

MANAGING URBAN VULTURES IN PROXIMITY TO HUMANS

Photo by John MTSOfan on Flickr

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INTRODUCTION

Black vultures and turkey vultures have expanded in range and number in recent decades (Buckley et al., 2022; Kirk & Mossman, 2020). Although conflicts between humans and vultures are not a new occurrence, as human populations and urban spread also increase, there are bound to be new areas of overlap and new conflicts that develop (Kluever et al., 2020). While some of the conflict stems from misconceptions about these birds, other areas of conflict are caused by vultures destroying property or endangering human health and safety (Kluever et al., 2020).

In some situations, conflicts between humans and vultures require some form of management to minimize the impact of birds who are becoming a nuisance. When developing plans to manage nuisance wildlife, it is important to remember these animals play an important role in our ecosystem. Management strategies for native wildlife should work towards coexistence, not elimination. While there can be situations where lethal action is necessary, other effective non-lethal actions can often be taken to improve the existence between humans and vultures.

This guide is designed to provide managers in urban environments with information to safely and legally address vulture conflicts with or in proximity to schools, homes, and other man-made structures. This guide does not address airport-related issues associated with vultures, including the potential for aircraft collision, as



Figure 1. Turkey vulture (left) and black vulture (right) by Christopher Sanders.

those issues are typically handled by full-time wildlife damage management personnel. In this guide, we will review regulations associated with vulture management and provide scientific information so that managers can select the best strategies for their individual situations.

IDENTIFICATION

There are two species of vulture native to Texas: the black vulture (*Coragyps atratus*) (Fig. 1, right) and the turkey vulture (*Cathartes aura*) (Fig. 1, left). Both species of vulture are large-bodied birds with bare skin on their heads and necks. The turkey vulture is the slightly larger of the two and has a red head. They have brown feathers, and the underside of their wings are two-toned with a lighter half and a darker half. Black vultures have a gray-black head and black feathers all over, except for the underside of their wing tips, where they have white patches.

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GENERAL ECOLOGY

Around the world, there are 23 different species of vulture. The United States (U.S.) is home to three of those species: the California condor, the turkey vulture, and the black vulture. The California Condor (*Gymnogyps californianus*) is a critically endangered species of vulture found primarily in southern California and pockets of nearby states, including Nevada, Arizona, and Utah. Turkey vultures and black vultures both have robust populations and expansive ranges and are of “least concern” from a conservation perspective (Buckley et al., 2022; Kirk & Mossman, 2020). Turkey vultures are a migratory species whose range can extend to southern Canada during the breeding season all the way down to the southern portions of South America (Kirk & Mossman, 2020). In milder climates, such as states surrounding the Gulf of Mexico, turkey vultures are also considered resident, meaning they stay in one area year-round and do not migrate. Black vultures are typically more of a resident species, but they do migrate short distances near the upper portions of their range. In recent years, their range has expanded, and they can now be found in northeastern portions of the U.S. to down throughout South America (Buckley et al., 2022).

Vultures are obligate scavengers, which means that their diet is made up primarily of carrion. Carrion can include dead mammals, birds, and even dead fish if they are close enough to the shoreline (Buckley et al., 2022; Kirk & Mossman, 2020). In urban and suburban areas, vultures also explore human trash and refuse for additional feeding opportunities (Grilli et al., 2019). All vultures found in the Western Hemisphere have weaker feet than those in the Eastern Hemisphere and are, therefore, unable to move large carrion, leading them to congregate to feed wherever the food source occurs (Kirk & Mossman, 2020).

As obligate scavengers, vultures have adaptations to assist them in locating and consuming carrion. Both turkey vultures and black vultures have broad wings that allow them to soar on warm air thermals to search for food. Turkey vultures have a highly developed sense of smell which allows them to locate carrion that may not be visually detectable in habitats such as woodlands or brush country (Byrne et al., 2019; Kirk & Mossman, 2020). Black vultures rely on their highly developed eyesight to find dead animals or to locate other scavengers who are already feeding. In areas where turkey and black vulture populations overlap, the differences in detection strategies often allow turkey vultures to locate carcasses first (Buckley et al., 2022). Black vultures benefit from sharing the location of a feeding opportunity within their species (Rabenold, 1987). If a flock of feeding black vultures becomes too

large or aggressive, the turkey vultures will typically abandon that carcass (Kirk & Mossman, 2020).

