

## APPENDIX L: Endangered Species Technical Report

### L.1 Existing Conditions

Issues regarding critical habitat exist both in station areas and along the rail corridor. The Commonwealth of Pennsylvania oversees issues relating to Environment Protection through four separate departments; three of these departments are involved in maintaining the Commonwealth's official lists of threatened and endangered species. The Department of Conservation and Natural Resources (PADCNR) is the department that is responsible for conservation and recreation, including maintaining the PA Natural Diversity Inventory, which is the official record of threatened and endangered plant and invertebrate species in PA. The PA Fish and Boat Commission is responsible for maintaining the official record of threatened and endangered aquatic and herpetile animal species in PA. The PA Game Commission is responsible for hunting rules and regulations as well as being specifically responsible for the official record of threatened and endangered terrestrial animal (birds and mammal) species. In New Jersey, all environmental matters, including maintaining the threatened and endangered species lists, are the responsibility of the New Jersey Department of Environmental Protection (NJDEP). All of these agencies have been consulted regarding the Lackawanna project.

Letters of request for information regarding threatened and endangered species in the vicinity of the rail corridor were submitted to the U.S. Department of Interior Fish and Wildlife Service, the New Jersey Department of Environmental Protection Natural Heritage Program, Pennsylvania Department of Environmental Protection - Natural Diversity Index, Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission.

In accordance with Section Seven of the Federal Endangered Species Act of 1973, (87 Stat. 884 as amended; 16 USC 1531 et seq.) federal agencies may not undertake any actions that would further endanger any species identified as threatened or endangered on the Federal List. The Federal Threatened and Endangered Species Act is administered by the United States Fish and Wildlife Service (USFWS).

In accordance with 25 Pennsylvania Code 9.314 the State has undertaken the responsibility of identifying, locating and protecting the threatened and endangered species of the State. The lists of rare, threatened, endangered, vulnerable and species of special concern are defined in 17 Pennsylvania Code 45.11 et al. Procedures set forth in 25 Pennsylvania Code 245.231 and 232 must be followed in the preparation of an Environmental Assessment. Pennsylvania Code 89.74 identifies procedures that must be undertaken to avoid impacts to protected species. The Pennsylvania Acts and Statutes pertaining to the protection of Federal and State threatened and endangered species are administered by the Pennsylvania Department of Conservation and Natural Resources through the Pennsylvania Natural Diversity Index which is responsible for all flora and invertebrate fauna, the Pennsylvania Fish and Boat Commission which is responsible for aquatic and herpetile fauna and the Pennsylvania Game Commission which monitors terrestrial fauna, birds and mammals.

In accordance the New Jersey State Endangered Plant Species Act of 1989 (N.J.S.A. 13:1B-15.151), the Endangered and Nongame Species Act of 1973 (N.S.S.A. 23:2A-13), the list of endangered species (N.J.A.C. 7:25-4.13), and the list defining the status of Indigenous, Nongame wildlife species of New Jersey (N.J.A.C. 7:25-4.17(a)), Federal and State agencies can not undertake any action that would further imperil any species identified on the Federal and State threatened and endangered species list. Additionally, certain aspects of private projects may be limited or restricted in a way so that during and/or after construction the project does not adversely affect threatened and endangered species. The New Jersey Acts pertaining to threatened and endangered species are administered by the New Jersey

Department of Environmental Protection Division of Parks and Forestry, Office of Natural Lands Management, National Heritage Program (NHP) and the Endangered and Nongame Species Program (ENSP).

### **L.1.1 US Department of the Interior - Fish and Wildlife Service**

The US Fish and Wildlife Service was contacted on two fronts at both the New Jersey and Pennsylvania field offices to identify federally listed threatened or endangered species known to occur within the study corridor. While no documentation of any of the following species has been recorded in the study corridor habitat for these species may be present on abandoned portions or adjacent to the right-of-way.

The New Jersey field office has raised concern over protecting critical habitat for Bog turtle (*Clemmys muhlenbergii*), federally threatened, NJ endangered and the Indiana bat (*Myotis sodalis*) federally endangered, NJ endangered. The Pennsylvania field office has raised the same concerns over critical habitat for both Bog turtle and Indiana bat however included Bald Eagle (*Haliaeetus leucocephalus*) federally endangered, PA endangered and the Northeastern Bulrush (*Scirpus ancistrochaetus*) federally endangered. Descriptions for each of these species can be found below.

#### ***Bog Turtle***

The Bog Turtle population is divided into two geographically isolated populations, a southern and a northern segment divided by nearly 250 miles. The northern populations occur in Connecticut, Delaware, Maryland, Massachusetts, New Jersey, New York and Pennsylvania. Within the project corridor, the Bog Turtle is known to occur in Monroe and Northampton Counties in Pennsylvania and in Warren, Sussex, and Morris Counties in New Jersey.

The northern population has declined nearly 50 percent within the last 20 years. The majority of this decline has been a result of habitat destruction. Hydrological alteration of the Bog Turtle's habitat has been a byproduct of draining, ditching, dredging, filling and flooding of wetlands for residential, urban and commercial development; road construction; agricultural use; pond and reservoir construction. Illegal collection for national and international pet trade has also reduced the population.

