

# **APPENDIX H**

## ***Habitat Assessment***



A habitat review was performed by an Environmental Scientist from C&S Engineers to review the potential for threatened and endangered species and/or their habitat to occur within the Project Area identified for the Trenton Mercer Airport EA for RPZs and Obstruction Mitigation.

**Cooper's Hawk:** Suitable habitat for the consist of forests and woodlands but have been increasingly been found in suburbs, parks, fields and along busy streets as long as there are trees around. Cooper's Hawks build nests in pines, oaks, Douglas-firs, beeches, spruces, and other tree species, often on flat ground rather than hillsides, and in dense woods. Nests are typically 25-50 feet high, often about two-thirds of the way up the tree in a crotch or on a horizontal branch<sup>1</sup>. The first egg is laid around mid-May with all the babies pipping being about 36 days later. After about 56 days, the fledglings can hunt and fly on their own and no longer return to the nest<sup>2</sup>. Based on C&S's habitat assessment, the proposed project areas consist of maintained upland forest (Northern hardwood), late successional upland field (shrubland), maintained grassland/early successional upland field, palustrine forested wetland, palustrine emergent wetland. The response from New Jersey Natural Heritage Program dated October 6, 2016, the Cooper's Hawk has been documented within the project area. The project has the potential to affect Cooper's Hawk habitat, however since tree clearing will be done between October 31 through March 1 which is outside the breeding season for the Cooper's Hawk, no direct impacts to this species is anticipated.

**Great Blue Heron:** Suitable habitat for the Great Blue Heron consists of marshes, swamps, shores, tidflats as well as any kind of calm fresh waters or slow-moving rivers, also in shallow coastal bays. Herons build nests in trees or shrubs near water, sometimes on ground in areas free of predators. Nests sites are highly variable, usually in trees 20-60' above ground or water, sometimes in low shrubs, sometimes on ground (on predator-free islands), sometimes well above 100' in tree. The breeding for Great Blue Herons is usually from March to May, the incubation lasts around 25 to 30 days and the young leave the nest after 65-90 days<sup>3</sup>. Based on C&S's habitat assessment, the proposed project areas consist of maintained upland forest (Northern hardwood), late successional upland field (shrubland), maintained grassland/early successional upland field, palustrine forested wetland, palustrine emergent wetland. The response from New Jersey Natural Heritage Program dated October 6, 2016, the Great Blue Heron has been documented within the project area. The project has the potential to affect Great Blue Heron habitat, however since tree clearing will be done between October 31 through March 1, which is outside the breeding season for the Great Blue Heron, no direct impacts to this species is anticipated.

**Bald Eagle:** Bald Eagles are typically found near large bodies of water, such as bays, rivers, and lakes, which support a healthy population of fish and waterfowl, their primary food source. Generally, Bald Eagles tend to avoid areas with human activities. They will perch in either deciduous or coniferous trees. Large, heavy nests are usually built near water in tall pine, spruce, fir, cottonwood, oak, poplar, or beech trees. Non-breeding adults and wintering birds are known to have communal roost sites. During the winter, the roost sites may be farther away from food sources. This may be due to the need for a more sheltered, warmer area. Feeding areas during the winter months usually have a high concentration of fish and waterfowl and open water<sup>4</sup>. Based on C&S's habitat assessment, the proposed project areas consist of maintained upland forest (Northern hardwood), late

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<sup>1</sup> Cornell: [https://www.allaboutbirds.org/guide/Coopers\\_Hawk/lifehistory](https://www.allaboutbirds.org/guide/Coopers_Hawk/lifehistory)

<sup>2</sup> [http://www.coopershawks.com/lh\\_breeding.html](http://www.coopershawks.com/lh_breeding.html)

<sup>3</sup> <http://www.audubon.org/field-guide/bird/great-blue-heron>

<sup>4</sup> NYNHAP: Bald Eagle: <http://www.acris.nynhp.org/guide.php?id=6811&part=2>

successional upland field (shrubland), maintained grassland/early successional upland field, palustrine forested wetland, palustrine emergent wetland. The response from New Jersey Natural Heritage Program dated October 6, 2016, the Bald Eagle has been documented within ¼ mile of the project area. The project does not involve the cutting of any known Bald eagle nesting trees or constructing any towers, wires and/or other obstructions known to potentially affect the Bald eagle. No direct impacts to this species is anticipated.

**Eastern Meadowlark:** Suitable habitat for the Eastern Meadowlark consists of larger, adjacent areas of grazed pastures and grasslands. Eastern Meadowlarks are sedentary throughout much of their breeding range, and pairing tends to occur in early April with nest construction beginning a week later. The nest is constructed in a small depression, typically well hidden by dense vegetation. The incubation period lasts about 13-16 days and they young remain in the nest for 10-12 days. It is possible for a female to have two broods in a nesting season depending on the success of the first brood<sup>5</sup>. Based on C&S's habitat assessment, the proposed project areas consist of maintained upland forest (Northern hardwood), late successional upland field (shrubland), maintained grassland/early successional upland field, palustrine forested wetland, palustrine emergent wetland. The response from New Jersey Natural Heritage Program dated October 6, 2016, the Eastern Meadowlark has been documented within ¼ mile of the project area. The project has the potential to affect Eastern Meadowlark habitat however, since tree clearing will be done between October 31 through March 1, which is outside the breeding season for the Eastern Meadowlark, no direct impacts to this species is anticipated.

