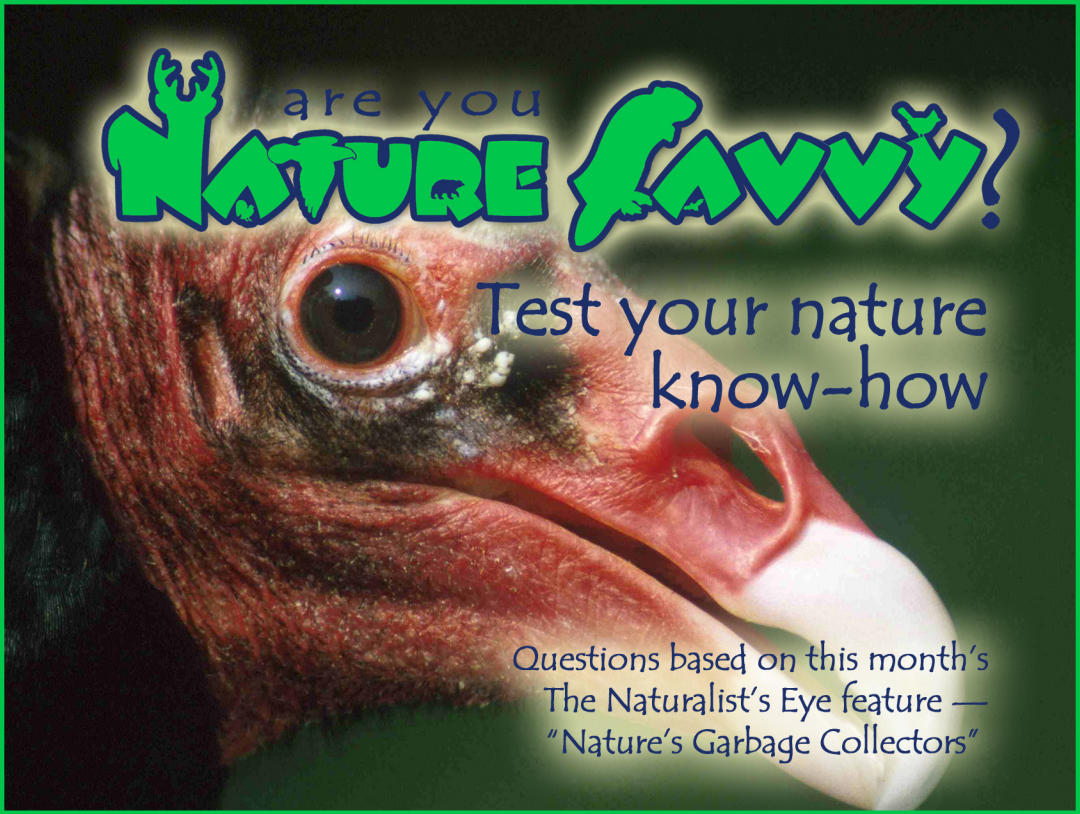

are you
NATURE SAVVY?
Test your nature know-how
Questions based on this month's The Naturalist's Eye feature — "Nature's Garbage Collectors"

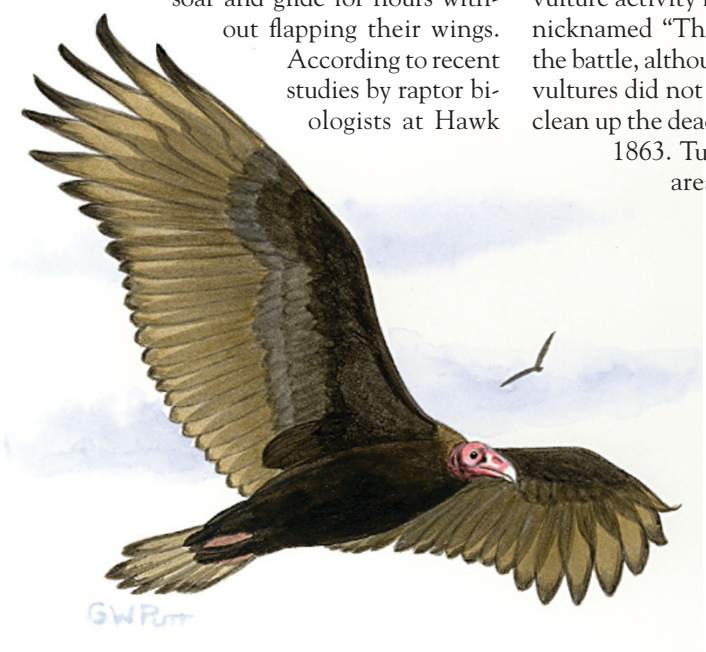
are you NATURE SAVVY?