The carapace (upper shell) measures 3 to 4.5 inches in length and ranges in color from light brown to ebony. It has a large, conspicuous bright blotch found on each side of the head varying in color from yellow to red. The plastron (lower shell) is brownish-black with contrasting yellow and cream areas. The species is sexually dimorphic.

Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows and pastures characterized by soft, muddy bottoms. There is cool, clear, slow flowing water that often forms a network of rivulets and generally high humidity with an open canopy.

The wetland habitat is usually a mosaic of microhabitats ranging from dry pockets to areas that are saturated by water to areas that are periodically flooded. They use shallower water areas in the warm weather and retreat to deeper waters in the winter. Open-canopy wetlands are slowly being invaded by woody vegetation as the natural succession into a wooded swampland with a closed-canopy occurs. Some wetlands are grazed by livestock which can compact the mucky bottom that the turtles prefer, but it helps to keep out successional species that ultimately close the canopy and fill the muck substrate. Heavy grazing will destroy the habitat.

### ***Indiana Bat***

USFWS is concerned with the destruction of forest habitat resulting from the project that may further endanger the Indiana bat, a federally endangered species listed under the ESA. The USFWS reports that the Indiana bat is known to roost in only three hibernaculums located in Morris County, New Jersey. While two of these hibernaculums are located greater than five miles from where the study corridor begins in Port Morris, NJ, the summer range of the bat extends far beyond these hibernaculums and throughout the northern forested portions of the state.

The Indiana bat is a medium sized bat that closely resembles the Brown bat however most notably differs from the Brown bat by its grayish fur. Indiana bat Hibernaculums are found in limestone caves as well as abandoned mine shafts such as those in Morris County. In the summer months these bats roost in various forest habitats underneath loose tree bark or in cavities of dead trees/snags during the day. At night the bats forage for insects in and around the tree canopy of the forest. Threats to the Indian bats' survival include disturbance or killing of hibernating and maternity colonies through forest fragmentation, degradation and destruction of forested summer habitat, by vandals entering caves and abandoned mine shafts, improper gating of caves and mine shafts, and the use of pesticides and other environmental contaminants.

The USFWS has requested that the study corridor be examined for the presence of suitable forest habitat. A lack of existing data prevents them from determining whether the project will pose an adverse impact to the bat.

### ***Bald Eagle***

On July 6, 1999 the USFWS proposed to have the Bald eagle removed from the federal *List of Endangered and Threatened Wildlife*, (*Federal Register*, Vol. 64, No. 128), however final action on this proposal has yet to occur. The Bald eagle therefore continues its status as a federally endangered species under the jurisdiction of the USFWS.

Bald eagles prefer to live and forage in and around the vicinity of lakes, reservoirs, wetlands and large river systems like that of the Delaware River that support healthy populations of large fishes. They construct their nests in supper canopy trees of the forests surrounding these aquatic resources. A supper canopy tree is that of which extends above the overall forest canopy providing both shelter for the nest and excellent perches for fishing. The USFWS requests that a mid-winter aerial survey for the presence of bald eagle nests be conducted by a qualified wildlife biologist along the Pennsylvania portion of the study corridor.

The Bald eagle was first listed as an endangered species under the Endangered Species Act in 1978 when it was experiencing drastic population declines resulting from the bioaccumulation of DDT in its food supply. Consumption of fish, which often contained high-levels of DDT caused the shells of bald eagle eggs to weaken and crack under the weight of the mother during incubation. Destruction of habitat, and poaching also contributed to the decline of our nation's icon long before the introduction of DDT in the 1940's. Through the implementation of the ESA and other wildlife conservation initiatives and the banning of DDT the bald eagle has made a substantial recovery. Today its population continues to steadily increase.

### ***Northeastern Bulrush***

The Northeastern Bulrush (*Scirpus ancistochaetus*) is a tall and slender grass-like hydrophyte that grows in small open herbaceous often isolated wetlands with varying depths of inundation. It is known to occur in as few as 55 to 60 extant communities in Appalachian Mountains of Pennsylvania, Vermont, Maryland, Virginia, West Virginia, Massachusetts and New York. Plants commonly associated with communities of the northeastern bulrush in Pennsylvania include wool grass (*S. cyperinus*), threeway sedge (*Dulichium arundinaceum*) and nodding sedge (*Carex gynandra*), Marsh St. Johns wort (*Triadenum virginicum*).

The USFWS requests that all wetlands within or adjacent to the study corridor be assessed for their suitability to support populations of northeastern bulrush. If suitable habitat exists in any wetlands associated with the study corridor then the USFWS requests that a qualified botanist experienced in the identification of Northeastern bulrush conduct surveys of these wetlands to rule out its occurrence. If populations of Northeastern bulrush are discovered in any wetlands within the study corridor they must be protected from any human induced disturbances such as dredging or filling as well as alternating water level resulting from increased stormwater run off attributed to the project.