Vultures play a very important role in the environment by removing carrion that could potentially spread disease to humans and wildlife (Grilli et al., 2019). In areas where avian scavenger populations are dwindling, the decomposition of carcasses requires more time (Markandya et al., 2008). During that time, mammalian scavengers such as wild dogs and rats have a greater opportunity to feed on carrion which can increase the spread of diseases (Markandya et al., 2008). If vultures were not in the equation, there would be a high economic cost for humans to collect, transport, and properly dispose of all the carrion that vultures currently remove for free (Grilli et al., 2019).



Figure 2. Turkey vultures.
Photo by Christopher Sanders

CONSERVATION STATUS AND REGULATIONS PROTECTING VULTURES

In the late 1800s and early 1900s, many wildlife species were hunted for commercial gain, causing population declines and even some extinctions among native wildlife. The Lacey Act of 1900 ended the commercial trade of wildlife occurring within the U.S., but migratory species that traveled outside the country were still unprotected (Tomeček & Frank, 2019). In 1918, an international treaty was established between the U.S., Canada, Mexico, Japan, and the USSR (now Russia), agreeing to end the commercial trade of birds that migrated between these countries (Tomeček & Frank, 2019). In response to the treaty, the U.S. passed the [Migratory Bird Treaty Act of 1918](#) (MBTA) to enforce this treaty within its borders (Tomeček & Frank, 2019).

Both turkey vultures and black vultures are protected by the MBTA. While these species are not currently listed as a species of conservation concern, they have experienced population threats in the past. Due to inaccurate concerns about their potential to spread disease, vultures were trapped, shot, and poisoned well into the 20th century.

Today, the MBTA protects both vulture species, as well as many other bird species, from any form of “take.” The MBTA defines take as any action that can be considered an attempt to pursue, capture, hunt, kill, or sell a protected bird (Tomeček & Frank, 2019). The definition of take does not include harassment, which is an important tool for managing protected birds that are causing damage. If lethal action is deemed necessary as part of a management plan concerning a bird protected by the MBTA, a federal Migratory Bird Depredation Permit must be granted before any action can be taken.

WHEN TO ACT

While vultures do not present any direct threats to humans, there are situations where management actions might be necessary. Some of the areas of reoccurring conflict in urban environments include property damage to buildings and vehicles and unsanitary conditions caused by defecation (Avery & Lowney, 2016; Kluever et al., 2020).

Although these issues do exist, it is important to remember that vultures are a native species that play an important role in the environment. By removing animal carcasses from the landscape, vultures help to minimize unsanitary conditions that could contribute to the spread of diseases (Markandya et al., 2008). Like all native wildlife, the ultimate goal of vulture management is coexistence, recognizing that coexistence requires work. Property owners and managers must decide for themselves what level of coexistence they can tolerate and manage the situation accordingly.



Figure 3. Black vultures on a roof.
Photo by MTSofan on Flickr

MANAGEMENT APPROACH

An Integrated Wildlife Damage Management (IWDM) approach is recommended when developing a management strategy for coexisting with wildlife that may be causing damage issues. This simply means that a variety of management tools are used to improve the overall success of management efforts. There are a variety of tools available for legally managing vultures. Conflicts between humans and vultures can take on a variety of forms, and not all of these tools will be applicable in every situation. In an IWDM approach, the manager must select the combination of tools that make the most sense for their specific situation.

Due to local laws and city ordinances, lethal action is rarely a viable option for a private citizen in an urban setting. In some situations, permits can be acquired to allow lethal action as a component of an IWDM plan. The permit will only be granted if it is a part of an existing management plan with other non-lethal management efforts. Some of these options are outlined below.

CULTURAL MANAGEMENT

Depending on the levels of damage encountered, there are adjustments people can make to minimize the potential for conflict with vultures. These practices are most effective when implemented prior to vultures establishing in an area but can also be an important part of managing the issue once it is established.



