

# WisDOT Guidance for Structure Inspectors: Incidental Bat and Migratory Bird Usage of Transportation Structures

This document is intended as a quick reference for structure inspectors to better understand signs of bat and bird use on structures. This document is not a comprehensive guide for completing inspections for bat or migratory bird presence for regulatory purposes.

Incidental observations of bat and bird use should be documented in the bridge inspection report. Noting incidental observations of bat and bird use of structures can help designers and environmental coordinators prioritize regulatory bat/bird inspections and anticipate timing restrictions for improvement projects.

## Indicators of Bat Presence

The most used structure types for bat roosts include:

- Timber structures (although these structure types occur less often)
- Concrete arch structures
- Concrete girder structures
- Concrete box structures
- Steel structures

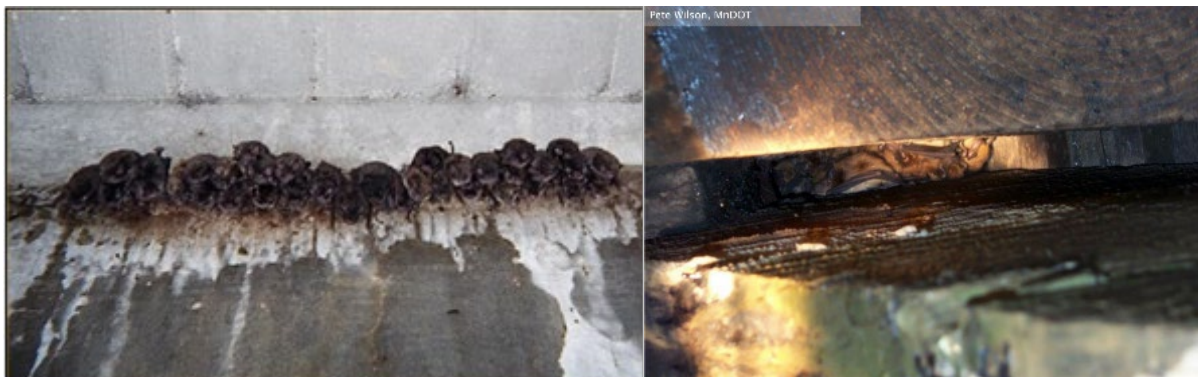
Additionally, structures that cross rivers have a higher utilization for bat roosts.

Indicators of bat presence are most identifiable during the bat's active season, from April to October. When looking for indicators of bats, inspect:

- Expansion joints
- Areas below joints
- Abutments
- Inside corners
- Beams
- Pier caps
- Other cracks and crevices

Indicators of bat presence are explained below and include example photos when applicable.

**Roosting bats:** Bats may be roosting in small cracks or cave-like areas of a bridge, such as between the bridge deck and end wall, or out in the open along the underdeck of a bridge. Shining a flashlight into crevices is a useful way to detect roosting bats.



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**Presence of Guano:** Guano, or bat droppings, may be found where bats commonly roost. It appears like brown/black pellets that accumulate on the ground as well as adhere to support beams and walls underneath bat roosts.



**Staining:** Light to dark brown stains from urine or body oils may appear wet and are usually found in dark places. The staining can dry to a whitish crust. Look for 4-6-inch-wide dark stains underneath where bats may be roosting. Guano stains almost always accompanies bat urine or body staining.

Staining from bats can be distinguished from water seeps, salt, asphalt leaching, or other structural deterioration mechanisms by the presence of guano. Guano may be stuck to the surface where the staining is or onto surfaces nearby. Look closely at suspected staining to search for intermixed guano.



**Audible observations:** Bats make high pitched squeaking or chirping when approached.

**Odor observations:** If there are enough bats present, guano deposits, especially in large amounts, have an ammonia odor that can be apparent in some situations.

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## Indicators of Migratory Bird Presence

The birds listed below may be found nesting underneath bridges or within culverts. Below are pictures of birds and their nests. Presence of nests or spotting birds is the primary indicator of bird usage of a bridge or culvert.

The nesting season in Wisconsin is depicted in the graphic to the right.



### Cliff Swallow



Commonly nest underneath bridges or within culverts.

Colonially nests in gourd-shaped mud nests, often below bridges or inside culverts.

### Barn Swallow



Commonly nest underneath bridges or within culverts.

Nests alone or in small groups in bowl-shaped mud nests, often found underneath bridges or on culvert walls.

In addition to the species listed above, there may be other, non-migratory and non-protected birds, like pigeons, present and/or nesting on the structures. Their presence can also be documented in the bridge inspection report.

### American Robin



Occasionally found nesting underneath bridges.

Bowl-shaped nest out of twigs and grasses in trees, gutters, eaves, and the underside of bridges.

### Eastern Phoebe



Occasionally found nesting underneath bridges.

Constructs large nests out of mud, moss, and leaves under eaves or ledges.