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USDA APHIS Wildlife Services Bridging the Migratory Bird Gap for ODOT

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ABSTRACT: More than 300 migratory bird species in Oregon have the potential to nest in highway rights-of-way or on bridges. Because these species are protected under the Migratory Bird Treaty Act (MBTA) and there are no incidental take permits, Oregon Department of Transportation (ODOT) projects may be impeded by nesting birds. In 2006, ODOT contacted USDA Wildlife Services to assist with MBTA compliance. This paper describes the unique nature of the inter-governmental agreement and the success it has brought both agencies.

KEY WORDS: birds, bridges, Migratory Bird Treaty Act, *Plecotus townsendii*, swallows, wildlife management

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THE “GAP”

The Migratory Bird Treaty Act (MBTA) was established in 1918 to prevent birds from being used in commercial trade, an activity that was contributing significantly to the population decline of many native bird species. During the early years of the 20th century, there were only 3,000 miles of paved roads in the country (Ingle 2003) and women’s wardrobes included large hats that displayed a variety of avian accessories including feathers, wings, and even whole birds (Doughty 1975). The MBTA was created to prevent such wasteful take of birds and was successful in achieving its goals. Today this law, mostly unchanged, often serves as a handicap for organizations working on projects that serve the public good. Transportation departments, for example, are often at risk of MBTA non-compliance when birds nest on transportation structures and in the rights-of-way and conflict with road construction and maintenance activities.

The MBTA prohibits pursuing, hunting, taking, capturing, or killing any migratory bird, or any part, feather, nest, or egg of 836 bird species without a United States Fish and Wildlife Service (USFWS) authorized permit. The MBTA has no provision for incidental take and it is a ‘strict liability law,’ meaning that anyone can be convicted under the statute even if they unknowingly or unintentionally violate the act. Violations of the MBTA constitute a misdemeanor or a felony depending on the situation, and imprisonment and fines may be imposed. When potential MBTA violations involve transportation, projects may be suspended.

During the summer of 2000, one unfortunate state transportation department experienced a significant project delay when bridge demolition was halted due to concern about an MBTA violation. The bridge replacement project required that the old bridge be torn down and replaced with a newer bridge; however, the old bridge was occupied by active swallow nests. The demolition work was reported to USFWS, and USFWS indicated that enforcement action would be taken if swallows were killed by the project. Consequently, work was halted on the bridge for 3 months until the swallows

fledged, and the work delay cost the project an additional \$90,000 (Noble 2007).

THE “BRIDGE”

U. S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (WS) is a congressionally-authorized federal agency whose mission is to provide leadership in managing problems involving wildlife. Traditionally, WS helped cooperators with livestock, crop, and natural resource protection, but the Agency’s role ultimately expanded to incorporate wildlife disease management, airport wildlife hazard management, and homeowner assistance with property damage caused by wildlife. Partnerships with public sectors such as state and federal agencies are now common.

WS is a full participant in the MBTA permitting process and provides USFWS with data and recommendations for issuance of bird depredation permits. WS also has a federal responsibility to help resolve migratory bird conflicts upon request, and USFWS relies on WS for damage assessments on which to base bird damage management recommendations (USDA APHIS WS 2006). The authority for WS to conduct migratory bird damage management derives from permits issued by USFWS under 50 CFR 21.41 (USFWS 2005).

WS implements integrated wildlife conflict management including technical assistance, direct management assistance, and research. This combination of applied science and management skills makes WS particularly equipped to handle complex and unique wildlife challenges. Typical strategies implemented by WS for bird management includes live traps, spike wire, and netting, but particular situations may restrict or eliminate the feasibility or effectiveness of these methods. When standard management practices are not viable options, WS biologists and specialists are encouraged to locate or develop new control methods.

Oregon Department of Transportation (ODOT) began working with WS in 2006 to help the agency minimize the risk of unlawful bird take while still maintaining its mission to provide a safe and efficient transportation system. ODOT requested WS to manage birds on

transportation projects that involved bridges, roadways, shoulders, and vegetation in rights-of-way. Because of the complexity of the projects and the more than 300 bird species that have the potential to nest in Oregon (Marshall et al. 2003), the scope of work tasked to Oregon WS by ODOT was complex and challenging, and it required the unique application of both new and traditional avian control methods.

The primary goal of ODOT's working relationship with WS is to prevent birds from nesting in project areas using non-lethal harassment and thereby avoid take. Swallows nesting on bridges is a significant management concern for ODOT. WS initially remove old nests to prevent birds from returning to and re-occupying former nests. But keeping birds from building new nests in the same locations requires diligence and ingenuity. Bridge characteristics such as height, design, and location over roads, water, or railroads limit personnel access and makes harassment logistically difficult.

WS initially netted bridges with plastic mesh to prevent swallows from accessing nest sites. After netting several bridges, WS observed a number of problems. The complexity of the bridge structure (e.g., size and design) often made it difficult to secure netting over every area a bird might access. Overlapped netting, unsecured holes, and stretched netting allowed birds to circumvent the netting. Once, WS was called to assist when a contractor installed exclusionary netting but it failed because it was undersized and poorly secured. In another instance, vandals cut the nets' securing cables and the entire net system fell from the bridge. Because of these and other issues, the original notion that only a single visit to each bridge for netting installation would be necessary rapidly turned into regular visits to keep the nets secure and swallow-free. Overall, the expense of the netting process and complications that accompanied it forced WS to abandon netting on most bridge projects.

