 and 3 included in this Attachment provide details regarding the specific wetland/stream type, crossing distances, temporary and permanent impacts, and crossing methods for all the water resources impacted in Perry County. In addition, Enclosure A of this Attachment (Aquatic resources Report and Supplementals) includes completed field data forms and specifics for each resource impacted; Enclosure E, Part 4 of this Attachment (Impact Avoidance, Minimization, and Mitigation Procedures) describes the proposed construction crossing methods and mitigation measures; and Attachment 12 (Erosion and Sediment Control Plan) provides details regarding the various soil erosion control measures that will be implemented at each resource crossing. The following provides a description of the stream and wetland resources crossed by the Project in Perry County.

#### Streams

The Project crosses a total of 14 perennial streams, 11 intermittent streams, and 5 ephemeral streams in Perry County. Under Pennsylvania Code, Title 25, §93.3, surface waters are categorized into five protected use categories: aquatic life, water supply, recreation and fish consumption, special protection, and other. Surface waters classified under the aquatic life category are further divided into the following four subcategories:

- CWF – *Cold Water Fishes*—Maintenance and/or propagation of fish species including the family Salmonidae and additional flora and fauna which are indigenous to cold water habitat.
- WWF – *Warm Water Fishes*—Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- MF – *Migratory Fishes*—Passage, maintenance, and propagation of anadromous and catadromous fishes and other fishes that move to or from flowing waters to complete their life cycle in other waters.
- TSF – *Trout Stocked Fishery*—Maintenance of stocked trout from February 15 to July 31, and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat. The PAFBC refers to TSF streams as Approved Trout Waters.

Based on a review of eMapPA maintained by Pennsylvania Department of Environmental Protection (PADEP) and a review of Drainage List A of Pennsylvania Code, Title 25, Chapter 93, §93.9h, the designated/protected uses and fisheries classifications for the streams crossed by the Project in Perry County include:

- 2 streams have a designated use for HQ-CWF,
- 26 streams have a designated use for HQ-CWF, MF

- 2 streams have a designated use for EV, MF,
- 11 streams are designated as Trout Natural Reproduction (TNR),
- 6 streams are designated as both Class A and Trout Natural Reproduction,
- 4 streams are designated as both Approved Trout Waters and Trout Natural Reproduction
- 2 streams are designated Trout Natural Reproduction and Wilderness Trout Streams, and
- 5 streams have multiple designations of Approved Trout Waters, Stocked Trout Streams, and Trout Natural Reproduction.

Of the total 30 streams crossed by the Project ROW in Perry County, a total of 28 are classified as High Quality (HQ) and 2 of the streams crossed are classified as Exceptional Value (EV). HQ waters are those surface waters with water quality that exceed levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water by satisfying Pennsylvania Code 025 §93.4b(a). EV waters include high quality surface waters that satisfy Pennsylvania Code 025 §93.4b(b). The water quality of all HQ and EV streams must be maintained and protected in accordance with antidegradation requirements (Pennsylvania Code 025 §93.4a).

Of the 30 streams crossed in Perry County, 14 have a bank-to-bank crossing width equal to or less than 10 feet. A total of 9 streams have a crossing width of 11-20 feet and 3 streams have a crossing width of 21-30 feet. Laurel Run has a crossing width of 35 feet, Schultz Creek has a crossing width of 45 feet, and Schaeffer Run has a crossing width of 57 feet.

Riparian areas, located within 150 feet of the HQ and EV streams and 100 feet landward of the other streams, that are crossed by the Project in Perry County consist of a variety of different cover types. In areas where the Project parallels existing ROW, these areas will primarily consist of herbaceous/emergent vegetation. Areas of new ROW, including the expansion of the existing ROW, may consist of agricultural areas, open fields/pasture, and/or wetland and upland scrub-shrub and forested habitat.

All the streams crossed in Perry County will be restored to their original conditions (i.e., elevation, flow, stream substrate, hydrologic conditions, etc.) except for possibly a few limited areas of forested cover. These areas will retain their overall function, providing fish and wildlife habitat, but will have a long-term change in cover type.

### **Wetlands**

The proposed Project will cross a total of 16 wetlands in Perry County (Table 2, Attachment 11). The wetland resources crossed represent a variety of different wetland types including palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and combinations of these cover types. Of the 16 wetlands crossed by the Project in Perry County, 7 have crossings that are less than 100 wide, 6 are greater than 100 feet wide, and 3 are greater than 200 feet wide.

