



Consider the

THESE OFTEN REVEILED AND MISUNDERSTOOD
BIRDS ARE INTERESTING AND IMPORTANT
CONTRIBUTORS TO OUR ECOSYSTEM

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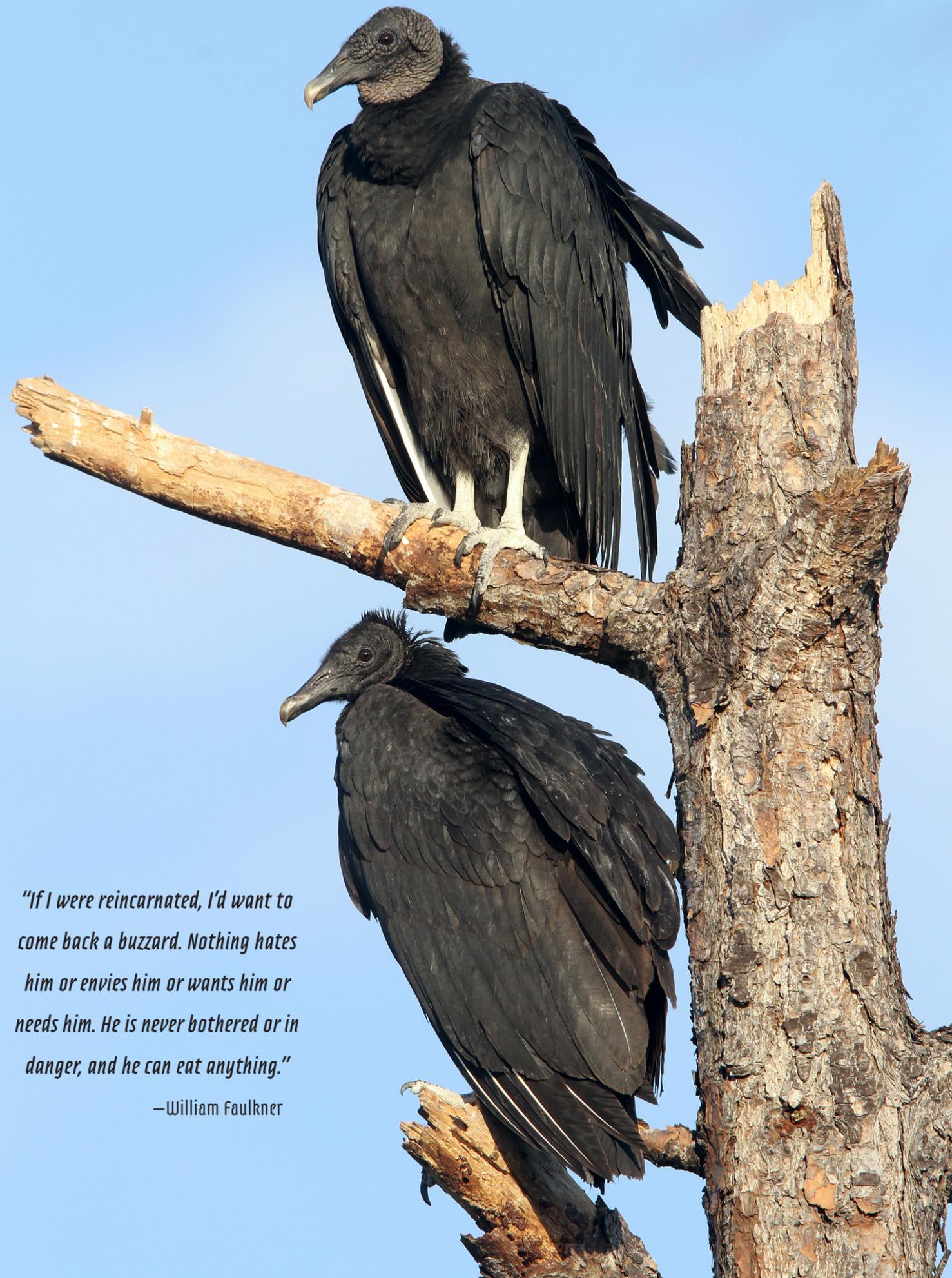
Vulture

Turkey (above) and black vultures (opposite page), both commonly referred to as buzzards, are the most commonly observed birds of prey in North Carolina.