Figure 4. Vultures eating roadkill.
Photo by Phil Hauck

Removal of food sources

Regular access to carcasses and carrion could attract vultures to an area (Fig. 4). If the source of carrion is frequent roadkill on a nearby public road, consult with the Texas Parks and Wildlife Department or Texas Department of Transportation for permission to remove or relocate it. Human garbage can also become a food source for vultures, so it is important to make sure that trash is properly disposed of and inaccessible to vultures whenever possible (Avery & Lowney, 2016; Buckley et al., 2022).

Habitat management

Look for natural and artificial structures that may provide perching and roosting locations for vultures. While vultures spend much of their foraging time soaring, easily accessible roosting and perching locations can attract them to an area. When possible, remove perching structures such as large dead trees. If structures cannot be removed (buildings, powerlines, etc.), consider the additional options below to make the structures less enticing.

EXCLUSION DEVICES

In situations where vulture conflicts are related to a specific building or structure, exclusion devices might be a good option for keeping vultures away from the structure in question. There are many avian exclusion devices on the market, but the following have been tested to ensure that they are effective for vultures (Wildlife Services Florida, 2017).



Figure 5. Bird spikes to deter avian perching.
Photo by Mikayla Killam.

Bird spikes

Physical barriers can help keep vultures from roosting on structures surrounding human habitations (Fig. 5). There are a variety of prefabricated spikes that can be purchased to deter perching at a specific location (Wildlife Services Florida, 2017). For maximum effectiveness, select an option where spikes are sharp and tightly placed so that vultures cannot land between them (Avery & Lowney, 2016). They should also be short and resistant to bending, or vultures will be able to adjust the spikes so that the area is useable as a perch (Avery & Lowney, 2016).

Invisible barriers

Where structures allow, barriers can also be created by running a taut monofilament line or wire directly above the structure that vultures are perching on (for example, above the railing of a deck). This exclusion method is not readily visible to humans but will make a narrow structure, such as a fence or railing, inaccessible.

Rollers

Rolling aluminum tubes can be installed along narrow structures that could potentially be used as a roosting site (Avery & Lowney, 2016; Wildlife Services Florida, 2017). When a vulture attempts to land or climb over the tubes, the added weight causes the tubes to roll, making it impossible for vultures to roost on them (Avery & Lowney, 2016).



Figure 6. Electric perch deterrents are available in a variety of colors so that they can be inconspicuous when installed on potential perches.
Photo by Mikayla Killam

There are prefabricated systems that will allow a manager to run an electrified tape around the perimeter of a structure that will briefly and safely shock any bird attempting to perch (Fig. 6; Wildlife Services Florida, 2017). This option is only recommended in areas where potential perches are inaccessible to people who could accidentally come in contact with the device. Additionally, since this device is not vulture-specific, care must be taken to ensure that the provider is reputable and that the device will not injure vultures or any other birds attempting to use the area.

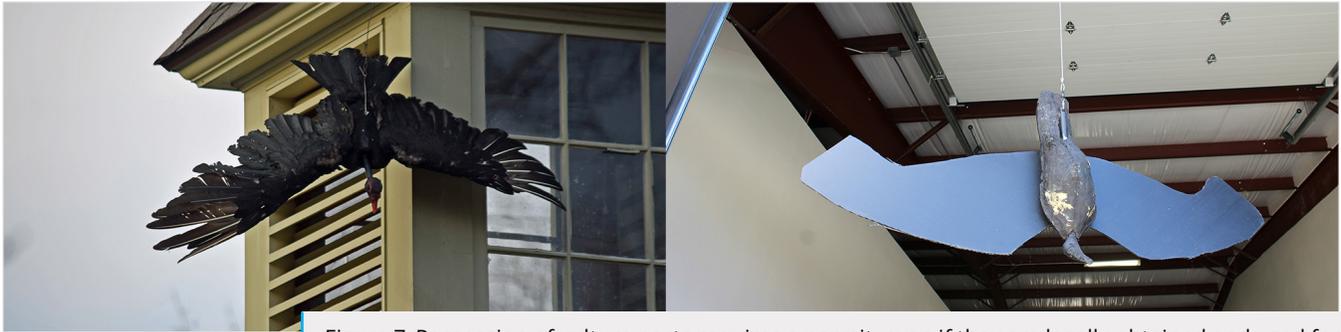


Figure 7. Possession of vulture parts requires a permit, even if they are legally obtained and used for management. Artificial effigies are available for purchase or home construction.
 Photo by MTSOfan on Flickr and Mikayla Killam, respectively.

