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BIRD NESTS ON TOWERS: REACHING COEXISTENCE

“We’re on site but there’s a nest on the tower. What do we do?”

Structure owners are all too familiar with this news. Rosenberg et al. (2019) documented an increase of 15 million birds of prey since 1970. That combined with increased education and awareness in the telecommunications industry has led to increased reporting of nests on towers. Nesting adult birds can be potentially dangerous to tower workers. Laws protect most native species of birds from take (e.g. killing, injury, or actions that cause nest failure or nest abandonment) and some from disturbance. Does work at the tower site have to stop? Not necessarily. A common misunderstanding is that you cannot legally climb a tower that has an active nest. You CAN, but you must take the right steps to stay within the law and protect the wildlife that share the structure. Based on the site-specific considerations and scope of work, tower work may be able to continue, provided tower workers follow practices to minimize the risk of nest abandonment and injury to the birds on towers. Ideally, towers are designed in a way that prevents bird nests in areas that workers may need to access. In some cases, tower workers can prevent future bird nesting attempts by installing nest exclusion devices (NEDs). The use of NEDs may ensure year-round access to towers and equipment ultimately saving time and money. Many times, these devices do not work as intended, but depending upon the site can have benefits.

The authors of this paper seek to share knowledge and resources that may be considered by someone facing an issue with birds. However, it must be understood that this paper is written in the current federal regulatory environment and is dated as such. Additional state or local regulations may exist. Many of the principles will continue to exist; however, the application of them may have to be adjusted. The authors also recognize and strongly support that many structure owners have very specific requirements for management of wildlife and these are contractual. This paper is NOT intended to supersede these requirements but rather to create dialog based upon experience and the current environment. Above all, the authors encourage an open and honest dialog with regulators when there are issues with wildlife and a need to support the telecommunications infrastructure.

DEFINITIONS

Active (In Use) Nest– Generally, a nest with viable eggs or nestlings present. However, the definition may vary depending on federal law, State, and species. For example, osprey nests in some states are only described as “active” if eggs or nestlings are present and in other states are active if an adult bird is building and maintaining an empty nest.

Fledged – Any nestling that has left the nest under its own volition. These young commonly return to the nest in the days or weeks after leaving the nest; however, they are no longer considered nestlings.

Inactive (Not In Use) Nest– Any nest that has no adults, viable eggs, or young birds present. However, the definition may vary depending on federal law, State, and species. In particular, adults tending nests without eggs or nestlings are considered active in some states and inactive in others.

Protected Species – Bird species that are referenced within the Endangered Species Act (ESA; List of Endangered and Threatened Wildlife - 50 CFR 17.11), Migratory Bird Treaty Act (MBTA; List of Migratory Birds - 50 CFR 10.13), and Bald and Golden Eagle Protection Act (Eagle Act; bald eagles and golden eagles) and other state or local regulations.

Removal and Relocation– Nest removal is destroying the nest or making the nest otherwise unusable, such as obstructing the nest. Nest relocation is moving the nest from its original substrate to a new substrate, such as from a tower to a nest platform. Federal and state permits may be required if the nest is active and, in some cases, if the nest is inactive. Requirements for state permits vary by state and by bird species. It is important to check with state natural resource agencies before removing or relocating nests.

Taking/Take – “Take” is defined by the USFWS as “to pursue, attempt to hunt, shoot, wound, kill, trap, capture, or collect.” Take includes the killing or injury of adult birds. It also includes the death or injury of viable eggs or nestlings as well as nest abandonment or nest failure. For the nest structure itself, “collect” applies to taking the nest structure. The MBTA also requires authorization to be in possession of nests, eggs, or birds. Under the MBTA, the USFWS does not consider destruction of a bird nest alone (without birds or eggs) to constitute take, provided that no possession occurs during the destruction. However, other regulations may protect the nest, e.g., ESA, Eagle Act, or state regulations.