#### **L.1.2 Pennsylvania Governing Agencies**

The Pennsylvania Fish and Boat Commission has noted its concern for two species, the Bog turtle (*Clemmys muhlenbergii*), a PA endangered and federally threatened species and the Timber rattlesnake (*Crotalus horridus*) which is a candidate for inclusion on the list of threatened and endangered species of Pennsylvania. The commission is most concerned with any new construction such as new sidings or stations that may disturb these species.

**Table L.1 State Designated Threatened or Endanger Fauna**

Common Name	Scientific Name	Pennsylvania Status
<b>Herpetiles</b>		
Bog turtle	<i>Clemmys muhlenbergii</i>	E
Timber rattlesnake	<i>Crotalus horridus</i>	C

Source: Pennsylvania Fish and Boat Commission

Key to Status Codes of Fauna table

- E Endangered species – species whose prospects for survival within the state are in immediate danger due to one or many factors; loss of habitat, over exploitation, predation, competition, disease.
- C Candidate species - those species that may not be on the "sick list" yet, but have suspicious "symptoms" that require watchfulness and caution.

The Bog turtle has been documented to occur within both the Stroudsburg and East Stroudsburg quadrangles of which depict portions of the study corridor. Construction of three station sites as well as an additional siding are planned within the vicinity of these two quadrangles however none of the construction is anticipated to disturb wetlands or undisturbed transitional areas that might adversely affect Bog turtle habitat.

The Timber rattlesnake is known to inhabit the forested, mountainous regions of Pennsylvania where it predates upon small mammals such as chipmunks mice and rats. They prefer to forage in the forest but conduct thermoregulatory activities along the southeastern facing cliffs and rocky talus slopes. Timber rattlesnakes have also been known to utilize the open habitats created by the ballast of railroad rights-of-way. Several known denning and basking sites for the timber rattlesnake have been documented along the study corridor on the Olyphant and Moscow USGS Quadrangles. An additional siding is planned along the corridor as it approaches Scranton on the Olyphant quadrangle while no new construction is anticipated within the Moscow and Portland Quadrangles.

The Pennsylvania Department of Conservation and Natural Resources (DCNR) Natural Diversity Index and the Pennsylvania Game Commission have both issued letters stating the project is unlikely to adversely affect any rare or endangered species documented in their databases and under their jurisdiction.

### **L.1.3 New Jersey Department of Environmental Protection - Natural Heritage Program**

The New Jersey Natural Heritage Program (NHP) has reviewed the study corridor and provided an extensive list of threatened and endangered plant and animal species that exhibit a likelihood of utilizing the study corridor as habitat. The NHP uses the Landscape Project Mapping to determine which fauna species that may inhabit a project area. Flora species, conversely, are documented with specific locations and are as noted below. It is important to note that these fauna species have not specifically been documented as utilizing the study corridor as habitat but have been documented in the surrounding environment. Flora species on the other are documented with specific locations and are as noted below. Only two plant species Shrubby St. Johns Wort (*Hypericum prolificum*) and Canada hawkweed (*Hieracium kalmii*) are documented to occur in the actual study corridor at two separate locations on the railroad embankment.

In addition the Landscape Project Mapping indicates that there are unspecified bird and herpetile species of special concern as well as at least one certified vernal pool on the alignment and one suitable vernal pool wildlife habitat located directly adjacent to railroad embankment.

#### ***Fauna***

Seventeen different species of threatened and endangered fauna are known to inhabit areas surrounding the corridor. All seventeen of these species listed as “on reference site” by the NHP were identified through the use of the Landscape Project mapping. It is important to note that these fauna species have not specifically been spotted utilizing the study corridor as habitat but have been documented in the surrounding environment, which encompasses portions of the corridor and candidate station areas. In addition to the listed threatened and endangered fauna species the Landscape Project Mapping also indicates that there are unspecified bird and herpetile species of special concern as well as at least one suitable vernal pool habitat along the study corridor.

The existing corridor fails to provide optimal habitat for any particular fauna species in its current state. Since the removal of track from the New Jersey portion of the corridor more than twenty years ago much of it has succumb to natural plant succession and has become over grown. The vegetation strata consist mostly of young non-native or invasive plant species and the soil foundation unsuitable to most native plants consisting mostly of stone ballast. Also during this time local residents have utilized the corridor for recreational all-terrain-vehicle (ATV) use. ATV use on the corridor has resulted in unvegetated paths along the entire length of the corridor. Existing disturbances from ATV use along the corridor include that of loud motor noise, sediment erosion and vegetation destruction. In addition to ATV use, the

corridor has also been used for target practice shooting. This evidence of human activity shows that the corridor is not an ideal sanctuary for wildlife.