HARASSMENT TECHNIQUES

Even though these birds are protected under the MBTA, a permit is not required to use aversive conditioning to scare away or harass a vulture as long as the bird, its nest, and its eggs are not harmed in the process. If harassment causes a protected bird to abandon an active nest with eggs or hatchlings, then it would still be considered harming the bird. If there are eggs or young birds still in the nest, harassment methods should not be implemented. Additionally, a permit would be required for harassment methods if the bird in question was an eagle or other species federally listed as a threatened or endangered species. Some of the more common harassment strategies are listed below. Again, vultures are a protected species, so any selected strategies must not harm the bird.

Effigies

In vulture harassment, an effigy consists of an actual or artificial dead vulture hung in an area to scare away other vultures (Fig. 7). Due to the intelligence and wariness of this species, they will avoid the area for some time. Effigies work best when used directly in areas where vultures roost (spend the night) (Avery & Lowney, 2016). In areas outside of the roost where vultures gather to socialize or pass the time, often known as loafing areas, effigies may be less effective but may be used to enhance other forms of harassment.

It is important to note that since vultures are protected, a Migratory Bird Depredation Permit is required to use dead or taxidermically prepared vultures as effigies (Avery & Lowney, 2016). If an individual does not have a permit, there are a variety of artificial effigies available for purchase online, other avian decoys can be painted to look like vultures (goose decoys or turkey wings). While similar structures can be constructed from household items (trash bags or tarps with a metal hanger), it is important to note that realistic effigies tend to be the most effective long term.

Once an effigy has been purchased or created, it should be hung upside down in a highly visible area where it can swing and move freely (Avery & Lowney, 2016). If the effigy will be visible to the public, it is important to include signage explaining the device and practice so that people do not think that there is an animal in distress or illegal activity (Avery & Lowney, 2016). Vultures can eventually become desensitized to this harassment, so it should only be used for a limited period and then removed until needed again.



Figure 8. An example of a hand-held laser.
 Photo by Mikayla Killam.

Laser lights

Lasers are an excellent option for avian roost harassment because they do not harm the birds, the potential for disturbing neighbors is minimal, and they are most effective in low light when birds are typically roosting (Fig. 8; Avery & Lowney, 2016). The use of lasers has proven most effective in the low light of dawn and dusk (Avery & Lowney, 2016). Vultures are less likely to be dispersed by a laser during full darkness (Avery & Lowney, 2016).

It is important to follow all safety recommendations associated with your selected laser model, including but not limited to:

- ▶ Always point the laser in a safe direction and not at people, homes, or vehicles.
- ▶ When pointing the laser, know your target and what is behind your target.
- ▶ Do not aim the laser at a reflective surface, including mirrors, mirrored surfaces, or windows.
- ▶ Do not use lasers near airports or point them at aircraft.

If you select an automated laser or light system, ensure that the laser uses a random pattern so that birds do not become accustomed to it.



Figure 9. A new model of inflatable scare devices currently under testing for effectiveness as a vulture deterrent. Photo by USDA APHIS Wildlife Services, Betsy Evans.

Inflatable “scarecrows”

Artificial devices used to make an area look like humans are present have come a long way from historic scarecrows. Today, there are inflatable options that sway back and forth with no discernable pattern (Wildlife Services Florida, 2017). These can be an excellent tool for scaring vultures away from a small area (Fig. 9).