HISTORY AND CURRENT STATUS OF LEGAL PROTECTION OF BIRDS AND THEIR NESTS

Since the 1970s many species of birds of prey (raptors) have rebounded, including bald eagles and osprey, which are the most common protected nesters on communications towers. Both species experienced extreme population declines in the 1960-70’s from the use of DDT, other pollutants, as well as habitat loss, lead poisoning, and illegal shooting. Laws (see inset) such as the Clean Water Act, ESA, MBTA, and the Eagle Act, together with the Environmental Protection Agency’s ban on DDT, improved water quality, reduced pollution, and brought about the recovery of these and other species. The MBTA, protects more than 1,100 bird species including the osprey and other raptors. A List of Migratory Birds can be found at 50 CFR 10.13. Some of those species are protected by additional federal laws. Bald eagles and golden eagles are protected by the Eagle Act. Some species and subspecies are also protected by the ESA. A List of Endangered and Threatened Wildlife can be found at 50 CFR 17.11. The MBTA prohibits the take of migratory birds, including the death or injury of viable eggs or nestlings, the take of active nests, and activities that result in nest abandonment or nest failure. The Eagle Act further prohibits the take of inactive nests and the disturbance of nesting bald eagles and golden eagles. The ESA also prohibits the harassment or harm of ESA listed birds. In most states

many birds are also protected by state wildlife laws that may place requirements above and beyond the federal requirements.

The MBTA and Eagle Act does not prohibit the flushing of birds, provided nest abandonment or nest failure does not occur. Entering the nesting area can result in birds leaving their nests, exposing eggs and young to weather and predators. To avoid prohibited activities, site acquisition staff, subcontractors, and field coordinators can work with state and federal biologists to understand the laws, policies, and guidelines. The structure owner can also put in place requirements that may exceed the state/federal requirements. It is important that all who work in the communications industry are aware of not only the laws but the requirements of the structure owners and the end users who also may have specific requirements that go above the legal requirements. Construction activities affecting bird nests do not go unnoticed. State and federal biologists as well as neighbors and local bird watchers regularly observe nests and may notify wildlife agencies when work occurs near nests. None of the reputable tower owners, end users, or contractors want to violate the rules that are in place to protect these birds.

HOW CAN TOWER WORK CONTINUE WITH A BIRD NEST PRESENT ON OR IN THE VICINITY OF THE STRUCTURE?

To answer this there are some things that must be understood and communicated:

- **How is the ‘vicinity of the structure’ defined?** This definition varies based on the bird species and individual bird tolerance to human activity and can be impacted by the scope of work. It is critical to have a relationship with the local representatives from the USFWS to understand the requirements. The following should be communicated during the conversation:
 1. Is it possible to conduct work before eggs are laid or after nestlings fledge? If not, why is the work needed and how urgent is it?
 - Urgent work that is needed to ensure human health and safety may be appropriate even if active nests are present. Maintenance work should be delayed until after nestlings fledge or conducted before eggs are laid. The network is off the air and provides essential coverage. The issue is a jumper at 100’ with the nest at 160’. This is different than the situation where there are some alarms at 160’, but the system is still working.
 2. How will the work being done potentially impact and/or change the behavior of the bird?
 - Birds are more likely to be impacted if work occurs above or next to an active nest. Birds are less likely to be impacted if work occurs below an active nest or when the nest is inactive. For the first example above, a person would be working on the tower well below the birds and another would be on the ground. However, the second example would require someone working at the height of the nest.
 3. How will agitation and/or changes in behavior of the bird be monitored?