Once bridge netting was abandoned, WS began conducting regular surveys during nesting season to remove nests in the process of being constructed. WS specialists stationed throughout Oregon receive training on the methods available to remove inactive nests and discourage further nesting. The specialists conduct site visits to each project 1 to 3 times per week, depending on the intensity of bird use, to prevent active nesting. After several weeks of consistent harassment, swallows normally cease building at that location. This method of surveying bridges and removing inactive nests has proven to be the most cost effective approach to managing swallows on ODOT bridges.

Finding the most appropriate tools to remove swallow nests from bridges was largely a process of trial and error. Initially, WS used long metal extension poles. Although the poles were effective, they required great strength and control by the specialist, particularly when several poles were fitted together to reach long distances. Electric lines and traffic under bridges also raised safety concerns.

To eliminate the problems associated with the use of extension poles and to reach nests located higher on bridges than poles could reach, WS began using paintball guns. The paintball learning curve was steep. For best performance, paintballs need to have a narrow

temperature range, low humidity, and no wind. It is best to have a gun barrel that is snug to the diameter of the paintball, but there is considerable variability among paintball brands. Paintballs have a life span of approximately 3 months for optimal accuracy, which made ordering the proper number of balls based on projected estimates a challenge. Additionally, local discount stores could not be relied upon for paintball purchases, because their paintball inventory often was old and resulted in misshaped balls with decreased utility. Originally WS used colored paintballs, but the colored paint was troublesome for ODOT when historic bridges were involved. Many historic bridges are revered for their age, design, and famous designer, Conde McCullough. The colored paint marks were also an attractant for gang "tagging."

To alleviate concerns about colored paint, WS specialists began using clear paintballs. Although more expensive, shooting accuracy and shot distance increased. Additionally, WS specialists noted that nesting attempts by birds decreased on the bridge areas where clear paint was used. Clear paintballs were considered a noteworthy success until the following year when a change in the formula resulted in multiple shipments of broken paintballs. Subsequently, WS had to ensure that paintballs with the original formula were purchased and received.

The bird management tools discussed above were appropriate for most ODOT projects for 3 years. In 2009, however, several projects required more innovative techniques. In the first project, numerous pelagic cormorants (*Phalacrocorax pelagicus*) nested on ledges under a large metal span bridge that required painting. Paintballs were ineffective at dislodging the seaweed nests, and the sheer number and location of nests made the use of poles prohibitive in the small working space on the catwalks. The cormorants also returned repeatedly, despite the diligent efforts WS specialists to remove nesting material. Consequently, WS experimented with several new methods to deter nesting. Mylar strips, reflective plates, and a predator caller were not effective. However, two paper kites, one in the shape of a bald eagle and the other shaped like a peregrine falcon, showed promise. The lifelike appearance, movement of the kites, and the noise they produced in the wind seemed effective in deterring the cormorants from nesting at the site. The eagle kite was particularly effective. Regrettably, both kites eventually were blown away in coastal 50-mph winds. To make the kites sturdier, WS applied lamination to them, but this coating diminished the sound and 3-D efficacy, and they didn't deter the birds as effectively. Nylon kites shaped like fighter jets only worked for a limited time. WS eventually settled on replacing the eagle kites as needed, and no bird take was incurred during the project.

Another difficult project was the Astoria-Megler bridge in Astoria, Oregon. This large bridge crosses the Columbia River into Washington State at the mouth of the Pacific Ocean. Swallows were nesting under the bridge in crevices approximately 3 inches wide. To reach these nests, WS specialists shot paintballs from 40 feet below the bridge in a boat in treacherous conditions. The

average deepwater significant wave heights ranged from 4.6 feet to 9.8 feet (Tillotsen and Komar 1997). To minimize supply expenses and exposure time on the river, WS obtained a high-pressure water cannon with a small-diameter nozzle to remove the nests more quickly and safely.

Birds aren't the only animals that inhabit bridges. WS has excluded bats in 4 box beam bridges scheduled for demolition. One of these bridges contained a potential maternal colony of 30-plus Townsend's big-eared bats (*Plecotus townsendii*), a state-listed sensitive species, which would be destroyed if left in the bridge during demolition. After consulting with Oregon Department of Fish and Wildlife, ODOT requested that WS exclude the bats prior to birthing. WS contacted Bat Conservation International to ensure that proper techniques were employed to successfully exclude all of the bats. WS specialists used one-way valves and metal screens to sequentially exclude the bats from each bridge section. Some sections that could not be accessed internally were reached with an ODOT Snooper crane. Finally, as the bridge was being demolished, a WS biologist entered sections that were not previously available to inspect, but none of those sections appeared to be used by bats.

CONCLUSION

Both ODOT and WS have benefited from their inter-governmental collaboration. Through WS, ODOT is protected from the legal consequences of unpermitted incidental "take" and potential project delays due to nesting birds. WS has developed a significant working relationship with ODOT, explored new bird management techniques, and evaluated bird nesting patterns to help determine the likelihood of nesting on future projects. Both agencies have worked outside the "proverbial" box, compared with their sister agencies in other states, and through hard work and collaboration they have made this partnership a success.

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