**Vernal Pool:** Vernal pools are seasonal depressional wetlands that occur in glaciated areas of northeastern states. They are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall. These wetlands range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool. Climatic changes associated with each season cause dramatic changes in the appearance of vernal pools. The pools collect water during winter and spring rains, changing in volume in response to varying weather patterns. During a single season, pools may fill and dry several times. In years of drought, some pools may not fill at all. The unique environment of vernal pools provides habitat for numerous rare plants and animals that are able to survive and thrive in these harsh conditions. Many of these plants and animals spend the dry season as seeds, eggs, or cysts, and then grow and reproduce when the ponds are again filled with water. In addition, birds such as egrets, ducks, and hawks use vernal pools as a seasonal source of food and water<sup>6</sup>. Based on the habitat assessments conducted on April 29, May 19 and June 17, 2015 by Amy S. Greene Environmental Consultants determined that the study area does not contain habitat consistent with a vernal pools. Based on this information the project should not affect vernal pool habitat.

**Indiana Bat:** Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats<sup>18</sup> such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags  $\geq 5$  inches dbh (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates

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<sup>5</sup> NYSDEC: <http://www.dec.ny.gov/animals/87384.html>

<sup>6</sup> EPA: <https://www.epa.gov/wetlands/vernal-pools>

of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. A bat acoustic survey was completed from August 10-13, 2015. Based on the Eco-Tech Consultants, Inc survey report dated September 2015, no bats were captured. According to the survey report, “*Eco-Tech does not believe the current habitat supports Indiana bats and that any potential impacts to northern long-eared bats resulting from this project would be negligible to both the local and overall population*”. Based on correspondence from USFWS dated October 8, 2015, USFWS concurred with the determination that the proposed project is not likely to adversely affect Indiana bat. However, USFWS stated if tree clearing is not complete by August 13, 2017, the Service must be contacted again to determine if additional summer surveys will be required. Based on the current project schedule, the tree clearing will not be complete by August 13, 2017; USFWS will be contacted again to determine if summer surveys will be needed again to determine the presence of Indiana bat within the project area. Since USFWS will be contacted again to determine the potential impact to Indiana bat and all mitigation measures will be followed, no direct impacts to this species is anticipated.

**Northern long-eared Bat:** Suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags  $\geq 3$  inches dbh that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1000 feet of other forested/wooded habitat. NLEB has also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. NLEBs typically occupy their summer habitat from mid-May through mid-August each year and the species may arrive or leave some time before or after this period. A bat acoustic survey was completed from August 10-13, 2015. Based on the Eco-Tech Consultants, Inc survey report dated September 2015, no bats were captured. According to the survey report, “*Eco-Tech does not believe the current habitat supports Indiana bats and that any potential impacts to northern long-eared bats resulting from this project would be negligible to both the local and overall population*”. Based on correspondence from USFWS dated October 8, 2015, USFWS concurred with the determination that the proposed project is not likely to adversely affect Northern long-eared Bat. However, USFWS stated if tree clearing is not complete by August 13, 2017, the Service must be contacted again to determine if additional summer surveys will be required. Based on the current project schedule, the tree clearing will not be complete by August 13, 2017; USFWS will be contacted again to determine if summer surveys will be needed again to determine the presence of NLEB within the project area. Since USFWS will be contacted again to determine the potential impacts to NLEB and all mitigation measures will be followed, no direct impacts to this species is anticipated.

**Little Brown Bat:** Little brown bats are not territorial—they live in colonies numbering in the hundreds of thousands of individuals! Colonies aggregate at nesting sites called roosts. There are several different types of roosts that serve different purposes—day and night roosts provide habitat for bats when they are sleeping or resting. Hibernacula are a type of roost that is occupied in the winter months. Little brown bats choose buildings, caves, trees, rocks, and wood piles as roost sites. They may migrate hundreds of miles to get from

their summer habitats to hibernacula<sup>7</sup>. Adults mate in mid to late autumn while swarming near the entrances of hibernation sites. Males arousing during hibernation may also mate with torpid females. Females store sperm from autumn and winter matings. Fertilization occurs in the spring as females leave hibernation to form nursery colonies. The gestation period is variable, usually 50-60 days, and depends on a female's ambient temperature. Females bear their single young in late June or July. Females disperse from nursery colonies when the young are weaned and capable of flight, at approximately 21-28 days<sup>8</sup>. Correspondence with USFWS dated October 8, 2015 stated that the proposed project may impact wildlife that are being reviewed for listing under the ESA. The USFWS is currently reviewing the little brown bat to determine if the species may warrant protection under the ESA. Based on the 2015 summer acoustic survey results conducted by Eco-Tech, the little brown bat may occur within the footprint of the proposed project. The assumed presence of little brown bats suggests little brown bats may use the footprint of the project for foraging or as a travel corridor. The USFWS believes maternity roosts may occur within the proposed project area and therefore removal of maternity roosts during the active season (April 1 to September 30) may result in the death or injury of adults and/or their pups. To prevent injury or death to individual little brown bats that may roost in the project area, the USFWS recommends a time-of-year restriction of tree clearing activities (any trees greater than or equal to 5" dbh) from April 1 to September 30. Since tree clearing will be done between October 31 through March 1, no direct impacts to this species is anticipated.

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<sup>7</sup> <https://www.nwf.org/Wildlife/Wildlife-Library/Mammals/Bats/Little-Brown-Bat.aspx>

<sup>8</sup> <http://www.esf.edu/aec/adks/mammals/littlebrownbat.htm>