- Trained observers can monitor birds to determine if work is causing birds to be agitated. Routine maintenance work can occur provided birds are not agitated. Risks need to be evaluated if birds are agitated and work is for health or safety purposes. Consider:
 - Can work stop if the monitor of the birds observes increased agitation?
 - Can the work be completed in phases if the bird becomes agitated?
- 4. Additional information as may be requested by USFWS.
- **Before initiating construction or maintenance activities on towers with nests it is critical to contact the state natural resource protection agency and the USFWS regional office for permits, recommendations, and requirements.** If work must occur near an active nest, the USFWS may recommend a Depredation permit or an Eagle Nest Take permit. Depredation permits often take months to obtain, so it is important to coordinate early. Eagle Nest Take permit processing times depend on whether you are eligible for a general permit (instant issuance) or a specific permit (multiple months to process). Depending on the bird species, and the jurisdiction/state as well as the structure owner's requirements in which the nest is located a permit and/or on-site presence of trained staff may also be required for the removal of inactive nests, especially eagle nests. Permits may require a site visit and monitoring from a qualified biologist. Remember, communication is key. The USFWS needs to understand the issue clearly and then can provide proper insight. They will work with you if you work with them.
- **Some structure owners have policies and protocols for addressing bird nests on tower facilities.** Structure owners should be consulted to maintain consistency with policies and to avoid conflicts. In fact, failure to do so can be a breach of the contract with the structure owner. **Scheduling tower construction and maintenance activities for outside of the nesting season is one of the best ways to avoid the need for permits.** Generally, restrictions on tower activities are less stringent during the nonbreeding season. Information for Planning and Consultation (<https://ecos.fws.gov/ipac/>), Avian Knowledge Network (<http://avianknowledge.net/>) as well as state agencies and the USFWS can provide information on nesting timing specific to the tower area. Early planning provides companies with a firm operating window, and agencies with review and permitting time thereby increasing the likelihood of a successful project.
- **The following suggested steps can be used to identify a bird nest and determine if it is active:**
 1. At the time of the site visit, **or ideally before a crew is deployed to the site**, evaluate each structure (and adjacent areas if possible) to determine if nests are present. Often birds can be seen in or near active nests. In some situations, their nesting behavior will be obvious due to the presence of breeding adults, adult vocalizations and defensive flights, or the presence of nestlings. In other situations, determining nest status may be more difficult.

2. When nests are present it is helpful to document species observed in the area (see inset), nest locations, whether nests are actively used by birds, and determine if the nest physically impedes tower work.

a. Some birds can be difficult to see in the nest as they incubate eggs and brood young while sitting very low in the nest with only a head or tail visible above the nest. Other indicators of nesting may be downy feathers, large amounts of white bird droppings on the sticks on the nest, fresh, green branches on the nest, bones or food items on the ground below a nest, or nestlings in the nest. If no adult or juvenile bird activity is observed after watching the nest for 2-3 days at varying times of the day during the breeding season, it can be safely assumed that the nest is inactive. Bald Eagles and Golden Eagles receive additional protection under the Eagle Act. According to the Eagle Act, eagle nests are either “in-use” or “alternate nests”. Regardless of activity status, eagle nests are protected by the Eagle Act. Permits are required to remove, alter, or damage.

b. Unmanned Aerial Vehicles (UAVs) or “drones” flown near the tower may observe the status of a nest. Care should be taken to ensure the parent birds or hatchlings are not disturbed by the presence of the UAV. A buffer zone of at least 300’ should be maintained until the determination can be made. If eggs or hatchlings are present, the UAV must be removed immediately. If parent birds are agitated and/or appear to take an aggressive stance, the drone must be landed immediately to prevent injury to the bird and the UAV. Ospreys, Bald Eagles and other raptors often attack and down drones. This can damage the drone and injure the bird.

NOTE: Effective consultation with the structure owner, end user, and engagement of the USFWS can eliminate issues for all involved. Know your scope of work and seek input.

- **If the nest is determined to be inactive then the following guidelines apply as of the publish date of this paper:**
 - a. Work can proceed, as necessary. Eagle nests are protected by the Eagle Act year-round and should not be modified, moved, removed, or damaged during work.
 - b. If nest removal is desired, contact the USFWS regional office or the state wildlife agency to determine if the nest can be removed without a permit. Always work within the requirements of the structure owner and end user’s requirements.
 - c. If nest relocation is desired, contact the USFWS regional office or the state wildlife agency to determine if the nest can be relocated and what permits would be required to do so. Inactive osprey nests, for example, may be removed without a permit in most cases, but osprey tend to return and rebuild in the same location. Removing the nest may be a daunting and futile effort in the long run unless a nest exclusion device is used. If construction of an alternate nesting platform is planned, then it is recommended to be constructed prior to removing the original nest. The state or USFWS can provide guidelines on platform location and construction. If possible, nests should be removed intact and fastened to new nesting platforms. Once nest relocation is completed, work may be

performed at the site. The state or USFWS may ask to be present and notified no less than 48 hours prior to moving a nest.