Pyrotechnics

Pyrotechnic noisemakers can be an effective avian harassment device (Fig. 10). The most commonly used pyrotechnics are cartridges launched from a handheld launcher or specially designed shells discharged from a 12-gauge, single-barrel, single-shot, break-action shotgun. Once fired, they either make a screamer sound as they travel or explode with a loud bang, depending



Figure 10. Unloaded pyrotechnic launcher. Photo by Mikayla Killam.

on the type used (Avery & Lowney, 2016). Bear in mind that municipal sound ordinances and firearm laws must be considered when planning their use. Additionally, basic firearm safety should be used when handling these devices, as even non-lethal loads propelled by gunpowder can cause injury or death by accident. Never point these at any living thing or flammable/explosive substance. In most areas, a permit is required for this kind of harassment within city limits. Depending on the type of pyrotechnics, additional permits from the U.S. Bureau of Alcohol, Tobacco, and Firearms may also be required (Avery & Lowney, 2016). Regardless of permit requirements, proper authorities should always be notified in advance to avoid any misunderstandings related to the sound or appearance of the pyrotechnics. Managers should ensure that whatever pyrotechnics they select do not operate on a regular interval that the birds can learn and predict. Successful use of sound deterrents relies on startling the birds, and therefore, a random timing pattern should be used.

LETHAL ACTION

In some cases, lethal removal under a [Migratory Bird Depredation Permit](#) may be a necessary addition to an IWDM plan. Select removal of a few individuals can help to reinforce management efforts, improve their success, or eliminate the individuals specifically causing damage (Avery & Lowney, 2016). In some cases, vultures may become acclimated to harassment over time and no longer perceive it as a threat. In these situations, occasional lethal action paired with other management techniques can improve the overall success of vulture management efforts. As a species protected by the MBTA, lethal action can only be taken if a permit has been granted by the U.S. Fish and Wildlife Service (USFWS).

If there are legal means to implement lethal action (in accordance with local laws, city ordinances, and local law enforcement), then these steps can be followed to apply for a permit from USFWS:

1. Harassment actions must already have been taken in order for a permit to be reviewed.
2. Reach out to the U.S. Department of Agriculture Wildlife Services program to request a Form 37 Migratory Bird Damage Project Report. Regional contact information can be found at <https://agrillife.org/txwildlifeservices/who-to-contact/> or by contacting the state office at (210)561-3800. A Wildlife Services professional will conduct an investigation and document current harassment efforts, the results of those efforts, and total vulture numbers, and then make a determination to recommend whether a USFWS permit be issued or not. If Wildlife Services recommends a permit be issued, they will suggest a maximum quantity of birds to be taken, and they may recommend additional actions to be used in conjunction with lethal removal.
3. An applicant must then submit Form 37 with a Migratory Bird Depredation Permit application to USFWS and pay the associated fee.
4. If a permit is issued, yearly reports will be required. If the problem persists and harassment efforts are still in place, managers can apply for permit renewals.

Depredation permits are designed to reinforce the negative connotation of existing aversive conditioning. They are not the sole answer to conflict issues and will not be granted if they are not used in conjunction with other practices.

CONCLUSIONS

Expanding populations of humans and wildlife are bound to lead to conflicts in areas where they overlap. It is important for managers dealing with vulture nuisance issues to remember that they play a vital role in the environment and that coexistence with these birds is the ultimate goal. The tools outlined in this publication should provide managers with a variety of options for addressing vulture issues. To be successful, it is important that multiple tools are used and their timing is varied enough that the birds do not become accustomed to them.

If additional information is required, a qualified professional can provide situation-specific recommendations for management efforts. Contact the Texas Wildlife Services or the Texas A&M AgriLife Extension Service for more information.

