Migratory Bird Treaty Act Compliance Guidance

Avoidance and exclusion measures for migratory birds nesting on WisDOT structures.

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Wisconsin Department of Transportation
Bureau of Technical Services, Environmental Services Section

1.0 Introduction

1.1 Purpose

This document is intended as a reference tool to assist project teams with Migratory Bird Treaty Act (MBTA) compliance, particularly with regard to migratory bird nesting on bridges, culverts, and borrow pits. Bridges and culverts can be important nesting habitat for migratory birds in Wisconsin, especially considering nationwide declines in migratory bird populations and their habitats. Construction activities that disturb active nests or prevent birds from feeding their young are considered violations of the MBTA and are prohibited until the young birds have fledged (left the nest). This document provides a range of options to prevent birds from nesting on structures, thus avoiding unforeseen project delays. As there are limited options to remove birds once they have nested on a project site, such preventative measures are highly encouraged.

1.2 Types of Projects

- **Bridges and culverts:** Cliff Swallows and Barn Swallows commonly nest underneath bridges or within culverts. Eastern Phoebes and American Robins are also occasionally found nesting underneath bridges. Construction activities that affect the underside of a structure may disturb nesting migratory birds and require implementation of avoidance and exclusion measures. Construction activities that are limited to the surface of the structure, such as polymer overlays, are less likely to disturb nesting birds, and do not require implementation of avoidance or exclusion measures. Contact the Regional Environmental Coordinator (REC) for additional guidance.
- **Borrow pits and other cliff-like structures:** Rough-Winged Swallows and Bank Swallows can nest in burrows in the sheer, vertical faces. Migratory bird nesting in borrow pits is relatively uncommon but has occurred on WisDOT projects in the past. Nesting is more likely to occur in natural or naturalized cliff-like structures, such as sandstone bluff faces. Implementation of avoidance or exclusion methods may not be feasible, especially when nesting occurs in an active borrow pit on a construction project. Contact the REC for additional guidance.

The above represents the most common types of projects where migratory birds are encountered, but it is not an all-inclusive list. There may be other situations or projects where migratory birds could be a concern, such as building renovations or demolitions. Migratory birds may even nest on construction equipment, like cranes or barges, if left unattended for several days.

2.0 Regulatory Background

2.1 Migratory Bird Treaty Act

The MBTA protects native bird species in the United States and provides that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg of any such bird, unless authorized under a permit (16 U.S.C. 703). “Take” is defined as to attempt or successfully “pursue, hunt, shoot, wound, kill, trap, capture” (50 CFR 10.12).

The MBTA allows for certain exemptions, including species-specific hunting seasons (e.g. Pheasant or Grouse) and depredation permits. Certain nuisance and non-native species (e.g.

House Sparrows, European Starlings, feral Rock Pigeons, and Eurasian Collared Doves) are not protected by the MBTA. See 85 FR 21262 for a list. A list of the 2,100 species protected under the MTBA can be found in 50 CFR 10.13.

2.2 Other Avian Protection Laws

There are additional federal and state laws protecting birds that may nest on WisDOT structures. If nesting is observed, contact the REC as soon as possible. Resources to navigate compliance are below.

- **The Bald and Golden Eagle Protection Act** prohibits the take of Bald and Golden Eagles without a permit, including their parts, nests, and eggs. This encompasses activities that "result in a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior." To determine if your project will impact eagles, follow this U.S. Fish & Wildlife Service (USFWS) Step by Step Guide: https://www.fws.gov/midwest/eagle/permits/baeatake/index.html.
- **The Endangered Species Act** prohibits take of federally endangered and threatened species without a permit and requires that federal agencies consult with USFWS to ensure their actions are not likely to jeopardize the species' continued existence. If the project contains a federal nexus, Section 7 consultation may be required. If the project uses only state or local funds, then an incidental take permit under Section 10 from USFWS may be required. For more information: https://www.fws.gov/midwest/endangered/section7/index.html.
- **Wisconsin Statute 29.604** and **Wisconsin Administrative Natural Resource Rule 27 (NR 27)** are designed to protect species threatened with extinction in Wisconsin. State agencies and project proponents coordinate with the Wisconsin Department of Natural Resources (DNR) to review and authorize actions that may impact listed species.

3.0 Bird and Nest Guide

3.1 Cliff Swallow

Sources: Ryan Brady (left), Don DeBold (center), NPS (right)

Appearance: metallic blue above and gray below, with a short, square-tipped tail.
Behavior: feeds on swarming insects, usually high above the ground (>100ft).
Nest: colonially nests in gourd-shaped mud nests, often below bridges or inside culverts.
Egg: white, creamy, or pinkish, with brown speckles or blotches.