Politicians aside, and perhaps Duke University men's basketball team, few things are viewed with as much contempt and disgust as vultures. With their wrinkled, featherless heads frequently observed buried neck-deep inside some bloated carcass, vultures have had their fair share of critics throughout history.

Ancient Biblical texts refer to vultures as the most unclean and hated of birds. A quote from the Old Testament book of Leviticus states, "These, moreover, you shall detest among all birds; they are abhorrent, not to be eaten." Even Charles Darwin, naturalist extraordinaire, upon observing turkey vultures on his round-the-world voyage aboard the HMS Beagle, called them "disgusting birds" whose bare red heads "revel in putridity."

With such negative press, it is easy to overlook the vital ecosystem services these death eaters provide. By ridding the land of decaying carcasses, vultures make our environment cleaner and healthier. A look at their life history, aside from their proclivity for rotting flesh, reveals that vultures are among the most interesting of all birds.



"If I were reincarnated, I'd want to come back a buzzard. Nothing hates him or envies him or wants him or needs him. He is never bothered or in danger, and he can eat anything."

—William Faulkner

A SURPRISE ON THE MOUNTAIN

For the past 15 years, Alan Cameron has volunteered for the N.C. Wildlife Resources Commission, documenting the life cycles of numerous rare species, from green salamanders to spotted skunks. Belying his age, the spry and fit septuagenarian has traversed practically every mountainous acre of DuPont State Forest with a keen naturalist's eye.

On March 16, 2015, a turkey vulture with a tag bearing the letters "ETC" attached to its wing showed up on a rocky outcrop at one of his baited camera trap sites. Intrigued, Cameron began contacting area ornithologists to track down where the bird came from. It did not take long to find the answer.

"She was one of 255 turkey vultures tagged in Key West, Florida in 2013 as part of a study to determine if turkey vultures were a hazard to aircraft landing and taking off from Key West Naval Air Station,"

Cameron said, adding that the female vulture regularly returned to his bait station throughout most of 2015. "She sometimes came day after day and sometimes she disappeared for weeks at a time."

His game cameras last photographed the turkey vulture on Nov. 23, 2015, picking through table scraps set out as bait. Just six weeks later, on Jan. 10, 2016, she was photographed flying over the Florida Keys Wild Bird Center on Vernier Key. Checking his game cameras in February 2016, Cameron was surprised to find the turkey vulture back on site. Much like the year before, the vulture stayed throughout the spring and summer and

departed the mountain forest late in the fall. Even more remarkable, the well-traveled bird repeated the same behavior in 2017 and again in 2018.



Left: A remote camera captures black vultures feeding on a road-killed deer in Moore County. Differences in turkey vultures (top right) and black vultures (bottom right) can be seen in their flight profiles.

A GREAT SUCCESS STORY

Of the world's 23 species of vulture, over half are threatened with extinction. Some, such as the California condor, number only a few hundred birds in the wild. However, populations of North Carolina's two native vulture species, the black and turkey, seem to be on the rise.

Black and turkey vultures, both commonly called buzzards, are among our largest and most visible birds of prey. Stand anywhere in North Carolina, be it the mountains or the coast, stare up at the sky long enough and you will eventually see the distinctive silhouette of a soaring vulture.

For the layperson, it can be difficult to distinguish a turkey vulture from a black vulture. In flight, adult turkey vultures have red featherless heads and two-toned wings that span an impressive six feet. Soaring on hot air thermals, turkey vultures hold their wings angled slightly upward in a V-shape and rarely flap. Black vultures, instead, have a smaller wingspan of around five feet with pale silvery tips and square-shaped tails, and they tend to flap more frequently as they glide high overhead.

A century ago, black and turkey vultures were considered residents of Southern states.

Nesting of either species north of the Mason-Dixon Line tended to warrant a note in scientific journals, like George Sutton's "Extension of the Breeding Range of the Turkey Vulture in Pennsylvania" in a 1928 issue of *The Auk*.