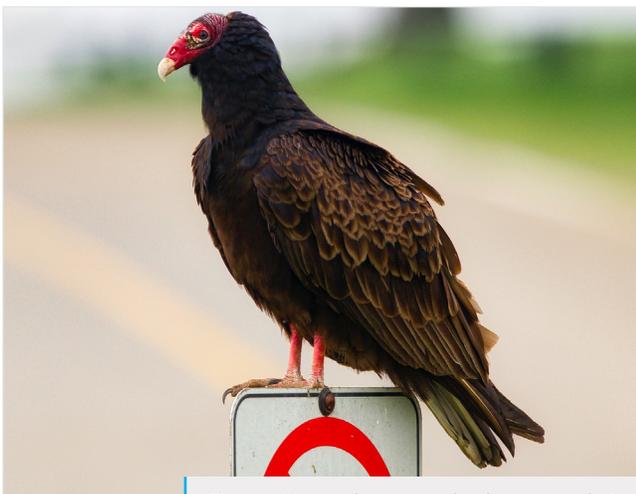
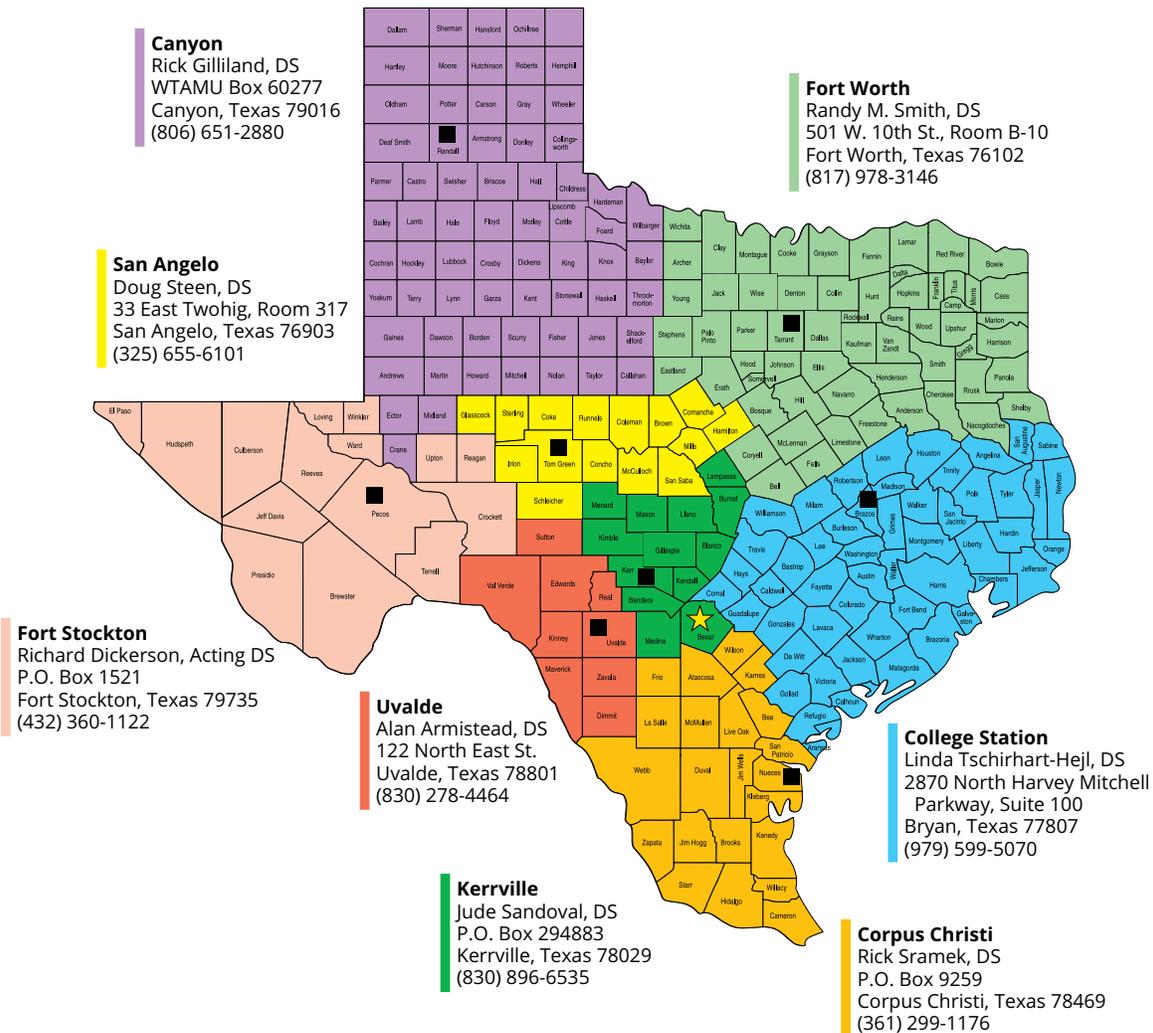


Figure 11. A vulture perched on a road sign.
Photo by Christopher Sanders in Grapevine, Texas.

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