As presented in detail in Attachment 11, Enclosure E, Part 2 (Section 2.8.1), each wetland crossed by the proposed Project in Perry County was evaluated in accordance with 25 Pa. Code § 105.17(1) to determine whether or not the wetland area satisfied the requirements for classification as an Exceptional Value (EV) wetland resource. Based on this evaluation, 14 wetlands crossed in Perry County are considered EV wetlands.

SPLP also evaluated the functions and values of the wetland areas using the USACE Highway Methodology (USACE 1999) assessment method as it is generally acceptable to the PADEP and the United States Army Corps of Engineers (USACE). In accordance with the method, eight functions (groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization, and wildlife habitat), and five values (recreation, educational/scientific value, uniqueness/heritage, visual quality/aesthetics, and threatened/endangered species habitat) were assessed for each impacted wetland. In addition to the standard functions and values assessment, a Wetland Function-Value Evaluation Form was used to assess EV wetlands. Enclosure D (Attachment 11) and SPLP's Resource Identification and Project Impacts (Attachment 11, Enclosure E, Part 2) describe the impacts, including functions and values, to EV wetlands crossed by the Project. Enclosure C of this Attachment provides a function and values assessment of the wetlands crossed by the Project in Perry County.

All the wetlands crossed in Perry County will be restored to their original conditions (i.e., elevation, hydrologic conditions, etc.).

## **A.1 Food Chain Production**

All of 16 wetlands and 30 streams crossed by the proposed Project in Perry County are considered to have some potential for food chain production. Growth of herbaceous plants within the emergent wetlands constitutes the food chain base that supports primary consumers such as invertebrates and small mammal herbivores. Secondary and tertiary consumers, including both omnivores and carnivores, are supported by the diversity and abundance of prey items in the wetland and stream ecosystems.

In addition, most of the streams within the County support photosynthetic algae, overhanging woody vegetation, and/or small aquatic vascular plants that support invertebrate herbivores (i.e., aquatic insects). Such invertebrates are consumed by small reptiles and fish that inhabit some of the streams along the proposed Project.

## **A.2 General Habitat**

### **a. Nesting**

Nesting habitat within the wetlands and streams is limited in areas where the proposed Project parallels existing right-of-way (ROW) in Perry County. Vegetation is routinely mowed or cut within the existing ROW and at station facilities, limiting the nesting habitat to low growing, herbaceous plants and some limited shrubs. These areas may provide

suitable nesting habitat for various bird species that nest on, or near, the ground. Within wetlands and streams, the forest edge provides suitable woody cover for bird species that commonly nest in shrubby edge habitats. In areas where the ROW does not parallel an existing ROW in Perry County, the nesting habitat may include both upland and wetland interior forests, open fields/meadows, and/or scrub-shrub areas. Combined, all the crossed by the Project provide nesting habitat for a variety of bird species including raptors, grassland species, waterfowl, woodpeckers, and numerous songbirds.

**b. Spawning**

In general, the 16 wetlands crossed by the Project in Perry County do not include bodies of water large enough for fish spawning but may provide seasonal breeding habitats for amphibians, such as frogs and salamanders. Wetlands fed by a permanent source of surface water may also provide seasonal spawning habitat for small, non-game fish species.

Most of the 14 perennial streams crossed by the proposed Project in Perry County provide potential habitat for seasonal spawning of game and non-game fish species.

**c. Rearing**

In areas where the proposed Project parallels existing ROW in Perry County, wetlands are not considered to have a high potential for wildlife rearing. This assessment is based on the routine maintenance activities conducted along the existing ROW within wetland and stream areas. The maintenance of the existing ROW limits the value of these wetlands for wildlife rearing.

In areas where the Project does not parallel an existing ROW in Perry County, the rearing habitat may include both upland and wetland interior forests, open fields/meadows, and/or scrub-shrub areas. Although these areas provide undisturbed areas of rearing habitat, the Project is not located in remote areas and the overall character of the surrounding area is primarily considered rural in terms of wildlife habitat. Consequently, these areas offer similar opportunities for rearing as the areas that parallel existing ROW.

