

10.0 ECOLOGY

This chapter discusses the vegetation resources, wildlife habitats, and threatened and endangered species within the study corridor. Each of these topics is addressed in Section 10.1: Affected Environment. An assessment of project-related impacts is provided in Section 10.2. Potential mitigation measures are presented in Section 10.3.

10.1 Applicable Legal Authority

The Federal Endangered Species Act of 1973 (16 USC 1531 et. seq.) and its implementing regulations (50 CFR 402) govern the protection of federally-listed threatened and endangered species in the United States. The authority to list species as threatened or endangered is shared by the National Marine Fisheries Service (NMFS), which is responsible for listing most marine species, and the US Fish and Wildlife Service (USF&WS), which administers the listing of all other plants and animals.

In Virginia, the protection of state-listed species of special concerns is administrated by two separate agencies:

- The Virginia Department of Conservation and Recreation, Division of Natural Heritage; and
- The Virginia Department of Game and Inland Fisheries (VDGIF)

10.2 Affected Environment

Much of the project corridor contains habitats typical of residential and industrial development. This includes residential and commercial landscaping, idle grasslands, small woodlots and wetlands.

10.2.1 Vegetation

Small, fragmented areas of natural vegetative communities are scattered throughout the project corridor. Most of these areas are associated with wetlands, drainage ways, or are vacant lots. Natural plant communities in upland areas include oak, hickory, sweetgum and loblolly pine. Tupelo, gum, willow and water oaks are common in the forested wetland areas. Marsh vegetation includes common reed and shrubs, as well as a variety of native rushes, sedges, grasses and forbs.

10.2.2 Wildlife

Wildlife that commonly use the habitat provided in and surrounding the project corridor includes songbirds, small mammals, shorebirds and waterfowl. A variety of marine and freshwater species are common to the habitat provided by the estuaries and tributary streams in and around the project corridor.

10.2.3 Protected Species

Protected Species include species that are Federally listed as rare, threatened, endangered and/or candidate. There may also be listed species of special concern that are under State protection. Both of these categories may include plant or animal species.

Federally Listed Species - The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) were contacted to determine if any Federally listed rare, threatened, endangered or candidate (RTE) species are present near the project corridor.

The peregrine falcon (*Falco peregrinus*) is the only terrestrial species cited. The peregrine falcon was once listed as threatened but has since been delisted because the species has recovered to the point that it is no longer threatened with extinction. Once a species has been delisted, it is no longer afforded the special protections inherent in the Endangered Species Act. The peregrine falcon is still offered some protection, however, under the Migratory Bird Treaty Act as well as state regulations as described below.

Falcons nest on several bridges south of the project corridor. Open space habitat within or near the project corridor may be used by falcons for foraging and feeding. No nest sites are located within the construction zone of the project corridor, however they are located within ½ mile of the corridor.

Several wading bird rookeries are documented in proximity to the corridor, including two that are within one-quarter mile of proposed construction areas. Rookeries have been documented south of the project corridor, near Broad Creek and I-64, however during a recent field investigation, no rookeries were found.

Sea turtles are the only protected marine species in the general area. No sea turtles are known to occur within the project corridor.

Based on the information available, there are no known occurrences of federally listed threatened or endangered species located in proximity to the project corridor.

State Listed Species - The Virginia Department of Conservation and Recreation, Division of Natural Heritage was requested to conduct a search of the Biological and Conservation Data System. Three natural heritage elements have been documented in proximity to the project corridor, including a sub-mesotrophic forest, peregrine falcon (*Falco peregrinus*) and great egret (*Ardea alba*). None of these natural heritage elements occur directly within the project corridor, however they may be located within ½ mile of the project.

The Virginia Department of Game and Inland Fisheries (VDGIF) was contacted to review their database for state threatened and endangered species. They indicated the presence of the peregrine falcon (state threatened), and nesting colonies of the green heron (*Butorides virescens*, state special concern), yellow-crowned night heron (*Nyctanassa violacea violacea*, state special concern), great egret (*Ardea alba egretta*, state special concern) and great blue heron (*Ardea herodias herodias*). No nest sites were

documented within the construction zone of the project corridor, however they are located within ½ mile of the corridor.

U.S. Fish and Wildlife Service recommended contacting Dr. Brian Watts of the College of William and Mary to determine the existence of waterbird nesting sites.

The College of William and Mary, Center for Conservation Biology is responsible for updating the Virginia Colonial Waterbird Survey. The locations of nesting colonies were evaluated in the field during the summer of 2003 to determine if any of the historically documented sites are still active. The two areas that have been documented are in residential/developed locations. Based on the 2003 field review, the previously documented nest sites are no longer actively used by colonial water birds. Dr. Bryan Watts (College of William and Mary) has conducted extensive research on colonial waterbirds. Correspondence with Dr. Watts (Appendix A) indicates that, while no nesting pairs were detected in 2003, it is likely that these nest sites will be used in the future. Nevertheless, these species are very habituated to human activity and, as such, construction activity near their nesting areas poses no harm even during the breeding season.

The Department of Game and Inland Fisheries concurred with Dr. Watt's conclusion that construction activity in the vicinity of the historical nesting sites for yellow-crowned night herons or any other colonial waterbirds known to nest in proximity to this project will not likely have adverse impacts on the species, even during the nesting season. Therefore, a time of year restriction on this project is not needed.