- d. If it is belatedly determined that the nest is active, work should be stopped immediately and only resumed in accordance with the established guidelines above. If it is a Bald Eagle or Golden Eagle nest, contact USFWS immediately.
- **The following suggested steps can be used to streamline the process of tower work if bird nests are active:**
 1. The first step is to be aware of the tower owner and end user's requirements
 2. The next step is to identify the species using a tower. If the species does not pose additional requirements work can proceed. If the species of the bird cannot be identified the best practice is to assume that it is a protected species. Most native birds are protected. It is important that this be a definitive identification. Engage a qualified biologist if necessary.
 3. If the nest is determined to be active with a protected species, it is recommended that USFWS be consulted prior to moving forward with any work on site. There are many considerations that go into creating a safe work environment for the active nest. Work near the nest should be avoided between the time the nestlings are hatched until about two weeks post fledging. In general, the stage of the nest is important. Eggs and young birds can be injured by both heat and cold. In some situations, a continuous block of disturbance time is better than repeated short visits that fail to allow the parents to return to the nest. Work should be limited when the fledglings are fully mobile but have not yet vacated the nest, as they may fall or jump off the nest. If a bird (adult or chick) is injured during the proposed work, the company responsible for the injury should consider paying the cost of the vet bills, rehabilitation and release. Overall, the goal is to reduce impacts to birds. If work is necessary near an active nest construction personnel may proceed as follows:
 - a) Construction or repair activity that does not involve climbing a tower or working on a building rooftop and does not have the potential to affect the normal behavior of the bird(s) (e.g., work inside an existing shelter, groundwork below a tower that does not involve heavy equipment or loud noises) may proceed normally without any special permits. The Eagle Act prohibits disturbance of eagles (see inset) and the USFWS should be contacted to determine if the activity has the potential to impact nesting eagles.
 - b) If the required construction activities involve climbing a tower or working on a building rooftop and could affect the bird's normal behavior, the bird species should be considered. USFWS permits are likely required for eagle nests and the nests of species protected by the ESA (see inset). State permits may be required for species not protected by the ESA and the Eagle Act. When in doubt contact the USFWS and the state wildlife agencies. Tower crews always have the option to schedule activities when the nest is inactive, after the young have fledged.

- c) If the construction or repair involves climbing the tower or working on a building rooftop but has little or no potential to affect the bird's normal behavior, tower work may proceed considering the safety of the birds and after verifying that the state and USFWS allows those planned activities (with or without supervision and/or permit).
4. To prevent injury and potential violations, the well-being of the birds will be best served by consulting with the state or USFWS to determine the safest time of the day to access nest areas or areas of the structure that may present an issue for the birds. Generally, nestlings are more resilient to weather as they mature but it is important to schedule work to avoid weather extremes of hot, cold, or wet. Avoid the heat of the day and potentially sensitive early morning and late evening nesting periods (based on local climate). Consult with the state or USFWS if your work needs to deviate from the agency guidance.
- a. If a permit has been issued, it is important to follow permit conditions and agency guidance on the duration of time spent at the nest site and on the tower. Consult with the state or USFWS if your work needs to deviate from the agency guidance.
 - b. Regardless of whether a permit was required for the work, continued observation of the nest and adult birds is recommended to assure the work does not "agitate" the birds or cause them to leave for an extended amount of time. Generally, work should be halted after two hours if the adult bird has left and not returned to the nest. If possible, assign trained biologists with avian behavior experience to monitor the nest and document observations in the field during the tower work.
5. If a nest presents a potential fire hazard or other safety hazard (e.g., obstructing tower marking and lighting, prevents necessary repairs to marking and lighting FAA Notice to Airman (NOTAM), etc.), nest removal should be pursued based on appropriate timing recommendations from the USFWS. Prior to nest removal, the USFWS and appropriate state agency must be contacted for needed permits. Some nests, such as eagle nests, are protected year-round; however, that is not the case with the nests of all bird species (see inset). Permitting agencies may require a copy of the permit(s) kept on site during construction. Before nests are removed, it may be helpful to hold a coordination meeting among the field coordinator, subcontractor, and regional manager. Nest removal may be challenging as they can be quite large and heavy. Individual sticks should be treated as instructed by the permit, which may include that the material is taken off site or chipped to prevent their being used in future nesting attempts.

Planning and good communication within the tower worker staff as well as with state agencies and the USFWS will help keep projects on schedule and in compliance.