Although some small mammals and birds may utilize the Project area in Perry County for rearing purposes, the habitat provided in the adjacent undisturbed areas provides more shelter and food sources than the existing ROW. Consequently, the majority of rearing activities will not occur in the Project area but rather the adjacent areas.

**d. Resting**

All of the 16 wetlands and 30 streams crossed in Perry County provide habitat that has the potential to be used for resting by a variety of birds and mammals. However, similar to the areas used for rearing, wildlife are likely to utilize more remote and secluded areas that offer more protection/cover for resting. Therefore, although the Project area does provide some resting habitat/areas for songbirds and possibly small mammals, these species are more likely to utilize the adjacent areas that provide more cover and/or perches.

**e. Migration**

The 16 wetlands crossed by the proposed Project in Perry County are not believed to be substantially utilized during the migration of wildlife or birds. However, some of the wetland complexes that support large areas of open water, including ponds or reservoirs, may be utilized by migrating waterfowl. Other areas along the Project that may be used during migration include the forested edge habitat along the existing ROW that may be used by migrating songbirds.

Seasonal migration of trout during spawning is likely to occur within the 11 streams designated as Trout Natural Reproduction (TNR), 6 streams designated as both Class A and Trout Natural Reproduction, 4 streams designated as both Approved Trout Waters and Trout Natural Reproduction, 2 streams designated Trout Natural Reproduction and Wilderness Trout Streams, and, 5 streams with multiple designations of Approved Trout Waters, Stocked Trout Streams, and Trout Natural Reproduction.

**f. Feeding**

As indicated under Section A.1 (Food Chain Production), the 16 wetlands and 30 streams along the proposed route in Perry County provide a food source for invertebrates, birds, reptiles, amphibians, and mammals. In general, this function is limited relative to the areas located outside the proposed Project area which provide higher rates of primary productivity. However, wetland areas within the proposed Project area support small numbers of aquatic insects, mollusks, or amphibians that meet specific prey requirements of birds and mammals with an affinity for wetland and stream habitats such as raccoon (*Procyon lotor*). In addition, streams traversed by the Project are likely utilized by a variety of wildlife species as a source of drinking water.

**g. Escape Cover**

The Project primarily parallels existing pipeline ROW or is located in primarily in rural areas in Perry County; therefore, there is limited escape cover provided in the Project area due to lack of habitat diversity and structure. Specifically, vegetation on the existing ROW is limited to shrubs and herbaceous plants as compared to the diversity of habitat structure provided in the adjacent and surrounding vegetated areas.

Streams and other waterbodies within the proposed Project area in Perry County provide escape cover for aquatic organisms when there is a presence of submerged stream bank vegetation/roots, aquatic plants, undercut banks, rocky substrates, and woody debris present.

**h. Other**

No other general habitat considerations were identified during either the wetland delineations or stream characterization surveys in Perry County.

### A.3 Habitat for Threatened and Endangered Plant and Animal Species

As presented in the Attachment 6 (PNDI and Agency Coordination) and Attachment 9 (Project Description) of the JPA, SPLP has coordinated extensively with the Pennsylvania Department of Conservation and Natural Resources (PADCNR), Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PAFBC), and U.S. Fish and Wildlife Service (USFWS) throughout the entire Project planning process. Based on this coordination a number of species of concern have been identified in the Project area: the table below identifies the 1 plant and 3 animal species that have been identified in Perry County.

#### Species of Concern Identified in the Project Area in Perry County

| Species of Concern       | Clearance Letter | General Habitat Requirements  | Conservation Plan  |
|--------------------------|------------------|---|--|
| <b>Plants</b>            |                  |   |  |
| <i>Polygala polygama</i> | 11/15/15         | Found in a variety of habitats, including forest, woodland (conifer, hardwood, and mixed), grassland, sad/dunes, dry woods, and openings.   | Conservation Plan for Identified Species [Plants] of Special Concern |
| <b>Animals</b>           |                  |   |  |
| Timber Rattlesnake       | 9/22/15          | Deciduous forests and rocky outcrops. Hibernacula usually found on south-facing rocky slopes with adequate crevices.  | Timber Rattlesnake Conservation Plan                                 |
| Allegheny Woodrat        | 06/08/16         | Extensive expanses of abundant, closely-spaced surface rock surrounded by unfragmented forest. Outcrops, cliffs, ledges, boulder fields, and caves are essential. Mast-producing trees are important. In Pennsylvania, appropriate sandstone and limestone are typically distributed in patches interspersed with forest. | Allegheny Woodrat Conservation Plan                                  |
| Eastern Small-footed bat | 06/08/16         | Caves and mines are key winter habitat and smaller caves may be important. Summer roosts include caves and mines, hollow trees and under bark, cracks and crevices in rock walls, and ridge-to talus fields.  | Eastern Small-footed Bat Conservation Plan                           |

