

**South Carolina Department of Transportation and the United States  
Department of Agriculture, Partnering for Success in Migratory Bird Treaty  
Act Compliance: A Case Study**

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**ABSTRACT:** The South Carolina Department of Transportation (SCDOT) is responsible for maintaining over 8,400 bridges statewide and several species of migratory birds use these structures as nesting locations. These birds, including their nests and eggs, are protected under the Migratory Bird Treaty Act (MBTA). During a review of MBTA compliance in 2014, SCDOT concluded that they had no procedures in place to allow take to occur when active migratory bird nests were found within project limits. Project delays were the only management method available when active nests were found. SCDOT entered a Cooperative Service Agreement with USDA Wildlife Services (WS) in 2016 to address MBTA compliance on SCDOT projects. The agreement called for WS to manage migratory birds at bridge projects to prevent project delays. WS would repeatedly visit bridge projects, survey the bridges for nests, and remove the nests before they became active. Since 2016, WS has inspected 233 bridges and migratory birds were present at approximately 66% of those bridges with a total of 9,250 inactive nests being removed using a variety of methods. Since the partnership's inception, construction delays due to migratory birds have been completely avoided with an average cost per project of \$1,525. With the passage of a new motor fuel user fee in South Carolina, SCDOT plans to replace 465 bridges over the next 10 years. This increase in work will require continued development and implementation of the partnership to effectively meet the rapidly growing transportation needs while minimizing impacts to species protected under the MBTA.

**KEY WORDS:** Department of Transportation, Migratory Bird Treaty Act, USDA

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## INTRODUCTION

Migratory birds often nest on transportation assets such as bridges and in structures such as culverts and large pipes. The Migratory Bird Treaty Act (MBTA) states: “No person may take (kill), possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such bird except as may be permitted under the terms of a valid permit...” Under the MBTA it is also illegal to destroy an active migratory bird nest. An active nest is one that has eggs or chicks present or if there are young birds that remain dependent on the nest for survival. During a review of MBTA compliance in 2014, the South Carolina Department of Transportation (SCDOT) Environmental Compliance Division identified three concerns with their existing program. The first concern focused on active migratory bird nests found within project limits. There were no procedures in place to allow for “take” to occur. This ensured project delay as the only management method available when active nests were found. The second concern involved lack of specific internal guidance for inspection techniques. Each project had many variables as to what inspection techniques and species to be concerned about. Case by case review of each situation often ended in delays to the project. The third concern was that there was no data being collected to show what or where migratory birds were nesting.

To address these issues, SCDOT and the United States Department of Agriculture - Wildlife Services (WS) entered into a Cooperative Service Agreement to address wildlife issues on bridges. The partnership was proposed to provide four key benefits. First, the partnership would include the SCDOT creating standards for evaluating and identifying project concerns with MBTA compliance. Second, it would put inspection responsibilities on the WS staff that are

trained in MBTA issues and have equipment to survey any structure regardless of size or location. Third, the partnership would allow for use of Federal Migratory Bird Depredation permits and state permits WS already had, as a management tool, to ensure no project delay from active MBTA nest. Fourth, it would make use of WS existing relationships with USFWS Ecological Services and Enforcement to ensure the department is focusing on the species that are of importance to the regulators.

This partnership has led to WS biologists and specialists addressing migratory bird issues at bridges throughout the state. In addition to assisting SCDOT with hands-on management, WS also provides expertise and preventative measures to contractors that repair and replace bridges throughout the state on behalf of the SCDOT.

## Species Information

Barn swallows (*Hirundo rustica*) are one of the most abundant and widespread of the swallow species. The spring migration of barn swallows begins in mid-January and continues until mid-May (Brown and Brown 1999). Nests of barn swallows are often associated with man-made buildings and structures, such as bridges (Brown and Brown 1999). Eggs may be present in nests of barn swallows from May through mid-August with the peak presence of eggs occurring from mid-May through the end of June. Young may be present in barn swallow nests beginning in mid-May through mid-September with the peak occurring from early June through late August (Brown and Brown 1999).

