

# INDOT BRIDGE INSPECTION MANUAL

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## PART 9

### ENVIROMENTAL CONCERNS

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### 9-1.0 BATS AND BIRDS

#### 9-0.01 Introduction

Some species of bats are listed as endangered or threatened under the federal Endangered Species Act, and many species of birds are protected under the Migratory Bird Treaty Act. Both federal laws prohibit actions that harm these animals. Bats and birds may use bridges for roosting or nesting, which means they could be harmed by construction activities. Inspectors must perform a preliminary screening for bats and cliff swallows as a part of each inspection for state-owned bridges.

#### 9-1.00 Habitat Detection

Some species of bird's nest under highway bridges on walls or beams, typically near waterways or reservoirs. In particular, inspectors should look for two types of swallow nests. Cliff swallow nests have a distinctive rounded top, as shown above in **Figure 9-1.1** and **Figure 9-1.2**. Cliff swallows are a colony nesting bird and there may be several to hundreds under one bridge.

Barn swallows do not nest in colonies. Their nests are generally found alone, and the shape is indistinct, as shown in **Figure 9-1.3**. Barn swallows are not tracked by the Indiana State Department of Natural Resources but are discussed here to highlight the differences between cliff swallows and barn swallows. Other bird nests, such as those of robins and warblers, may also be found and should be documented in the inspection.

Bats may roost in any dark, warm, quiet spot on a bridge, which makes them more difficult to see during an inspection as shown in **Figure 9-1.4**. Most bats in Indiana are very small, see **Figure 9-1.7** about the size of an adult's thumb, and some species prefer to wedge into small crevasses to roost as shown in **Figure 9-1.5**. Bats may leave signs of use, such as guano or staining, even if a structure is inspected during the bats' inactive season (mid-fall through mid-spring) or if the roosting bats themselves are not visible as seen in **Figure 9-1.6**. Droppings are usually small and mouse-like, brown, or black, and appear directly under the roost site. Urine stains are usually a few inches in size immediately below roosts and may have a strong odor. Stains from fur oil may also be visible at the entrance to cavity roosts. INDOT's Environmental Services Division has developed a short online tutorial about investigating structures for bats. This tutorial is available through INDOT University.

Take care not to touch any bats or expose yourself to danger. If bitten, call the Department of Health at 317-233-1325 and record the incident immediately. Few bats have rabies; however, it is a deadly virus. If bitten by a bat, you will need rabies post-exposure shots.

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In general, investigation of the structure should include the following:

1. Screen the entire structure for bird nests and provide photographs.
2. Look for roosting bats in sheltered features of the structure, including all protected joints, cracks, and small cavities.
3. Look for signs of bat use. Note the location of guano piles, urine stains, and fur stains.
4. Listen for squeaks or chirps and note location.
5. Photograph roosting bats, guano, urine, or fur stains.

### **9-2.00 Coding**

The presence of bats, birds, or signs of bat or bird use, are recorded in the inspection report. Follow the prompts in the fields on the inspection report data entry form and add photographs of what is found.

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**FIGURES**

*9-1.1 Cliff Swallow Nests*



*9-1.2 Cliff Swallow Colony*



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*9-1.3 Single Barn Swallow Nest*



*9-1.4 Bat Droppings*



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*9-1.5 Bats Roosting Along Crack and Associated Staining*



*9-1.6 Bat Guano on Riprap*



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*9-1.7 Bat*

