



Blenheim, Bennettsville, Clio, and McColl and along S.C. Route 9 and S.C. Route 177 N, north of Bennettsville. Projected development outside of the town limits would be clustered around the proposed interchanges with existing roadways and would occur predominantly in agricultural fields and the edges of forested patches (refer to Sections 3.14 and 3.15, pages 3-167 and 3-175, respectively). The projected development associated with the No-build Alternative would generally be close to I-95 and I-74, existing major routes at either end. Based on a review of aerial photography overlain with the projected development, it is anticipated that impacts to wildlife due to projected growth would be predominantly habitat degradation due to the proximity of the development to wildlife habitat and direct habitat loss instead of fragmentation. Table 3.57 provides a comparison of potential indirect impacts to wildlife habitat (habitat loss) associated with each Build Alternative based on the predictions of the land use models.

As shown in Table 3.57, Alternative 1 would have the least potential indirect wildlife habitat impacts followed by Alternative 3, and Alternative 2 would have the highest impact to wildlife habitat. The No-build Alternative represents the baseline conditions, and would impact approximately 67 acres less than the lowest Build Alternative (Alternative 2).

Table 3.57
Potential Indirect Wildlife Habitat Impacts in Acres

HABITAT TYPE	Build Alternatives			
	1	2 (Preferred)	3	No-build
Total Wetland Area	5.9	9.7	9.6	3.1
Total Forested Upland Area	117.0	211.3	181.9	52.7
TOTAL HABITAT IMPACT	122.9	221.0	191.5	55.8

Source: THE LPA GROUP INCORPORATED, 2007

Cumulative impacts to wildlife species could occur regardless of which Build Alternative (including the No-build) is selected as the Preferred Alternative Table 3.58, (refer to page 3-246) shows the amount of wildlife habitat that would cumulatively be impacted as a result of the Build and No-build Alternatives.

Cumulative impacts could occur to the black bear population in Horry County as the result of the construction of I-73 South. The Horry County population of black bears has the highest number of automobile/bear collisions according to data obtained from SCDNR. All 26 of the collisions within the I-73 South project study area have occurred south of Conway. Eight of these occurred along S.C. Route 22 and it is anticipated that increased traffic on this roadway due to the construction of



**Table 3.58
Potential Cumulative Wildlife Habitat Impacts in Acres**

HABITAT TYPE	Build Alternatives			
	1	2 (Preferred)	3	No-build
Total Wetland Area	176.7	127.1	119.1	3.1
Total Forested Upland Area	916.3	1,019.0	787.0	52.7
TOTAL HABITAT IMPACT	1,093	1,146.1	906.1	55.8

Source: THE LPA GROUP INCORPORATED, 2007

I-73 could increase the number of automobile/bear collisions. Additionally, as the area between Conway and the Atlantic Intracoastal Waterway continues to develop, bear habitat would be lost and/or fragmented, making the 10,000-acre Lewis Ocean Bay Heritage Preserve more important. Connections between Lewis Ocean Bay and the Waccamaw River, such as Sterrit Swamp and Tilly Swamp, become more important to avoid increased wildlife /vehicle collisions. The increased traffic on S.C. Route 22 may result in an increase in the number of collisions with other species, such as white-tailed deer and raccoons. Measures to minimize wildlife roadway mortality such as wildlife crossing culverts and warning signs for motorists are discussed above.

Impacts associated with the introduction and spread of nonnative invasive plant species could occur and cause degradation of wildlife habitat as a result of the proposed project. This is discussed in detail in Section 3.16.7, page 3-201. Management practices as described in Section 3.16.7 could reduce the likelihood of the spread of non-native invasive plant species along the Preferred Alternative.

Wildlife species require various habitats to meet their food and nesting needs. Wetlands and natural forested uplands provide the most valuable habitat within the project study area because of higher wildlife species diversity, while agricultural fields and managed pine plantations are generally less diverse. The diversity and abundance of wildlife associated with the various aquatic and terrestrial habitats within the project study area are localized due to habitat fragmentation as the result of historic and current agriculture practices within the project study area. The greatest concentrations of wildlife within the project study area are anticipated to be found along the forested riparian wetlands and forested uplands associated with the major streams. Wildlife species typically use these linear forested habitats not only as foraging areas but also as travel corridors throughout their home range. Migratory birds, such as the eastern kingbird, northern parula warbler, and prothonotary warblers rely on the mid-story of these forested riparian habitats as nesting and foraging areas as well.