Today, turkey vultures have greatly expanded their range, soaring the skies from southern Canada all the way to the tip of South America. I have even seen the birds flying over an elephant seal rookery along the desolate windswept beaches of the Falkland Islands just north of Antarctica. Black vultures too have expanded their range and are now found throughout most of the continental United States down to central Chile in South America. With an estimated population of 20 million birds, black vultures are thought to be the most numerous birds of prey in the Western Hemisphere.

Both vulture species owe a large part of their success to humans. With the expansion of the Interstate Highway System in the 1950s and a substantial increase in human population, more and more automobiles have taken to the roads. More cars and more highways equal more collisions with native wildlife, such as white-tailed deer,

whose population, like that of humans, has increased exponentially in the eastern United States from just a half million animals in 1900 to over 15 million (by some estimates) today. Trash thrown out of those car windows by unscrupulous drivers attracts all manner of wildlife to highways and causes even more roadkill, resulting in an all-you-can-eat buffet for vultures. A half-century ban on the toxic pesticide DDT and increased protections on birds of prey have also contributed to the vulture's success.

NOT-SO-WELCOME NEIGHBORS

Recently, my father and I traveled to the small town of Biscoe, near the geographic center of North Carolina, and just 15 miles from my childhood home in Eagle Springs. I wanted to visit a tall communications tower near the town's center, where I recalled seeing an impressive vulture roost several years back. I was curious to see if the birds were still there.

The tower came into view as we turned my car onto a side road just off Main Street a couple hours before sunset. "Look at all of them perched up there," my father said. Pulling over to the side of the road, I lowered



Game cameras placed in DuPont State Forest have captured unique images of vulture natural history, including a turkey vulture tagged in Key West, Fla. (above) and a bobcat predating a black vulture (below).



Why Do Turkey Vultures Rock Side-to-Side When They Soar?
See Nature's Ways, page 43.



When they feel threatened, vultures can projectile vomit their last meal over a distance of several feet...

my window and glanced up. At least 50 birds, an equal number of black and turkey vultures, were perched near the top while another dozen or so were slowly circling a hot air thermal high above the tower. Even more vultures were perched in some loblolly pines 50 yards away.

A resident from a small, wooden house that sat between the tower and the pines stepped out into his yard and half-jokingly warned us to watch out for “white rain” falling from the sky. Judging by the amount of defecation on the metal rails of the tower, it was sage advice indeed.

For over an hour, my father and I stood on the shoulder of the road, binoculars in hand, counting vultures as they streamed to the tower from miles around for their evening roost. At one point, a sudden blaring of a nearby car alarm spooked the vultures. In a flurry of wingbeats, the entire roost, both on the tower and in the pines, took to the air as a group and circled overhead, swirling like a living black tornado silhouetted against the Carolina blue sky. One by one, the birds slowly broke rank from the spinning vortex and returned down to the tower for the night. When it was all said and done, we estimated well over 200 black and turkey vultures at the roost.

Scenes like this are becoming more common in suburbia across the country. Both species seem to tolerate human presence and are extremely resourceful, especially the black vultures. Where they aggregate, vultures can quickly become a nuisance. Along the Crystal River in western Florida, black vultures regularly pick apart boat cushions, defecate on docks and rip shingles

from the roofs of homes. In the Everglades, signs in visitor parking lots warn motorists of loitering vultures who like to rip rubber molding from car doors and tear off windshield wipers.

When 344 black vultures were wing-tagged during a multi-year study of seven roosts in Chatham County, researchers found that many of the birds were related to one another. Mated pairs, along with their offspring, gathered at evening roosts, readily followed each other on morning foraging flights and associated with one another when feeding on carcasses. The results of the study, published in the journal *Animal Behavior* in 1987, proved that vultures were more socially complex than previously thought.

A NOSE FOR DEATH

In December 2010, a 19th century first edition copy (one of only 120 in the world) of *The Birds of America* sold at Sotheby's in London for a record \$11.5 million. The author, naturalist and painter John James Audubon, had a lifelong fascination with vultures, and his portraits of the birds in the book (Plate 106 of a pair of black vultures feeding on the head of a white-tailed deer buck and Plate 151 of a pair of perched turkey vultures) remain the most detailed paintings ever created for either species.