3.2 Barn Swallow

Sources: Ryan Brady (left), Shawn Carey (center), Lemon Bay Conservancy (right)

Appearance: metallic blue above and white or pale orange below, with a long and forked tail that may appear as a single point when held closed.
Behavior: swoops and dives near ground level.
Nest: nests alone or in small groups in bowl-shaped mud nests, often found underneath bridges or on culvert walls.
Egg: creamy or pinkish white, spotted with brown, lavender, and gray.

3.3 American Robin

Sources: Cornell University (left), Hawk Ridge (center), Mike's Birds (right)

Appearance: gray above, orange below, and a black head.
Behavior: swift, direct flight on rapidly beating wings.
Nest: builds a bowl-shaped nest out of twigs and grasses in trees, gutters, eaves, and the underside of bridges.
Egg: sky blue or blue-green and unmarked.

3.4 Eastern Phoebe

Sources: Princeton University (left), Flying Lessons (center), Evan Buck (right)

Appearance: brownish-white above and off-white below, with a dark head and square tail.
Behavior: perches low in trees or on fencelines, making short flights to capture insects and often returning to the same perch.
Nest: constructs large nests out of mud, moss, and leaves under eaves or ledges.
Egg: white, sometimes speckled with reddish brown.

3.5 Bank Swallow

Sources: Audubon (left), Jay McGowan (center), USFWS (right)

Appearance: brown above and white below, with a thick brown band across the chest. Relatively short pointed wings, and a slightly forked tail
Behavior: fluttery flight with periods of brief gliding. Frequently changes course to catch small insects.
Nest: nest in burrows in vertical surfaces, such cliff or bluff faces (natural or human made), including as borrow pits.
Egg: white.

3.6 Northern Rough-Winged Swallow

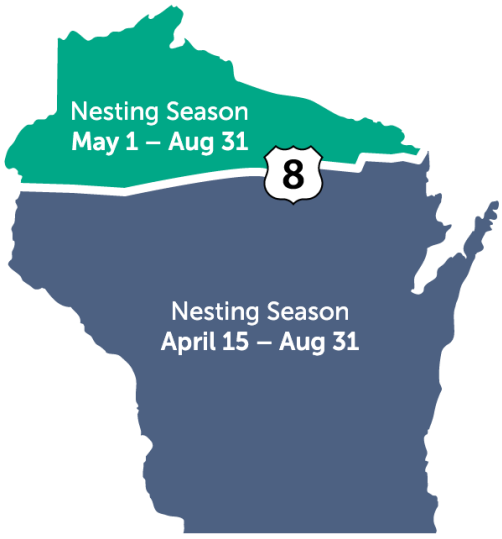
Sources: Cornell University (left, center), Jim Burns (right)

Appearance: small-bodied with relatively broad, pointed wings. Brown above and white below.
Behavior: harvests insects in midair while twisting and turning low above water bodies and open areas.
Nest: nests near water in burrows, such as cliff or bluff faces (natural or human made), including those in borrow pits.
Egg: white

4.0 Recommended Exclusion Options

4.1 Avoidance Windows (Bridges, Culverts, Borrow Pits)

The only certain way to avoid incidental take is to avoid construction activities during the nesting season. According to DNR, the start of the nesting season is April 15th south of U.S. highway 8 and May 1st north of U.S. highway 8 for the birds referenced in this guidance document. The nesting season ends on August 31st. Contractors bear no responsibility for conducting nesting surveys or installing deterrents for activities that occur outside the official nesting season.



The structure should be evaluated prior to construction to determine whether nesting migratory birds are likely to be impacted and, if so, which deterrents will be installed. The evaluation generally occurs the winter prior to construction and is included in the DNR Initial Review Letter.

4.2 Deterrents

The effectiveness of any deterrent method is dependent upon proper installation, maintenance, and monitoring. Netting and barriers should be checked regularly throughout the nesting

season to make sure they are firmly attached and remain undamaged, since improperly installed or maintained deterrents can lead to unwanted nesting and/or incidental take, as well as safety concerns to the travelling public.

Install deterrents or remove nests before the start of the nesting season. Deterrents can be removed after the nesting season ends or after construction is complete. If deterrents were not installed, construction cannot begin until all nests are unoccupied (i.e. there are no eggs or young birds in the nest), or until a Depredation permit has been authorized by USDA-APHIS and USFWS, as detailed in 5.0 Depredation Permit.