10.3 Environmental Impacts

10.3.1 No-Build Alternative

The No-Build Alternative would have no impact on vegetation and wildlife.

10.3.2 TSM Alternative

The TSM Alternative includes a variety of bus facilities and service improvements. Most of these improvements would occur within developed areas and would not impact ecological resources.

10.3.3 Preferred Alternative

A. Direct Impacts

Potential direct impact to vegetation and wildlife as a result of the Preferred Alternative would primarily be limited to the area immediately adjacent to the existing railroad tracks. Most of the area impacted consists of urban surfaces, landscaped turf and abandoned idle fields. One relatively intact wooded area, just east of Norfolk State University station, would be impacted. This woodlot is located in a narrow corridor between the existing tracks and I-264. The quantity of the affected woodlot is limited by the urban setting and past disturbances. Approximately 3.5 acres of this seven-acre woodland would be affected by the project. The woodlot has minimal vegetative diversity.

The project would impact several wetlands that are located adjacent to the existing rail corridor, as discussed in Chapter 11 Water Resources. All of the wetlands have been previously impacted by human activity such as development within the watershed, placement of fill in the wetland, and increased pollutant loads from surface water runoff. In spite of these disturbances, the tidally influenced wetlands are still considered to have moderate to high quality characteristics with regard to wildlife habitat, vegetative diversity, water quality and shoreline stabilization functions.

Songbirds and small mammals are the primary wildlife utilizing the woodlot, wetlands and other habitats along the corridor. Overall, the amount and quality of habitat that would be required for project construction is small and of a low quality, in relation to the habitat available in the general project area. Removal of woodlot and other vegetation would displace the urban wildlife that currently utilize these habitats. The impact to local wildlife populations is anticipated to be relatively minor since the species currently utilizing the site are adapted to an urban environment, there are other similar woodland and wetland areas present along the corridor, half of the woodland corridor (mentioned in the previous paragraph) would remain intact, and wetlands will be replaced.

B. Secondary Impacts

Potential secondary impact to nearby wetlands and waterways may result from an increase in impervious surface associated with station, facilities and road construction.

C. Special Concern Species

Federally Listed Species – In accordance with the Federal Endangered Species Act of 1973 as amended (16 USC 1531-1543), the proposed project will have no affect on federally listed threatened, endangered or candidate species.

State Listed Species - The peregrine falcon nests within the ½ mile of proposed construction activity. According to the VDGIF, the nest sites are located in areas with significant human disturbance (i.e. under bridges within city limits) and are greater than one-quarter mile from the project area. Therefore, the proposed project will not likely affect the peregrine falcon nesting activities. No mitigation is necessary or proposed for this species.

Two wading bird rookeries were previously documented within one-quarter mile of the proposed construction areas. According to recently updated information, the rookeries are no longer occupied. However, these nest sites may be used in the future. Correspondence with the Center for Conservation Biology and VGIF indicate that the species utilizing the site is very habituated to human activity and that construction activity near their nesting areas poses no harm, even during the breeding season (Appendix A). Therefore, the proposed project would not affect the known nesting habitat of colonial water birds.

The Elizabeth River has been designated as a Confirmed Anadromous Fish Use Area. However, due to the scope of the project, VDGIF does not anticipate a significant adverse impact upon this resource.

10.4 Mitigation Plan

10.4.1 No-Build Alternative

There would be no impacts on ecological resources associated with the No-Build Alternative, therefore no mitigation measures are planned.

10.4.2 TSM Alternative

There would be little to no impacts on ecological resources associated with the TSM Alternative, therefore no mitigation measures are planned.

10.4.3 Preferred Alternative

A. Direct Impacts

Loss of woodlot, wetland and other vegetative communities would result in habitat loss and wildlife displacement. However, due to the condition of the existing wildlife and vegetative resources, the project is expected to have little impact on urban wildlife populations. General loss of habitat would be minimized by installing native species landscaping at station sites that provides opportunities for nesting and feeding, while being aesthetically appropriate for the urban setting. Wetland impacts will be minimized to the extent practicable and replaced at a minimum 1:1 ratio. The replacement wetlands will be designed to have equal or greater functional value than the impacted wetlands (specific wetland mitigation plans and impact quantities are documented in Chapter 11 Water Resources). There are no federal or state listed endangered, threatened or special concern species that would be directly impacted by project construction.

B. Secondary Impacts

Secondary impacts resulting from more impervious surfaces would be mitigated by construction of stormwater detention ponds at impacted station sites (See Chapter 11 Water Resources). These impacts would be mitigated by the construction of stormwater detention ponds at the affected station sites. Typical Best Management Practices, which include silt fences, temporary sediment basins, gravel entrances, temporary seeding and prompt revegetation when construction is complete, would be installed to control construction impacts and to minimize impacts in secondary areas. Further, innovative surface water management techniques, such as rainwater gardens, will be evaluated, based on drainage plans to determine the feasibility for installation at station locations. These facilities would provide additional water quality treatment, reduced runoff rates and enhanced vegetative diversity, where installed.

C. Special Concern Species

Correspondence with the US Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries in August 2001, July 2003 and again in July 2005 (Appendix A) indicate that the project will not affect any federal or state listed special concern species or colonial bird nesting sites, and no further consultation is required.