Cliff swallows (*Petrochelidon pyrrhonota*) are the most colonial swallow in the world, regularly forming colonies of 200-1,000 nests (Brown and Brown 1995) and have been documented in this project to form colonies over 300 nests. The spring migration of cliff swallows begins in late January and

continues until the early part of June with the peak occurring from early-February through mid-May (Brown and Brown 1995). For cliff swallows, eggs can be present in nests from the beginning of April through the end of July with young possibly present from late April through late August (Brown and Brown 1995). The peak of egg laying for cliff swallows occurs from early May through mid-June with the peak presence of young in nests occurring from late May through mid-August (Brown and Brown 1995). Cliff swallow numbers probably increased dramatically beginning in the nineteenth century as they expanded into new breeding habitats such as bridges, buildings, and culverts.

The eastern phoebe (*Sayornis phoebe*) is a small passerine bird. The use of buildings and bridges for nest sites has allowed the eastern phoebe to tolerate the landscape changes made by humans and even expand its range (Sibley 2000). Unlike most birds, eastern phoebes often reuse nests in subsequent years and sometimes barn swallows use them in between. In turn, eastern phoebes may renovate and use old barn swallow nests themselves (Sibley 2000). For eastern phoebes, eggs can be present in nests throughout the spring and summer (Weeks 2011).

Other migratory species that can be found utilizing bridges in South Carolina are the tree swallow (*Tachycineta bicolor*), northern rough-winged swallow (*Stelgidopteryx serripennis*), bank swallow (*Riparia riparia*), carolina wren (*Thryothorus ludovicianus*) and house finch (*Haemorrhous mexicanus*). All five species nest from early spring through late summer. These birds are less likely to nest on manmade structures, such as bridges, but they are occasionally found using existing swallow nests from previous nesting seasons. Northern rough-winged swallows have also

been documented to use pipes (bridge scuppers) as a nesting location (Sibley 2000).

## METHODS

As discussed, migratory birds are routinely associated with transportation projects. Conflicts are most likely to occur during the nesting season when active nests (nests containing eggs or young) may be present. Adult birds are capable of leaving a project site when threatened by construction or maintenance activities, but eggs and flightless young are not. These early life stages of birds may be directly impacted by activities such as cleaning, painting, reconstructing, and demolishing bridges. In South Carolina, many of these activities occur concurrent with migratory bird nesting because of off-season weather constraints.

The initial step in this program was to develop guidelines when dealing with wildlife on bridges in South Carolina. The guidelines set forth five steps for successful MBTA compliance. First, the SCDOT will notify WS of any upcoming bridge maintenance or construction where wildlife could be an issue. Second, WS will inspect the bridge to identify any potential wildlife species utilizing the bridge and determine if further actions or inspections are needed. Third, if nesting activity will coincide with work on the bridge, develop a site-specific management plan that considers species, nesting process and duration, number of nests/birds, nest location, and the construction method/timeframe. The goals of the management plan should be to reduce the amount of take and mitigate wildlife impacts to bridges. Fourth, WS and SCDOT will implement a management plan that may include exclusion, harassment, habitat modification, change in timing of bridgework, removal of inactive nests, removal of active nests, and lethal removal of birds, or a combination of these methods. If take is part of the site specific plan, obtain all

appropriate permits. Lastly, WS and SCDOT will regularly communicate as to the progress of inspections and management actions.

Migratory birds were managed to alleviate construction delays at bridge sites where active nests could have caused construction activity to be impacted. Repeated inactive nest removal is arguably the most effective method of preventing the

take of migratory birds at bridges where some form of maintenance or demolition was planned during nesting season. Inactive nests were removed to avoid the take of migratory birds or eggs during a bridge project that would have ordinarily disturbed or destroyed an active nest.

## RESULTS

There were a total of 223 bridges surveyed in South Carolina during the 2017 and 2018 nesting seasons. These surveys were performed on bridges located throughout the state, with at least one bridge located within each of the 7 SCDOT engineering districts. The vast majority of bridges were surveyed on multiple occasions to repeatedly remove partial nests prior to the birds completing the nests and laying eggs. From 1 January 2017 through 30 September 2018, the 223 bridges surveyed received a total of 2,043 visits.

During the 2017 and 2018 nesting seasons, WS removed 9,250 inactive nests with only one recorded case of take of migratory birds or active nests. The take consisted of a single barn swallow nest with 3 eggs. In addition, there were no cases of project delays due to migratory bird activity at any of the 223 sites surveyed by WS. Of the 9,250 nest removals, 2,913 were inactive barn swallow nests at 117 bridge locations and 6,315 were inactive cliff swallow nests at 31 bridge locations. WS also removed 25 inactive nests from other migratory bird species including: tree swallow, bank swallow, northern rough-winged swallow, eastern phoebe, house finch, and Carolina wren. In total, WS removed migratory bird nests from 61% of the bridge locations

surveyed during the 2017 and 2018 nesting seasons.