However, since deterrents are not practicable for use on borrow pits, observing the avoidance window is the only recommended exclusion option on these structures.

4.2.1 Exclusion Netting (Bridges and Culverts)

Exclusion netting is material either wrapped around or draped and fastened to bridge decks/abutments and culvert corners to prevent bird entry.

Materials: Polyethylene netting or galvanized wire mesh (hardware cloth) with either ½" x ½" or ¾" x ¾" openings. Mesh with larger openings increases the risk of entrapment, since it may allow birds to pass through and nest. However, mesh with smaller openings may provide a suitable rough surface for Swallow nesting and presents the risk of foot entrapment.

Installation (bridges): Remove empty nests prior to the beginning of the nesting season. Anchor lumber to bridge along perimeter of intended netting and fasten netting around the bridge abutments, underneath the bridge deck, and any other locations where birds could build their nests. The net should not have any loose pockets or wrinkles that could trap and entangle birds. Ensure the net is pulled taut in order to prevent flapping in the wind, which results in tangles or breakage at mounting points.

Left: properly installed bridge netting (netting.com)
Right: bird mortality from net entanglement (GDOT)

Installation (culverts): Remove empty nests prior to the beginning of the nesting season. Attach netting at a 45-degree angle at the culvert corner so it extends at least 12" below the corner. The net should not have any loose pockets or wrinkles that could trap and entangle birds. Ensure the net is pulled taut in order to prevent flapping in the wind, which results in tangles or breakage at mounting points.

Maintenance and monitoring requirements: Construction projects that have netting in place should be inspected every two weeks, as well as after large storm events or high winds. This monitoring will ensure that the netting is properly maintained, no gaps or holes have formed, and that the nets are functioning properly. Monitoring will also include removing all nesting attempts and releasing any entrapped birds. If a trapped bird is found, contact a DNR transportation liaison at: https://dnr.wi.gov/topic/Sectors/documents/transportation/Liaisons.pdf. Efforts should be made to release the bird unharmed and repair the netting to prevent birds from entering again.

Pros:

- Highly effective with low bird entanglement, if installed correctly and regularly maintained**.**
- Provides a flexible option for bridges or culverts that are not uniform along their entire length.
- Materials typically less expensive than commercial culvert corner slopes.

Properly installed culvert corner netting (TxDOT)

Cons:

- Can allow birds and other wildlife to enter and become entangled if installed improperly or is not frequently maintained. Netting is the only deterrence measure that, if it fails, will both delay projects and harm birds. (Other measures will allow birds to nest but will not cause harm.) *Do not use netting unless it is in an area that can be properly maintained.*
- Structure complexity/height can encumber installation.
- Installation can be very labor intensive.

4.22 Plastic Curtains (Bridges and Culverts)

Strips of plastic installed along the edge of vertical surfaces preferred for nesting.

Materials: Three-foot wide lengths of 6 mil minimum plastic sheeting with the lower 2 feet cut into vertical strips two inches wide.

Installation: Remove empty nests prior to the beginning of the nesting season. Staple plastic curtain strips to treated lumber and affix to the underside of the bridge deck or top of box culvert.

Maintenance and monitoring requirements: Construction projects that have curtains in place should be inspected every two weeks, as well as after large storm events or high winds. This monitoring will ensure that the curtains are properly maintained and functioning properly. Monitoring will also include removing all nesting attempts, ensuring there are no tears, holes, or

creases, and releasing any entrapped birds. If a bird is entrapped, contact a DNR transportation liaison at: https://dnr.wi.gov/topic/Sectors/documents/transportation/Liaisons.pdf.
Efforts should be made to release the bird unharmed and repair the netting to prevent birds from entering again.

Pros

- Minimally expensive material and labor costs
- Minimal maintenance (though plastic sheeting should be replaced if it becomes creased, since it could create a foothold for nest establishment).
- Able to withstand most culvert storm flows.
- Possible to permanently install a track or pipe to allow for easier curtain installation and removal.

Flexible strip curtains in a concrete box culvert (Tate 2010)

Cons

- Difficult to install on tall structures, especially over water.
- Potential for mud to be stuck to flaws in curtain or mounting system, providing an opportunity for birds to nest.

4.23 Corner Slopes (Bridges and Culverts)

Corner slopes cover the corners where migratory birds prefer to nest.

Materials: U.V. stabilized prefabricated PVC or polycarbonate corner slopes from commercial bird-deterrent manufacturers, or an approved equal.