CAN BIRD NESTING ON TOWERS AND OTHER CONFLICTS BE PREVENTED?

Nest exclusion devices are available for communications towers with a variety of designs, attachment methods, and success rates. Online searches and communications with state natural resource protection agencies may provide current information on the most effective products based on the location and type of birds. Some structure owners install nest exclusion devices on newly constructed towers before raptors select the towers for nest sites. Preemptive nest exclusion can reduce tower maintenance challenges, especially in areas where ospreys and bald eagles frequently use towers for nesting. It's important to make sure nest exclusion devices do not block FAA obstruction lighting or conflict with the dissipation of static charges from lightning and weather phenomenon. Some structure owners also provide alternative nesting platforms near or on towers with nests in an effort to move the raptor activity to more convenient or safer locations. However, raptors are loyal to previous nest sites and may take a while to deter from nesting in an undesirable location.

Raptors, as well as smaller birds, can suffer fatalities when they collide with tower guy wires. In many situations bird flight diverters have been shown to reduce collisions with utility wires (https://wireless.fcc.gov/migratory-birds/Migratory_Birds_fact_sheet.pdf) and may also reduce collisions with tower guy wires, however their effectiveness varies. Installation of bird flight diverters is often most cost effective during the initial construction of the tower. Areas with high concentrations of birds or rare species of birds, or with a known recurrence of collisions, are the most critical locations to consider the installation of bird flight diverters on tower guy wires.

Raptors that nest or perch on towers can become entangled in antenna cabling. Minimizing excess wires, securely attaching wires to the tower structure, and shrink wrapping or taping wires together to reduce the number of small spaces for raptors to insert wings, heads, or feet can lower the risk of entanglement. If a tower operator becomes aware of an entanglement or potential entanglement, they should immediately contact the state natural resource protection agency or the USFWS. Some raptors can also become entangled in twine or other string/rope that is brought to the nest by adults. Although this is not necessarily problem caused by the tower owner, if tower maintenance staff have an opportunity to remove such material from the tower and area under the tower they should do so. Care should be taken to retain the nest structure integrity if the nest is to be left in place for future breeding attempts.

CONCLUSION

As the number of bird nests on communications towers continues to rise, remember that tower work can often continue provided you take the right steps to stay within the law. Best management practices exist to help minimize and avoid risk to workers and the birds on towers. The USFWS seeks to support people in understanding how to work in and around environments with protected species. With a bit of planning and effective communication, coexistence is possible.

In conclusion, the authors of this paper have different roles and responsibilities in the industry and government. Collaboration on this paper does not reflect an intention to change or dilute current regulations or standards. Instead, the authors intend to show mutual respect for each other's roles and responsibilities and to aid the readers' understanding that through respectful and proper communication, site-based issues can be addressed thereby meeting the needs of the people who rely on the service. It is our sincere hope that this paper will aid those women and men who are working to enhance communications networks by: dispelling some myths, increasing mutual respect among natural resource professionals and the tower professionals, and improving communication and understanding without unnecessary red tape.

Appendix

Additional Information

ADDITIONAL INFORMATION

New Jersey Department of Fish and Wildlife. 2013. Guidelines that support the maintenance of raptor nests at communications towers in New Jersey.

https://www.nj.gov/dep/fgw/ensp/pdf/tower_maint_guidelines.pdf (accessed 3/5/2020).

Poole, A. F., R. O. Bierregaard, and M. S. Martell. 2002. Osprey (*Pandion haliaetus*). In *The Birds of North America*, No. 683 (A. Poole and F. Gill, eds.). The Birds of North America Online, Ithaca, New York.

U.S. Fish and Wildlife Service. 2021. Bald Eagle Fact Sheet.

<https://www.fws.gov/media/bald-eagle-fact-sheet#:~:text=A%20large%20raptor%2C%20the%20bald,obtained%20by%20the%20sixth%20year.> (accessed 10/21/24).

U.S. Fish and Wildlife Service. 2022. Incidental Take Beneficial Practices: Communication Towers.

<https://www.fws.gov/story/incidental-take-beneficial-practices-communication-towers-how> (accessed 10/21/24).

U.S. Fish and Wildlife Service. 2021. Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning.

<https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation>. (accessed 10/21/24).