Barn swallows were found at bridge sites throughout the state. As expected, the majority of cliff swallows were found in the western portion of South Carolina with two exceptions, Highway 701 over the Great Pee Dee River in Georgetown County and US 76 over the Wateree River in Sumter County.

Arrival of both cliff swallows and barn swallows occurred during mid-March for both the 2017 and 2018 nesting seasons. The migratory birds were first observed during bridge surveys on Highway 701 over the Great Pee Dee River in Georgetown County in both 2017 and 2018. Arrival occurred approximately two weeks before the predicted date of 1 April for the beginning of nesting season. (Brown and Brown, 1995). During the 2017 and 2018 seasons, departure of the migratory birds began in June with the latest documented sighting of a cliff swallow occurring on 23 August 2018 at US 76 over the Wateree River in Sumter County. The latest sighting of a barn swallow occurred at O'Hear Avenue over Noisette Creek in Charleston County on 29 August 2018. The last documented departure occurred approximately two weeks prior to the predicted date of 15 September for the end of the swallow nesting season (Brown and Brown, 1999).

## DISCUSSION

Over 81% of nest removals took place between March and June during the 2017 and

2018 seasons. Almost a third, 32%, of the nest removals occurred within the month of March alone. This percentage is a little

misleading in the sense that the birds had not yet arrived in great numbers. The majority of nest removals during March were actually nests from previous years that were removed from bridges on initial survey visits.

Removing old nests from previous nesting seasons prior to the arrival of the birds was extremely beneficial. Once the nests had been removed, WS employees could quickly survey a bridge and determine if birds had arrived by simply looking for new partial nests. Once these partial nests were located, they were removed and the bridge would then be surveyed as often as necessary to prevent nests from becoming active. Depending upon the number of birds and the proximity of nesting material, these surveys were needed as often as three times per week. In cases where WS employees were not able to remove old nests prior to the arrival of the birds, each nest had to be surveyed by inserting a camera to document whether it was active prior to the nest's removal. This was extremely time consuming and difficult work that raised the potential for take. Obtaining a list of bridges due to be worked on during nesting season was critical. The earlier the list of bridges could be obtained the better it was in avoiding the take of active nests.

On many bridges, WS surveyed the site and removed inactive nests prior to the arrival of the migratory birds. Once the nests were removed, WS instructed on-site personnel with SCDOT or a SCDOT contractor on how to identify and remove inactive nests and what steps to take if active nests were encountered. From this point forward it was the responsibility of the SCDOT contractor or SCDOT personnel to maintain removal of inactive nests to prevent nesting and the potential for violation of the MBTA. With the number of bridges receiving maintenance or construction it was

crucial that SCDOT contractors and SCDOT personnel assist in maintaining removal of inactive nests. This allowed WS to focus on bridges scheduled for maintenance during the nesting season where SCDOT contractors or SCDOT personnel had not begun work and therefore were not on site to consistently remove partially built inactive nests.

Occasionally, the birds completed a nest and laid eggs at a bridge during the construction process. This can occur when the nest is constructed in a well concealed area or when surveys to remove partial nests are not conducted on a routine basis. This occurred during the 2017 nesting season at the Gateway project in Greenville and threatened to impact the project schedule. WS employees were able to perform a survey within 24 hours of notification and by inserting cameras into the nests, document that the birds had not been harmed. This allowed construction to continue with no delays. Situations like this were expected and WS employees remained prepared to act on behalf of the SCDOT to keep the projects on schedule.

In addition to migratory birds, WS documented one case of big brown bats (*Eptesicus fuscus*) inhabiting abandoned cliff swallow nests. In this instance, the bats began to use the nests after the birds had successfully raised their young and left the nests.

## **MANAGEMENT IMPLICATIONS**

With an average cost of \$1,525 per construction project, 0 project delays, and only 1 instance of take, the partnership between SCDOT and WS has demonstrated that MBTA compliance on large and complex construction projects, like bridge construction, is possible. Similar programs could easily be implemented in other states interested in MBTA compliance.

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