Installation: Remove empty nests prior to the beginning of the nesting season. Attach corner slopes to the structure per the manufacturer's recommendations or using urethane-based adhesives. Install end caps or seal ends of corner slopes to prevent entry of birds or other animals.

Properly installed corner slopes on a box culvert (GDOT)

Maintenance and monitoring: Construction projects that have corner slopes in place should be inspected every two weeks, as well as after large storm events or high winds. This monitoring will ensure that corner slopes are properly maintained and functioning properly. Monitoring will also include removing all nesting attempts, ensuring there are no cracks or holes, and releasing any entrapped birds. If a bird is entrapped, contact a DNR transportation liaison at: https://dnr.wi.gov/topic/Sectors/documents/transportation/Liaisons.pdf.
Efforts should be made to release the bird unharmed and repair the netting to prevent birds from entering again.

Pros

- Require little maintenance, though periodic inspection is recommended.
- Good longevity (several years) and effectiveness with minimum need for repair if properly installed.

Cons

- Removal can be difficult.

4.3 Nest Removal (Bridges, Culverts, Borrow Pits)

Nest removal involves the removal and disposal of unoccupied or partially constructed nests without eggs or nestlings. Eastern Phoebes, Cliff Swallows, and Barn Swallows all demonstrate high site fidelity and will reuse old nests, so removing nests will eliminate a visual cue for a potential breeding location, especially for first-time breeders. Removing all evidence of nesting (e.g. cleaning droppings from structures) does not prevent nest establishment, but it can delay the process.

Nests can be removed in a number of ways, including scraping or pressure washing, but this can prove labor-intensive for large structures.

Pros:

- Relatively inexpensive
- Can delay nesting to provide time for other measures to be put in place
- May be compatible with bridge cleaning or other maintenance activities

Cons:

- Effective only when used in addition to other methods.
- Must be out in the field every two days to remove newly-built nests before eggs are laid.
- Nest removal can be impractical for tall structures or those over water.

5.0 DEPREDATION PERMIT

As a matter of last resort, project teams may obtain a depredation permit, which is granted by USFWS to authorize the take of birds under the MBTA for otherwise lawful activities. However, these permits are only to be used when public safety is involved or methods to prevent nesting cannot be implemented. All efforts should be made in project planning, timing, and site preparation to avoid conditions requiring a depredation permit.

5.1 Permit Application Steps

1. Application for the permit should be initiated with the Regional Environmental Coordinator and/or the appropriate U.S. Department of Agriculture-Wildlife Services (USDA-WS) district office.
2. Obtain an application form and the information sheet that will provide guidance in completing the application from USFWS's website (https://www.fws.gov/forms/3-200-13.pdf). Return the completed application to the USDA-WS office, with a copy to the REC.
3. The USDA-WS will do an evaluation for USFWS and then submit the application with the evaluation to USFWS for permit review.

4. USFWS Division of Migratory Birds will review the permit application and either issue or deny the permit. They may also apply specific conditions to the permit after coordination with the applicant. Contact your Regional Environmental Coordinator with any questions.

6.0 NON-RECOMMENDED OPTIONS

The following options are not recommended for use for a variety of reasons, such as maintenance challenges, potential environmental liability, or ineffectiveness. However, alternative options may be used with approval from WisDOT's ecologist and DNR's endangered resource liaison.

Plastic strip doors (culverts): overlapping strips of flexible plastic covering the entire culvert opening, resembling the strip doors of walk-in freezers. Strip doors complicate culvert maintenance by presenting an obstacle to entry and exit of workers, machinery, and materials.

Lubricants (bridges, culverts): substances that, once applied, make structures too slick for mud nests to stick. However, they require frequent re-application and most substances are environmentally untested, which poses potential liability concerns.

Chemical deterrents (bridges, culverts, borrow pits): a wide variety of substances such as predator scents and methyl anthranilate that repel birds from structures. However, they also require frequent re-application and most are environmentally untested, which poses potential liability concerns.

Slick sheeting/paint (bridges, culverts): high density polyethylene or Teflon renders surface too slick for mud nests to stick. However, PE sheeting is often not slick enough and Teflon presents long-term PFAS liability. Birds may also nest in unexpected locations to avoid sheeting or paint.

Bioacoustics (alarm and/or distress calls) and **visual deterrents** (predator decoys and reflective surfaces) are only effective when used in conjunction with other methods, as birds will develop a tolerance.

7.0 RESOURCES

Standardized Special Provisions (STSP): https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/stsp.aspx

MBTA Brochure: https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/environment/habitat-evaluation.aspx