**Table L.2 State Designated Threatened or Endangered Fauna**

Common Name	Scientific Name	New Jersey Status
<b>Vertebrates</b>		
<b>Birds</b>		
Barred Owl	<i>Stirix varia</i>	T
Red-shouldered hawk	<i>Buteo lineatus</i>	EB
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	T
Great Blue Heron	<i>Ardea herodias</i>	SC
Coopers Hawk	<i>Accipiter cooperii</i>	T
Boblink	<i>Dolichonyx oryzivorus</i>	T
Savanna sparrow	<i>Passerculus sandwichensis</i>	T
American Bittern*	<i>Botaurus lentiginosus</i>	EB
<b>Mammals</b>		
Bob cat	<i>Lynx rufus</i>	E
Indiana bat	<i>Myotis sodalis</i>	E
<b>Herpetiles</b>		
Wood turtle	<i>Clemmys insculpta</i>	T
Bog Turtle*	<i>Clemmys mullenbergii</i>	E
Blue-spotted salamander	<i>Amystoma laterale</i>	E
Longtailed salamander	<i>Eurycea I. Longicauda</i>	T
Timber rattlesnake	<i>Crotalus H. Horridus</i>	E
<b>Invertebrates</b>		
New England bluet	<i>Enallabma laterale</i>	TNC
Herbards noctuid moth*	<i>Erythroecia hebaridi</i>	TNC

Source: New Jersey Natural Heritage Program

\* Species mapped within ¼ mile of the study corridor

Key to Status Codes of Fauna table

- E Endangered species – species whose prospects for survival within the state are in immediate danger due to one or many factors; loss of habitat, over exploitation, predation, competition, disease.
- T Threatened species – A species that may become endangered if conditions surrounding the species begin to deteriorate.
- EB Endangered Breeding Population – a species whose breeding population within the state is in immediate danger due to one or many factors; loss of habitat, over exploitation, predation, competition, disease.
- SC Special Concern – a species that warrants special attention that exhibits some level of decline in population.
- TNC The Nature Conservancy has developed a ranking system for rare species. The species noted with the TNC are considered rare or may have at one time inhabited parts of the state. These species have no state status but are recognized by the Natural Heritage Program

## Flora

According to the New Jersey Natural Heritage Program (NHP) there are fourteen rare or endangered plants located within ¼ mile of the study corridor within New Jersey. Most of these plants have become rare as a result of habitat destruction, disturbances, poaching by collectors and competition from non-native invasive flora species. Almost all threats to rare or endangered plants are a result of human induced disturbances. The exact locations of flora occurrences remain confidential because many are sought by collectors. A brief description of each plant is included below.

American Mannagrass (*Glyceria grandis*) and the Button-Bush Dodger (*Cuscuta cephalanthi*) are both found in the same location within ¼ miles of the study corridor. Both have stable populations globally, although they are listed as endangered in the State of New Jersey and considered critically imperiled by the Nature Conservancy. American Purple Vetch (*Vicia americana*), Hairy Angelica (*Angelica venenosa*), Purple giant-hyssop (*Agastache scrophulariifolia*) and Low Sand Cherry (*Prunus pumila* var *depressa*) are all found within the same general area as American manna grass and Button-bush Dodder. These additional plants are not listed as endangered in New Jersey; however, they are considered imperiled within the State. They are all considered to have stable populations globally.

Shrubby St. John's-Wort (*Hypericum prolificum*) was found in the immediate vicinity of the rail road embankment at some point in the 1980's. Shrubby St. John's-Wort is listed as endangered within New Jersey and it is considered critically imperiled, although it is considered secure globally. It is restricted to specialized habitats and it is unlikely that substantial populations will be discovered even with intensive surveys.

Water Marigold (*Bidens beckii*) is an aquatic plant that has been observed growing in the littoral zones of a few lakes that border the railroad embankment. It is considered critically imperiled in New Jersey because of its apparent rarity. It was most recently documented in the study corridor in 1985.

Green Sedge (*Carex viridula* spp. *Viridula*) is an emergent hydrophyte, which has also been, documented along the shore a few lakes which border the railroad embankment. The Green Sedge is not listed as an endangered yet it is considered imperiled in New Jersey with between 6 and 20 known locations of its occurrence. It was last documented within the study corridor in 1914.

Canada hawkweed (*Hieracium kalmii*) was last reported in 1994 to have been growing on the railroad embankment along the Sussex County portion of the embankment. Canada Hawkweed is listed as endangered and is considered critically imperiled in New Jersey with fewer than 5 known locations. It is also considered globally stable.

The Glade Fern (*Athyrium pycnocarpon*) has also been observed in the vicinity of the study corridor. Although the Glade Fern is listed as an endangered species in New Jersey, it is considered to be globally stable. It is also listed as critically imperiled in New Jersey because five or fewer locations are documented within the State according to the Natural Heritage Area Program.

Hairy Angelica is found in a second location a long the study corridor within close proximity of Leathery grape fern (*Botrychium multifidum*) within a designated Natural Heritage Priority Site. Leathery grape fern is listed as endangered in New Jersey and considered critically imperiled within the state.

Lesser Bladderwort (*Utricularia minor*) a state endangered plant and Small-fruit Grooveburr (*Agrimonia microcarpa*) and Yellow Giant Hyssop (*Agastache neptoides*) not listed as endangered but are considered to be imperiled or critically imperiled within New Jersey. They are all known to occur with in a ¼ mile of the study corridor yet are not documented in the path of the alignment or any stations sites.

### *Natural Heritage Areas*

The New Jersey Natural Heritage Program maintains a map of natural diversity priority sites throughout the state. These priority sites exemplify some of the states most exceptional habitats for rare and endangered species and natural communities. Four Natural Heritage Priority sites are located immediately adjacent to or within the study corridor while four others lie within a 0.25-mile of the study area. Natural Heritage priority sites often contain remnant populations of flora and fauna species that were historically more abundant in New Jersey; however, human induced habitat destruction has led to population decline of these species.