REGULATIONS AND PERMITTING

The **Migratory Bird Treaty Act** (MBTA) prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the U.S. Fish and Wildlife Service.

The **Bald and Golden Eagle Act** (Eagle Act) prohibits anyone, without a permit issued by the U.S. Fish and Wildlife Service, from taking bald or golden eagles, including their parts, nests, or eggs.

The **Endangered Species Act** (ESA) provides a framework to conserve and protect endangered and threatened species and their habitats.

Activity	MBTA	Eagle Act	ESA
Intentional take	Permit available	Permit available	Permit available
Incidental take	enforcement discretion	Permit available	Permit available
Disturbance	Not prohibited	Permit available	Permit available

Inactive nest	Not protected, but permit required for possession	Protected	Protected
Habitat	Not protected	Protected	Protected

The **Airborne Hunting Act** prohibits disturbance of wildlife by aircraft, including drones. In essence, if the drone is going to observe the birds or nest, there must be no disturbance, and observation via a good camera system may mean the drone needs to be ~ 150 meters out. If the drone is being flown to check the equipment, the drone is allowed to fly over the tower.

<https://fws.gov/program/migratory-birds>

[https://www.fws.gov/law/migratory-bird-treaty-act-1918#:~:text=The%20Migratory%20Bird%20Treaty%20Act%20\(MBTA\)%20prohibits%20the%20take%20\(U.S.%20Fish%20and%20Wildlife%20Service.](https://www.fws.gov/law/migratory-bird-treaty-act-1918#:~:text=The%20Migratory%20Bird%20Treaty%20Act%20(MBTA)%20prohibits%20the%20take%20(U.S.%20Fish%20and%20Wildlife%20Service.)

COMMON SPECIES IDENTIFICATION

Below are the most common species identified on telecommunicates sites. For photos, audio files, range maps, and other information on these and other bird species, refer to All About Birds (<https://www.allaboutbirds.org/news/>)

Bald Eagles are relatively large birds. The adults have a brown body, white head, white tail, and a yellow beak. Before age five, most Bald Eagles are brown with mottled white on their head, tail, body, and wings.

California Condors are the largest birds in North America. Their excellent soaring abilities allow them to travel long distances to feed on animal carcasses. Pairs nest in caves on cliff faces. In the 1980s the population fell to 22 captive birds, but there are now about 275 free-flying birds in California, Utah, Arizona, and Baja California with more than 160 in captivity. Lead poisoning remains a major threat to their survival.

Golden Eagles are one of the largest birds in North America. Adult Golden Eagles are dark brown with golden highlights on the back of the neck. Young birds have distinct white patches on the underside of their wings and at the base of their tail. The white patches are most clearly observed while golden eagles are flying.

Ospreys have a white belly, chest, head, and underwings. The upper sides of their wings and their back are dark brown, with a dark brown patch on the undersides of their wrists. They have brown stripes on both sides of their head.

Red-tailed Hawks typically have a dark brown back with a white bib and a streaked belly, chest, and undersides of their wings. The tail of an adult appears very pale cinnamon from below and dark cinnamon from above. The tail of a young bird is brown and stripped.

QUICK REFERENCE

- Non-eagle nest of unknown status or that may have eggs: monitor for activity to determine status before taking action
- Non-eagle nest known to lack eggs: can remove without federal permit but may need state permit
- Non-eagle nest suspected or known to have eggs: federal permit needed and possibly state permit
- Suspected or known eagle nest with or without activity or eggs: federal permit needed and possibly state permit

AUTHORSHIP CONTRIBUTIONS

TIF recognizes the following individuals who volunteered their time and expertise to the development of this TIF White Paper. Without their dedication and commitment to the furtherance of greater understanding within the telecommunications industry, this TIF White Paper would not have been possible. The individuals listed below made substantial contributions to the conception, design, research, and ultimate creation of this TIF White Paper and were critically important to its intellectual and technical content.

- Richard Hickey
- Scott Kisting

FEEDBACK:

TIF wants your feedback! If you have any questions concerning this TIF White Paper, have suggestions on how to enhance or expand upon this TIF White Paper, or would simply like to share how this TIF White Paper has impacted you, please visit our website [TIF Feedback](#) and leave a note for our Board of Directors.