Audubon's first scientific paper dealt with the habits of vultures, which he claimed found carcasses by sight and not by smell. For well over a century, ornithologists debated his hypothesis. It was not until December 2017 when a paper published in *Scientific Reports* proved that the turkey vulture has an olfactory bulb that is four times larger than that of a black vulture, and compared with 143 other species birds, the bulb is significantly larger relative to brain volume. Turkey vultures, contrary to Audubon's theories, find their food primarily using their sense of smell, which is among the most advanced of any bird species.

Black vultures, on the other hand, rely more on sight to find a meal and will often follow turkey vultures to tasty carcasses, so Audubon was partially correct. With their



Turkey vultures (opposite page) locate carrion using a highly advanced sense of smell. The eggs (above) and chick (below) from a pair of black vultures that nest in the author's great-grandfather's abandoned barn.

strong social bonds, groups of black vultures frequently drive larger turkey vultures away from carcasses. Black vultures also appear to have more predatory tendencies and have been recorded killing small animals, from opossums to striped skunks. Recent nature documentaries have shown groups of black vultures eagerly attacking and eating newly hatched sea turtles on Costa Rican beaches. Even more surprising, over the last decade there has been an increase in the number of

complaints by farmers who described flocks of black vultures attacking and killing newborn sheep and calves.

A SURPRISE IN THE BARN

The scraping of talons on an old tin roof 10 years ago last spring first alerted me to their presence. That warm, inviting April day found me walking down an old dirt road that cut through the heart of my great-grandfather's farm. The property, abandoned for decades, had become so overgrown with tangles of smilax vines and dense thickets of invasive bamboo and privet that it was nearly impossible to see the old dilapidated house and wooden barns that dotted the landscape.

I was headed to an old field where I had found numerous arrowheads in years past with my late grandmother, Irene, when those scratchy talons caught my attention. Glancing over to an old vine-covered barn just off the road, I was surprised to see a black vulture hop off the collapsed tin roof into a nearby sweet gum. Curiosity got the best of me and I diverted off the well-worn path. Fighting through a dense tangle of vegetation, I made my way over to the rear entrance of the barn.

Stepping inside, my nose was immediately assaulted by the sweet acrid smell of decay. As my eyes adjusted to the dimly lit barn, a sudden hiss from a nearby hay bale gave me a startle. Cautiously peeking over the haystack,

I was surprised to find two black vulture chicks covered in white fluffy down hunkered tightly against the wooden planks in the corner of the barn. One chick, upon seeing me, lowered its head, stretched out its wings, and gave another guttural hiss, at which point I completely froze.

I was well aware that vultures, especially the young, have one of the most effective self-defense mechanisms in the animal kingdom. When they feel threatened, vultures can projectile vomit their last meal over a distance of several feet, and I was well within striking range. Considering their meals are some variety of maggot-ridden flesh, getting covered by that vile liquid would qualify as one of life's worst experiences. It is a stink that does not easily wash off one's clothes or one's mind. As quietly as I could, I slowly stepped back outside the barn into the bright sunlight where mother vulture was still quietly watching from the sweet gum.

Some predators are willing to take the chance of being covered by vulture puke. Back in DuPont State Forest, Alan Cameron found a small cave where black vultures nested year after year. Placing a game camera just outside the entrance to monitor the birds, Cameron was surprised to find a bobcat enter the cave one night in March 2018 and emerge 51 minutes later with an adult vulture clamped firmly in its mouth.

I periodically checked in on the vulture family at my great-grandfather's farm that year until the chicks successfully fledged. Since that time, in what has become an annual rite of spring, I have found a black vulture nest in that old barn each year for the past 10 years. Black vultures are long-lived and have lifespans reaching 20 years or longer. Being social birds, bonded pairs will mate for life. It is likely that the same birds return to nest in my great-grandfather's barn year after year. I wonder if they remember me. ♦

A graduate of UNC-Chapel Hill, regular contributor and marine biologist Todd Pusser maintains no harsh feelings toward Duke University or its basketball team.