- Limestone Ridge Marsh priority site is located in Blairstown Township, Warren County. Its biodiversity ranking is B4 or moderately significant with a reasonably high occurrence of imperiled species residing within the habitat and is considered a globally rare element. This priority site consists of a limestone wetland and upland complex. Two state listed endangered flora species and one state listed threatened fauna species have been documented within this priority site. The railroad embankment acts as the border of the entire southern boundary of this priority site.
- The Johnsonburg priority site is located on the border of Sussex and Warren counties in Frelinghuysen and Green Townships. The Natural Heritage Program Biodiversity ranking system considers this site a B2 or of very high significance and one of the most outstanding occurrences of any natural community with four or more globally rare elements. The railroad right-of-way passes directly through the southern portions of this site. This priority site contains Mud Pond, Francis Lake and Federal Springs as depicted on the USGS 7.5-minute Series Quadrangles as well as the associated exceptional resource value wetlands surrounded by a matrix of rich calcareous forests. This area is known for its extensive dolomite outcrops including that of which forms a dramatic escarpment to the north of Mud Pond. The Johnsonburg priority site drains into Bear Creek a category one trout producing water body that is also a headwater to the Pequest River. The site consists of a superb collection of globally rare upland and wetland communities, including fourteen State Endangered flora species and one State Threatened and one Federally Threatened fauna species.
- The Greendell Powerline Site is located approximately one half mile east of the Johnsonburg priority site in Green Township, Sussex County. This site consists of an extensive limestone calcareous fen composed of successional wetland communities and a wooded swamp. The Greendell Powerline site retains a Biodiversity Rank of B5 indicating that it is of general biodiversity interest. There are three rare flora species that are either State endangered, critically imperiled or of special concern persisting within this site.
- The Wolf Lake priority site consists of Wolf Lake and a surrounding upland buffer located in Byram Township, Sussex County. Wolf Lake supports a diverse array of aquatic vegetation including one State Endangered flora species. The Wolf Lake priority site maintains a biodiversity Rank of B4 or moderately significant with a reasonably high occurrence of imperiled species residing within the habitat and is considered a globally rare element. The railroad right-of-way passes through this priority site as well.

The following Natural Heritage Priority Sites; Columbia Floodplain, Kittatinny Mountain Macrosite, Greendell Marsh, and Wrights Pond Bluff are all found within 0.25-mile of the study corridor however adverse environmental impacts to these sites are not anticipated.

## **L.2 Impact Assessment**

The primary areas of concern for impacts to threatened and endangered species fall along much of the out of service portion of the corridor located in New Jersey as well as at candidate station sites and yard/maintenance facilities at various intervals along the entire study corridor. Potential impacts to critical habitat may be associated with the clearing of vegetation and earth moving construction required for installing new track along the corridor and at candidate station sites as well as rehabilitation and construction of existing concrete bridge and culvert structures. While it is highly probable that wildlife cross or travel along the corridor on various foraging or breeding migrations, it will not create any more of a physical barrier than already exists given the extensive cut and fill embankments. Reactivation of rail service may however attribute to habitat fragmentation for those species which are sensitive to noise.

### **L.2.1 US Department of the Interior – Fish and Wildlife Service**

The Endangered and Nongame Species (ENSP) program has undertaken special effort to identify, protect and conserve (in conjunction with the New Jersey Green Acres Program) Bog Turtle habitat areas. ENSP performed an extensive survey of Bog Turtle habitat from 1993 to 1999 to identify confirmed and potential habitat for bog turtles. The habitat areas were ranked as to their suitability to provide habitat for large populations of turtles that could potentially move from one wetland complex/stream corridor to another to facilitate breeding. This also helps to prevent inbreeding depression and susceptibility to episodic disease and environmental stress. Many bog turtle habitat corridors are fragmented by development and this has been the leading factor in the decline of populations. Invasive non-native plant species and cattle grazing have also been a factor in the loss of habitat for the turtles. Maintenance of corridors between habitats is a priority for the preservation of bog and wood turtle habitats. Initial evidence indicates that bog turtles will use drainage culverts to cross beneath roadways and rail corridors if they are available.

To determine if proposed activities may adversely affect bog turtles in New Jersey, the following information will be provided to the New Jersey and Pennsylvania field offices of the Fish and Wildlife Service as required by the agencies:

A survey of wetland habitats along the entire project area will be conducted during preliminary engineering. The survey results should include a United States Geologic Surveys (USGS) topographic map indicating the location of the project area and location of wetlands; color photographs of the wetlands; surveyor's name; date of survey; and a description of the hydrology, soils and vegetation. The submission will also include:

- Information of the proposed impacts/widening of any rights-of-ways adjacent to the wetlands throughout the project area.
- A cross-section of the rights-of-way indicating existing, proposed and temporary versus permanent rights-of-way.
- Information on alternatives that may have been considered.