Other projects in or in the vicinity of the project study area that have been constructed or are in the planning stages that could result in cumulative wildlife impacts such as wildlife habitat loss, habitat degradation, and fragmentation impacts include the following:

- past construction of approximately 17 miles of I-74 in North Carolina;
- past construction of approximately 28.5 miles of S.C. Route 22;
- seven miles of current road widening along S.C. Route 38 in Dillon County;
- three miles of future widening along S.C. Route 9/ S.C. Route 38 in Marlboro County;
- the future replacement of the S.C. Route 917 bridges over the Little Pee Dee River and its associated wetlands;
- the future construction of the 44-mile long portion of I-73 from I-95 to S.C. Route 22; and,
- the proposed 22-mile long Southern Evacuation Lifeline (SELL).



White-throated sparrow
Photo by Gordon Murphy



Purple finch
Photo by Gordon Murphy

The proposed new I-73 South bridges over the Little Pee Dee River and its adjacent wetlands would be longer than the existing bridges on S.C. Route 917. The replacement S.C. Route 917 bridges would be the same length as the I-73 South bridges, therefore, a net improvement of wildlife habitat and wildlife movement corridors would result.

3.16.8 What are migratory birds?

Migratory birds are those that fly long distances from their winter habitat to summer nesting grounds and back to their overwintering grounds annually. The *Migratory Bird Treaty Act* (MBTA) includes a list of the specific species of birds protected by the act and may be found in 50 C.F.R 10.13. The USFWS interpretation of migratory bird protection under the MBTA extends to structures and trees that are being actively used by migratory birds for nesting. It would therefore be illegal to destroy bird nests (including trees



Yellow-throated vireo
Photo by Gordon Murphy



with nests) that contain eggs or young or to cause an adult to abandon its nest due to disturbances from any sort of construction. However, it is not illegal to remove nests that do not contain eggs or young, nor is it illegal to prevent birds from nesting during or prior to the construction period.

Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires federal agencies to take actions to implement the MBTA. Primarily these actions are to evaluate agency actions on migratory birds and to identify impacts with a measurable negative effect on migratory birds populations. If such impacts are identified, then the federal agency must mitigate the effects and consult with the USFWS prior to initiating the action.

Migrations generally occur in the spring and fall. The I-73 project study area is within the Atlantic Flyway, which is the migration route along the eastern seaboard of the United States used by waterfowl and other birds. Some of these birds temporarily use habitats within the project study area as roosting and foraging habitat while on their way to more northern nesting or southern wintering grounds and are referred to as transients. They are using these areas to “stop over”. Fall transients include merlin (a falcon) and least sandpiper in marshes, and sharp-shinned hawk in woods. Least sandpipers also stop over in spring. For the majority of migrants however, the various habitats within the project study area are a destination, arriving to stay for the winter (overwinter) or to breed and nest in summer.

3.16.9 Which migratory birds potentially occur in the project study area?

Numerous migratory bird species can be found within the project study area. Examples of some of the more common species and when they are present are indicated in Table 3.59. Suitable bird habitat found within the study area is discussed in Section 3.19, page 3-223.

3.16.10 What potential impacts to migratory birds could result from I-73?

General threats to migratory bird species as a result of road construction include habitat loss, habitat degradation, and, to a lesser extent, habitat fragmentation. The construction of new roadways or the widening of existing ones can contribute directly or indirectly to these. Clearing forests for the construction of a new roadway results in a direct loss of habitat utilized by forest birds, however, open right-of-way and brushy habitat created along edge of the right-of-way creates nesting and foraging habitat utilized by species other than forest birds. Other direct impacts that could potentially occur to wildlife and birds are discussed in greater detail in Section 3.19.4, page 3-234.