### A.4 Environmental Study Areas

#### a. Sanctuaries

The Project crosses Kittatinny Ridge and Tuscarora Ridge-The Pulpit Important Bird Areas (IBA) in Perry County. These areas are part of a network of sites throughout the Commonwealth that are considered essential for sustaining wild bird populations by the Pennsylvania Audubon Society. Once a site is officially identified as an IBA, volunteer monitoring efforts are often initiated. This monitoring focuses primarily on the

breeding/nesting season - tracking the numbers and variety of birds breeding in that particular habitat.

**b. Refuges**

No National Wildlife Refuges or management areas, designated critical habitat, or significant habitats were identified within the proposed Project area in Perry County.

**c. Other**

Based on background data searches and field observations, two Core Habitats and two Supporting Landscapes will be crossed by the proposed Project in Perry. Core habitats are areas that are most closely associated with the habitat for species of concern. These areas can support little disturbance without adversely affecting the habitat of the species of concern. Supporting Landscapes are the areas surrounding or adjacent to core habitat that are not considered the primary habitat of the species of concern or natural community. Supporting Landscapes represent the areas necessary to maintain vital ecological processes or secondary habitat that could be impacted by certain types of disturbance.

**Core Habitats Crossed by the Pennsylvania Pipeline Project in Perry County**

| Name of Core Habitat        | Distance Traversed (miles) | Aquatic Resources Present <sup>a</sup> |
|-----------------------------|----------------------------|--|
| Bowers Mountain Site – West | 0.3                        | Yes                                    |
| Conococheague Mountain Site | 0.4                        | No                                     |

Source: PADCNR 2016

<sup>a</sup> Attachment 11, Enclosure E, Part 4 provides a more detailed discussion of impacts to streams and wetlands, impact avoidance and minimization measures, and a description of the crossing construction measures that will be used.

Core Habitat Bowers Mountain – West is a southeast-facing forested mountain slope located within Tuscarora State Forest that supports the Allegheny woodrat (*Neotoma magister*). The canopy vegetation includes hemlock, black birch, and mixed oaks. Stream S-J70 is the only project waterbody located within the Bowers Mountain Site Core Habitat.

The proposed Project crosses Core Habitat Conococheague Mountain Site in Perry County. This site is also found within Tuscarora State Forest and contains habitat for the Allegheny woodrat (*Neotoma magister*). No project waterbodies or wetlands are located within this Core Habitat.

**A.5 Stream Relocation, Enclosure, or Dredging**

There are no stream relocations, enclosures, or waterway dredging/deepening activities proposed in conjunction with the proposed Project in Perry County. Therefore, a description of the instream macroinvertebrate communities is not required as part of this Environmental Assessment Form (EAF).

## **B WATER QUANTITY AND STREAMFLOW**

### **B.1 Natural Drainage Patterns**

The waterbodies in Perry County within the proposed Project ROW are located in the Susquehanna River Basin. The Project crosses the following HUC 12 watersheds in Perry County: Bull Run, Doubling Gap Creek, Laurel Run, Wertz Run-Conodoguinet Creek, Trough Spring Branch-Tuscarora Creek, Big Spring Creek-Conodoguinet Creek, Horse Valley Run, and Shultz Creek-Sherman Creek.

The proposed Project ROW crosses two physiographic provinces of Pennsylvania in Perry County. The streams found in the Appalachian Mountain and Susquehanna Lowland sections follow trellis and angulate drainage patterns. Trellis drainage patterns develop in folded topography, while angulate drainage patterns form where bedrock joints and faults intersect at more acute angle than rectangular drainage patterns.

### **B.2 Flushing Characteristics**

The ability of a stream to maintain its flushing characteristics of both natural and introduced material is primarily defined by its width, flow velocity, and substrate. Most of the streams in the Perry County area are low to medium-gradient streams that are best characterized as having moderate rates of flushing and residence times.