The information above will be submitted to the Fish and Wildlife Service to determine if further consultation pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 is required. In accordance with Section 7(a)(2), an assessment of potential direct, indirect and cumulative impacts is required for all federal actions that may affect listed species. If bog turtles are present on the project site, the Service must also be consulted to ensure that project activities will not adversely impact the bog turtle. Also, pursuant to Section 7(d), once consultation has been initiated, the federal agency and the permit/license applicant shall not make any irreversible or irretrievable commitment of resources with

respect to the proposed action that may affect the formulation or implementation of any reasonable and prudent project alternatives.

If any wetlands occur within or near the project area, their potential suitability as a bog turtle habitat will be assessed during preliminary engineering, as described under Step 2 of the Fish and Wildlife Service *Guidelines for Bog Turtle Surveys*. The habitat survey could be conducted concurrently with a routine wetland delineation by a qualified wetland biologist. If wetlands are identified as potential bog turtle habitat, efforts will be made to avoid any direct or indirect impacts to those wetlands. If adverse impacts cannot be avoided, a more detailed and thorough survey will be performed, as described in Step 3 of the *Guidelines for Bog Turtle Surveys*. The Step 3 Survey will be conducted by a qualified biologist with bog turtle field survey experience. Survey results will be submitted to the Fish and Wildlife Service for review and concurrence. If project activities might adversely affect bog turtles, additional consultation with the Service will be conducted, pursuant to Section 7 of the Endangered Species Act.

Upon the request of the USFWS, NJ TRANSIT has committed to perform wildlife surveys for Bald eagle, Bog Turtle, Indiana Bat and Northeastern bulrush. These surveys will be conducted during the preliminary engineering/final design stage, when the project has advanced to a point in which such studies will be current for the USFWS to evaluate the potential for impacts on these species.

### **L.2.2 Pennsylvania**

Impacts along the Pennsylvania portion of the alignment between Slateford Junction and Scranton are anticipated to be minimal. The Timber rattlesnake is known to specifically utilize the existing alignment as habitat. The Pennsylvania Fish and Boat commission reports that Timber rattlesnakes have been observed utilizing the cleared area and ballast of the existing rail bed for thermoregulatory and denning activities in Lackawanna County. While reconstruction of the rail bed could potentially disturb timber rattlesnakes denning within the ballast, timing restrictions and precautions may be taken to prevent injury or death to snakes discovered onsite during construction. Increased rail traffic following construction may however drive snakes away from the rail bed habitat ultimately destroying the habitat.

The Timber rattlesnake is a candidate for being listed as a threatened or endangered species in Pennsylvania. While not designated specifically as endangered impacts to this species and its habitat is strongly discouraged.

In addition to the timber rattlesnake, the Fish and Boat commission has concerns regarding Bog turtle habitat on or along the alignment. The Bog Turtle (*Clemmys muhlenbergii*) has been observed on the Stroudsburg and East Stroudsburg quadrangles in Monroe and Northampton Counties. It is not anticipated that impacts to the Bog Turtle will occur based on the fact that suitable wetland habitats are not present at each of the bridge areas slated for construction activities within this region. It is recommended that this be verified in the field through surveys at the following locations: Slateford Creek Bridge construction area vicinity; Cherry Creek Bridge construction area vicinity; and the Brodhead Creek Bridge construction area vicinity. Field verification has confirmed that there is no potential for bog turtle habitat on the alignment and there are no plans for expansion of the existing right of way. Therefore impacts to bog turtle are not anticipated though Preliminary Phase 1 surveys will be conducted along the alignment at the request of the US Fish and Wildlife Service.

Assessments of impacts resulting from the proposed station sites are addressed below.

### ***Scranton Station Area***

The proposed Scranton is located in the city of Scranton, a highly urbanized area. Impacts to threatened and endangered are not anticipated.

### ***Tobyhanna Station Area***

The proposed Tobyhanna station consists entirely of previously disturbed land, a station building and control tower, gravel parking area and overgrown storage areas. Sufficient background data is not available yet to determination as to whether threatened and endangered species will be impacted by construction of this site. This determination will depend on responses from the aforementioned Pennsylvania agencies.

### ***Pocono Mountain Station Area***

The proposed Pocono Mountain station site consists of undisturbed hardwood deciduous forest located adjacent to a large palustrine forested wetland complex. Sufficient background data is not available yet to determination as to whether threatened and endangered species will be impacted by construction of this site. This determination will depend on responses from the aforementioned Pennsylvania agencies.

### ***Analomink Station Area***

The proposed Analomink station is located in a rural setting off PA Routes 191 and 447. The entire site has been disturbed from its natural state and much of it consists of gravel parking area. Bog turtles are reported to inhabit the area surrounding the site therefore preliminary Phase I surveys for suitable habitat will be required by the US Fish and Wildlife Service prior to development of the site.

### ***East Stroudsburg Station Area***

The proposed East Stroudsburg station site is located in the center of East Stroudsburg Borough in an urban setting. No impacts to threatened or endangered species are anticipated.

### ***Delaware Water Gap Station Area***

The proposed Delaware Water Gap station site consists largely of developed land not suitable to supporting habitat for wildlife. There are no reports of threatened or endangered species of on or near its vicinity. No impacts are anticipated.