The current widening of S.C. Route 38, the past construction of U.S. Route 74 and S.C. Route 22, and the future construction of the SELL project, S.C. Route 917 bridge replacements, the widening



Table 3.59
Migratory Bird Species Potentially Found Within the Project Study Area
Interstate 73: I-74 to I-95

HABITAT	WINTER RESIDENTS	SUMMER RESIDENTS
WATER RELATED (Marshes, Lakes, Rivers, Swamps, Bottomland Hardwoods, etc.)	American bittern Northern harrier Sora Common snipe Canada goose Mallard Gadwall Ring-necked duck Lesser scaup Bald eagle Green-winged teal Hooded merganser	Least bittern Purple gallinule Mississippi kite Acadian flycatcher Northern parula warbler, Prothonotary warbler Swainson's warbler Kentucky warbler Hooded warbler Belted kingfisher American anhinga Black crowned night heron
FORESTED (Mixed Woodlands, Pine Woodlands, etc.)	Yellow-bellied sapsucker Blue-headed vireo Brown creeper House wren Winter wren Golden-crowned kinglet Ruby-crowned kinglet Hermit thrush Fox sparrow White-throated sparrow Dark-eyed junco Purple finch Pine siskin Red-breasted nuthatch Yellow-rumped warbler	Yellow-billed cuckoo Chuck-will's-widow Ruby-throated hummingbird Eastern wood pewee Great crested flycatcher Yellow-throated vireo Red-eyed vireo Wood thrush Summer tanager Broad-winged hawk Blue-gray gnatcatcher Yellow-throated warbler Hooded warbler Kentucky warbler
OPEN (Roadsides, Hedgerows, Farmlands, Fallow Fields, etc.)	Cedar waxwing American pipit Grasshopper sparrow Song sparrow Swamp sparrow Savannah sparrow Baltimore oriole American goldfinch Evening grosbeak	Eastern kingbird Blue grosbeak Indigo bunting Orchard orioles Cattle egret Prairie warbler Yellow-breasted chat Rough-winged swallow

Source: Potter, E.F., J.F Parnell, and R.P. Teulings. 1980. *Birds of the Carolinas*. The University of North Carolina Press, Chapel Hill, NC. Peterson, R.T. 1980. *A Field Guide to the Birds of Eastern and Central North America*. Houghton Mifflin Company, Boston, MA.



of S.C. Route 9/S.C. Route 38, and I-73 South could also contribute to cumulative impacts to migratory bird habitat.

Cumulative impacts to migratory birds may also result from the construction of cell towers along new roadways such as SELL and I-73 North and South. Studies indicate that migratory birds frequently collide with lighted cell towers taller than 200 feet and their guy wires when flying at night and during inclement weather when visibility is hindered. It is generally accepted that the birds are attracted to the red warning lights more so than white strobe lights on the towers during periods of low visibility.¹³⁰ A review of the Federal Aviation Administration (FAA) GIS data layer for potential aircraft obstructions and the Federal Communication Commission (FCC) cell tower data layer indicates that there are 5 cell towers located within the I-73 North project study area, four of which are greater than 200 feet tall, all of these have red warning lights.

The average cell tower height in the I-73 North project study area is 285 feet. In the I-73 South project study area there are 23 cell towers, 17 of which are greater than 200 feet in height. The average height of cell towers in the I-73 South project study area is 279 feet. Of these 17 towers, 13 have red lights, three have strobe lights, and one is unknown. Currently there are 143 other structures such as television and radio towers that are 200 feet or greater in height within the I-73 North and South project study areas that could affect migratory birds. Measures recommended by the USFWS to minimize impacts to migratory birds due to cell towers include the following:

- Using existing structures instead of constructing new cell towers and design of new towers to accommodate multiple future antennas;
- Constructing towers less than 200 feet when possible; design new towers such that guy wires are not required;
- Clustering towers in areas outside migratory bird flight paths or in areas where fog and/or low cloud ceilings are common;
- Using the minimum number of lights as allowed by the FAA; use white strobe lights when possible; and,
- Removing towers that are no longer needed.

There is the potential for cell towers to be constructed along the Preferred Alternative especially in the more rural areas. However, there is no way to predict how tall the towers would be or how many would be erected. Other direct impacts that could potentially occur to wildlife and birds are discussed in greater detail in Section 3.16.4, page 3-240. Although cumulative impacts to migratory birds may occur as the result of the construction of I-73, the FHWA is not required to mitigate for these impacts.

¹³⁰ S.A. Gauthreaux and C.G. Belser, "The behavioral responses of migrating birds to different lighting systems on tall towers." *Remarks at 1st Conference of Avian Mortality at Communication Towers*, (Cornell University, Ithaca, NY August 1999).