The majority of 16 wetlands located in Perry County within the proposed Project area do not contain surface waters that support continuous flow; therefore, the majority of the wetlands crossed by the Project are considered to have a very low flushing ability based on their topography (low-lying depressions), limited sustained flows, and thick vegetation.

### **B.3 Current Patterns**

Except in the wetlands that are associated with perennial streams, there are no sustained currents present within the wetlands crossed by the proposed Project in Perry County.

In general, the drainage patterns associated with the 30 streams crossed in Perry County are trellis and angulate and do not generally contain complex current patterns. Natural meanders with minimal obstructions are present.

### **B.4 Groundwater Discharge for Baseflow**

Some of the wetlands associated with the proposed Project in Perry County are associated with seeps or springs and are therefore located in areas of groundwater discharge, which may contribute to the baseflow of the streams. However, details on the amount of groundwater discharge associated with the Project area wetlands/seeps has not been determined.



Based on the local topography and geology, there is a potential for some Project streams in Perry County to be augmented by groundwater discharge. However, no studies have been conducted to quantify the contribution of groundwater discharge to the baseflow of the streams located within the Project area.

#### **B.5 Natural Recharge Area for Ground and Surface Waters**

Most of 16 wetlands crossed in Perry County by the proposed Project are either located at points of seasonal groundwater discharge such as seeps or springs, or are associated with streams. Therefore, some of these wetlands are considered natural recharge areas for surface water. Similarly, some of the wetlands and streams in Perry County may act as groundwater recharge areas based on their geographic location/setting and underlying material.

#### **B.6 Storm and Floodwater Storage and Control**

One of the primary functions of wetlands and floodplains is to store stormwater and attenuate floodwaters. In addition, baseflow conditions of the majority of the streams traversed in Perry County is much lower than their bankfull condition; consequently, they all have additional capacity for storm and floodwater storage and control. Given the number of wetlands and streams within the Project area in Perry County, storm and floodwater storage and control is considered to be moderate to high.

#### **B.7 Public and Private Water Supplies/Wells**

SPLP used PADEP's eMapPa system to identify Public Water Supply (PWS) areas that utilized Groundwater Wells and Surface Water Intakes as their source. The PWS data was used to create a file of all known public water supply areas within 1 mile of the Project workspace and notification letters and maps were sent to these identified PWS authorities. In the letters, Sunoco requested the locations of the authority's PWS groundwater well and/or surface intakes. Based on the information received, none of these PWS areas have been identified in Perry County.

SPLP used DCNR's PAGWIS well data to identify a total of 22 recorded private groundwater wells located within 150 feet of the proposed Project's HDD locations. However, the DCNR recommends that PAGWIS data not be used for mapping purposes; therefore, SPLP will verify with the appropriate landowners, the exact location(s) of their water well(s) prior to construction. SPLP's Water Supply Assessment, Preparedness, Prevention, and Contingency Plan (Attachment 12, Tab12B) provides a summary of well identification efforts completed to date as well as SPLP's mitigation plan.

### **C. WATER QUALITY**

The water quality of the Project waterbodies in Perry County is considered good as is evidenced by the 29 streams crossed with HQ-CWF, HQ-CWF, MF, and EV designations. Table 3 of this Attachment of the JPA, provides a summary of all the existing use and designated use classifications associated with the Project streams.

## **C.1 Preventing Pollution**

Most of the land surrounding the proposed Project area in Perry County is either forested or agricultural. Consequently, potential sources of pollution are minor and mainly limited to possible agricultural runoff. A majority of the waterbodies traversed by the proposed Project have good water quality as is evidenced by the presence of anadromous fish species (based on state classifications), and the trout and water quality state designations (for designated and existing uses). There is not a great concern of pollution in the general proposed Project area.

The 16 wetlands within the proposed Project area in Perry County have some limited capacity to mitigate pollution. The water detention capacities and growth of vegetation allow the wetlands to filter some pollutants. However, no studies have been conducted to quantify either the pollution prevention capacities of the wetlands, or the need for such functions in the proposed Project area.