## **L.2.3 New Jersey**

The New Jersey portion of the alignment has remained inactive to rail service for near 25 years. In that time ecological secession has taken course and significant amounts of herbaceous and wood vegetation have taken over portions of the alignment, which will need to be cleared. While the alignment has remained free from disturbances from rail service it is however subject to frequent unauthorized recreational use by individuals operating all terrain vehicles (ATVs). Therefore it is very important to note that the alignment within New Jersey has remained active to destructive human use and is not to be considered a secluded sanctuary.

Because the alignment consists of substantial woody vegetation including trees greater than six inches in diameter, preliminary surveys for the presence of habitat suitable for Indiana bat will be required prior to construction. While the potential for Indiana bat habitat along and on the alignment exist, it is highly

unlikely that the project will disturb this species or destroy any of its habitat. Much of the woody vegetation consists of tree of Heaven (*Ailanthus altissima*) a non-native species which is not known to provide suitable habitat for Indiana bat. Nonetheless surveys will be conducted to rule out any possibilities of disturbing this species.

Issues regarding impacts to bog turtle habitat are also anticipated to be negligible in that the alignment is often high above any wetlands on earthen fill embankment. There are no plans to widen the existing rail bed thence filling in wetlands. All earth disturbances are likely to be confined to the rail bed and embankment.

The multiple New Jersey state listed threatened and endangered species reported by the NHP as “on reference site” are inventoried using the Landscape Project Mapping database and are therefore not necessarily specific to the corridor. The Designation as “on reference site” simply implies that the corridor is in contact or traverses areas that are contiguous with documented sighting of these species. Surveys for specific species are likely to be required by the NJDEP to prove that the project will not afflict individual species or critical habitat.

In addition to agency correspondence the Landscape Project GIS Database Version 2 was analyzed for the presence of threatened and endangered wildlife at proposed station sites within New Jersey.

#### ***Blairstown Station Area***

The Blairstown Station site consists of disturbed land that has recently been altered by the current landowner. Landscape Project mapping indicates that a small portion of the site may support habitat for Bobcat, Barred owl, Longtail salamander, bird priority species and herpetile priority species which have all been observed on or near the site. In addition the site is contiguous with a 10-hectare or greater forested core. The US Fish and Wildlife Service will require surveys for the suitability of Indiana bat habitat. Because the site lacks the presence of any wetlands and is located at least three hundred feet up slope from any wetlands of flowing water the presence of bog turtle is unlikely. The potential for impacts to threatened and endangered species at this location exists. The potential for impacts to threatened and endangered species at this location exists however the site does not consist of a significant amount of forest cover.

#### ***Andover Station Area***

The Andover Station site is dominated by upland hard wood deciduous forest with a few very small wetlands scattered throughout the site. Landscape Project mapping indicates that this site may potentially providing habitat for the following threatened and endangered species; Wood turtle, Barred Owl, Bobcat, Redheaded woodpecker, Red shouldered hawk, bird species of concern and herpetile species of concern. The Landscape project also indicates that the site is associated with a 10-hectare or greater forested core. The NJDEP will likely require wild life surveys for the presence of the above-mentioned species. The US Fish and wildlife Service will require surveys for the suitability of Indiana bat habitat. Preliminary surveys of the site have indicated that the suitable habitat for Indiana bat may exist. Surveys to document the presence or absence of threatened and endangered species will be required prior to development of the site. The potential for impacts to threatened and endangered species at this location exists.

#### ***Vertebrates***

Impacts to the Barred Owl (*Strix varia*) are not anticipated by the nature of habitat that the Barred Owl requires. The Barred Owl is listed as threatened in the State of New Jersey and tends to be found in small disjunct distributions/populations. The breeding population is of primary concern because populations

tend to be small and isolated as a result of habitat fragmentation. The Barred Owl is considered relatively secure globally and is rare only in certain areas of its range. Fragmentation of Barred Owl habitat and destruction of nesting habitat will not result from implementation of the project.

The Wood Turtle (*Clemmys insculpta*) is found along wetland complexes surrounding Bear Creek and Paulins Kill and its associated tributaries. It is recommended that wetland areas surrounding the aforementioned streams be surveyed for Wood and Bog Turtle habitat if they are to be impacted by construction activities. Some construction activity is anticipated on the Paulins Kill Viaduct Bridge, however, no earthmoving activities involving stabilization of the structure that may permanently affect adjacent wetlands are anticipated. The wetland complex slightly east of the CR 611 (Kennedy Road) that is slated for replacement is isolated from the surrounding wetlands and streams known to support Bog and Wood Turtle populations. It is not anticipated that reconstruction activities will affect either species; however, rail construction activities near Bog and Wood Turtle habitat must implement Best Management practices to ensure that habitat areas are not affected.

The Savannah Sparrow (*Passerculus sandwichensis*) is not anticipated to be impacted by implementation of passenger service on the rail line.

### ***Vascular Plants***

Canada Hawkweed (*Hieracium kalmii*) is found in the vicinity of Dallis Pond and the Water Marigold (*Bidens beckii*) is found near Wolf Lake and Wright's Pond. Canada Hawkweed has been observed on the railroad embankment 0.2 miles west of Dallis Pond. The wetland complexes surrounding the three ponds are anticipated to require additional drainage ditches and it is recommended that the construction sites be surveyed for the presence of the aforementioned endangered species.

The Glade Fern (*Athyrium pycnocarpon*) has been documented near Kerrs Corner, within the vicinity of the Blairstown station area, west of Warren County Route 521 (Hope Road). Shrubby St. John's-Wort (*Hypericum prolificum*) has been observed within the Cedar Lake Natural Heritage Area. It is recommended that the Blairstown station site and Warren County Route 521 Bridge area be surveyed for the presence of these two species during preliminary engineering.

The Giant Yellow Hyssop (*Agastache neptoides*) and Shrubby St. John's-Wort (*Hypericum prolificum*) have been observed along the right-of-way. It is recommended that the right-of-way be surveyed for the presence of these species during preliminary engineering.

Several species of concern have been observed within the general vicinity of the Delaware Water Gap Bridge. Species observed include: Purple Giant Hyssop (*Agastache scrophularifolia*); Hairy Angelica (*Angelica venenosa*); American Mannagrass (*Glyceria grandis*); Button Bush-Dodger (*Cuscuta cephalanthi*); American Purple Vetch (*Vicia americana*); and Low Sand Cherry (*Prunus pumila* var *depressa*). It is recommended that the area surrounding the Delaware Water Gap bridge impacted by construction activity be surveyed for the presence of these species during preliminary engineering.

### ***Natural Heritage Areas***

Potential impacts have been identified for the following.

- Limestone Ridge Marsh, Blairstown - The Limestone Ride Marsh Area is approximately 0.4 miles west of the Blairstown station area. The potential for similar habitat to exist east of the defined area toward the station area indicates the potential for threatened and endangered species to be present on site. Impacts to the Barred Owl (*Strix varia*) are not anticipated, as construction of the station area

should not involve the removal of trees that may provide suitable habitat for the Barred Owl. The Longtail Salamander (*Eurycea longicauda*) may be affected by the fragmentation of habitat resulting from construction of the rail line. It is recommended that the site be investigated for suitable habitat for the following threatened species: Longtail Salamander (*Eurycea longicauda*); Green Violet (*Hybanthus concolor*); Lake Cress (*Armoracia lacustris*); and Glade Fern (*Arthyrium pycnocarpon*). In addition, the Hebard's Noctuid Moth (*Erythroecia hebardei*), considered a conservation priority, is also found within the vicinity. The wetlands surrounding the rail line and Warren County Route 521 (Hope Road) Bridge may provide suitable habitat for these species and it is recommended that the area be surveyed for the presence of these and other endangered species indigenous to wetland areas during preliminary engineering.

- Wolf Lake, Byram Township - Additional culverts are anticipated to be installed surrounding this wetland area and it is recommended that the site be surveyed for the presence of the Water Marigold (*Bidens beckii*) during preliminary engineering. Canada Hawkweed (*Hieracium prolificum*) is found upon the railroad embankment 0.2 miles west of Dallis Pond near the Wolf Lake Natural Heritage Area. It is also recommended that the area requiring construction activity be surveyed for the presence of this species as well as other state listed threatened/endangered species indigenous to wetland habitats.
- Powerline Site, Greendell - Placement of the Sussex County Route 611 Bridge (Kennedy Road) is expected and the bridge is approximately 0.4 miles west of the Powerline Site. The Powerline site is a unique ecological system within itself, and it is unlikely that similar habitat exists surrounding the Sussex County Route 611 Bridge as it has already been impacted by development and the nearest wetland area is nearly 500 feet to the east. It is recommended that the area surrounding the Sussex County Route 611 Bridge be surveyed to confirm that potential habitat for the State listed endangered and threatened species does not exist on site.
- Johnsonburg, Frelinghuysen - The dry-mesic calcareous forest of mixed deciduous hardwoods and limestone escarpments is a unique ecosystem. The Johnsonburg site encompasses the rail line for approximately 2.4 miles and crosses two branches of Bear Creek. The area includes several types of wetlands and is known to support populations of the Federally threatened and State-listed endangered Bog Turtle (*Clemmys muhlenbergii*). The only construction activity anticipated within the site is construction of the rail line. Best management practices must be implemented to reduce any impacts, even of a temporary nature, to this critical habitat area. It is recommended that the culverts/bridges beneath the right-of-way be inspected to ensure they are in good condition. Habitat fragmentation affecting reproduction when members of the population are segmented from one another has been a major factor in the decline of the Bog Turtle. Research indicates that when culverts allowing passage between habitat areas are installed, Bog Turtles will utilize these passages. In addition, the Wood Turtle (*Clemmys insculpta*), a state listed threatened species, has been observed on site.

### **L.3 Mitigation**

Direct impacts to threatened and endangered species are not permitted (mitigation is not acceptable). Approval for projects that adversely impact the habitat of potential threatened and endangered species may be obtained if creation of additional habitat is feasible. Projects that adversely impact potential threatened and endangered species habitat are generally not approved until alternative measures are proven to be more detrimental to existing habitat or economically unfeasible. Direct impacts to threatened or endangered species were not identified in this analysis.