## **C.2 Sedimentation Control and Patterns**

The proposed Project area is primarily located within or adjacent to either forested or agricultural areas in Perry County. Many of the agricultural fields have vegetation buffers bordering the streams. As a result, the existing sources of sediment within the proposed Project area are limited to potential runoff from plowed agricultural fields, or runoff from unpaved roads. Generally, clear water was evident in most of the streams surveyed within the proposed Project area.

During periods of high precipitation and runoff, the wetlands within the proposed Project area can be expected to limit the transport of sediments to downstream or downslope areas. However, no studies have been conducted to quantify the volume of sediments retained by, or deposited in, these wetlands.

## **C.3 Salinity Distribution**

Only freshwater wetlands and streams were identified in the Project area in Perry County. There is no evidence of any naturally occurring or man-induced salinity associated with the wetlands and streams identified within the proposed Project area.

## **C.4 Natural Water Filtration**

As previously stated, the wetlands and streams crossed by the proposed Project in Perry County are located in relatively undeveloped, forested or agricultural areas and there does not appear to be a great need for the natural filtration of water. Based on field observations, the surface water is considered to be of good quality.

## **D. RECREATION**

### **D.1 Game Species**

Hunting is a common and popular recreational activity in the vicinity of the proposed Project area in Perry County, which contains an abundance of both small and large game species. Although the level of hunting activities and specific game species hunted in the Project area are unknown, the Project traverses several areas where game hunting is assumed to occur.

The proposed Project does not cross any Pennsylvania State Game Land (SGL) in Perry County. The proposed Project crosses one privately-owned hunting club in Perry County: Camp Buck Hunting Club. Additionally, the proposed Project crosses the Tuscarora State Forest located in Perry County.

### **D.2 Non-Game Species**

The level of recreational activities involving non-game species, such as bird watching, wildlife photography, and amateur naturalist study, occurring in wetlands/streams located within the Project area in Perry County is not known. Due to the location of the majority of the proposed Project area near forested lands, the wetlands and streams traversed by the proposed Project offer a high potential for recreational observation.

### **D.3 Fishing**

Many of the streams associated with the proposed Project offer high quality recreational and sport fishing opportunities. In Perry County, 11 streams are designated as Trout Natural Reproduction (TNR), 6 streams designated as both Class A and Trout Natural Reproduction, 4 streams designated as both Approved Trout Waters and Trout Natural Reproduction, 2 streams designated Trout Natural Reproduction and Wilderness Trout Streams, and, 5 streams with multiple designations of Approved Trout Waters, Stocked Trout Streams, and Trout Natural Reproduction.

### **D.4 Hiking**

As identified in the table below, the Project crosses three hiking trails in Perry County. The existing pipeline ROW already forms a long, linear, relatively unobstructed corridor, which offers the potential for use as a hiking trail; however, the amount of hiking that occurs along the entire corridor is not expected to be significant, since most of the existing ROW passes through private properties.

#### **Hiking and Water Trails Crossed by the Pennsylvania Pipeline Project in Perry County**

| <b>Name of Trail</b>  | <b>Aquatic Resources Present</b> |
|-----------------------|----------------------------------|
| Iron Horse Trail      | No                               |
| Fowlers Hollow Trails | No                               |
| Tuscarora Trail       | No                               |

## **D.5 Observation (Plant/Wildlife)**

There is limited to moderate potential for recreational plant or wildlife observation in Perry County as most the properties are privately owned and there is limited access to the Project area.

## **D.6 Other Recreation**

The Project crosses one state forest in Perry County: Tuscarora State Forest. In addition to the recreational hunting and fishing opportunities described above for the proposed Project, this Pennsylvania state forest provides areas for additional recreational activities, including biking, backpacking, camping, picnicking, horseback riding, canoeing, kayaking, boating, rafting, scenic drives, cross-country skiing, and motorized vehicle use (i.e., all-terrain vehicles, snowmobiles).

## **E. UPSTREAM AND DOWNSTREAM PROPERTY**

The proposed Project is located within relatively undeveloped agricultural or forested areas. In many instances, individuals who own wetlands and riparian areas also own most of the adjacent property. The proposed Project will not cause long-term degradation of water quality, alter flow volumes, or change the direction of flow. In addition, operation of the proposed Project is not expected to interfere with the normal riparian rights of upstream or downstream landowners.

## **F. OTHER ENVIRONMENTAL FACTORS**

There were no other environmental factors of concern identified during the field surveys conducted for the proposed Project in Perry County.