1. What two species of vultures can be found at Gettysburg National Park?
2. Why does the author refer to vultures as "Nature's Garbage Collectors?"
3. Vultures have several adaptations that help destroy harmful microorganisms that might be found in rotting carcasses. Describe one.
4. How do vultures discourage predators?
5. Many of Pennsylvania's turkey vultures fly south for the winter, often spending the winter in Florida and Georgia. Describe how the biologists at Hawk Mountain Sanctuary discovered this?

In Pennsylvania, most return in the spring from Florida or Georgia, others return from closer southern states and still others never leave the commonwealth. They are . . .

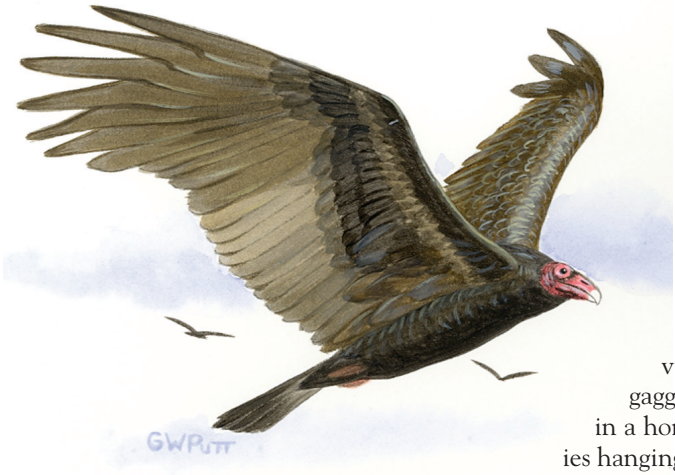
Nature's Garbage Collectors

LIKE RESIDENTS of Hinckley, Ohio, who always welcome the first turkey vultures back on March 15, I, too, await the return of them in March, and regard them as one of the first signs of spring. Usually the day they appear here is windy, and they rock back and forth above First Field, their wings tilted in their distinctive V-shape, which enables them to soar and glide for hours without flapping their wings. According to recent studies by raptor biologists at Hawk Mountain Sanctuary, most Pennsylvania turkey vultures have returned from Florida or Georgia, but others return from closer southern states. Still others never leave the commonwealth, occupying roosts in southeastern and southcentral counties.



Twenty years ago, in late January, I visited the large winter vulture roost at the Gettysburg National Park. The center of vulture activity is focused on an area aptly nicknamed "The Valley of Death," after the battle, although contrary to legend, the vultures did not first appear in the area to clean up the dead horses after the battle in 1863. Turkey vultures were in the area long before then, and black vultures, previously living only south of the Mason-Dixon Line, didn't emigrate there until the late 1930s or early 1940s.

Watching hundreds of vultures as they gradually entered the roost at night and vacated it at first light, was a memorable experience. No wonder Jim and Shannon Lang of Ty-



rone were excited when vultures chose their 27-acre property as a seasonal roost in 2006. Located on a hill above the wooded town park, their 1930s-era house and their pool were shrouded with trees that darkened their prospect. Shortly after moving in, they cut down 25 large trees, and the next year the vultures arrived in March. They hang out in the four acres of open woods around their house and garage and beyond their pool.

"They seem to have three or four favorite trees," Shannon says. "I call those trees the Radisson. When they are filled, they go to smaller trees — the Motel 6." Those trees are mostly oaks and conifers. That habitat — partially open under a canopy of large trees to give the vultures room to move around in — is perfect for a vulture roost. And in southern Pennsylvania, northern Maryland and northeastern Virginia, according to a study, roost sites were closer to clearings, human residences, roads and permanent streams than roosts in other parts of the U.S. That perfectly describes the habitat of the Lang's roost, because there is a stream on their property and in the park below.

Shannon, who has a degree in wildlife biology, enjoys watching the vultures even though her neighbors think they are spooky and wonder why she doesn't get rid of them.

"I think they're fascinating," she says. "They add to the wildlife. I like to see them in the morning when," she tells me, "they are off by 7:30 and back around 7:20 in the evening. You could almost set your watch by them."

She adds that they are quiet and clean. Her two sons collect the pellets the vultures cast below the trees, gagging them up while they lie in a horizontal position, their bodies hanging down and heads bobbing.

Shannon has even watched the vultures play. Once, when their pool was still covered, a turkey vulture landed on it and, using its beak, tried to roll a large ball that her sons had left on top of the cover up a slight incline. Each time the ball rolled back down to the vulture it tried again. Apparently, its antics kept the entire family entertained for quite a while.

The Lang's roost is a seasonal one and is made up mostly of turkey vultures with a couple black vultures and has about 50 birds. These communal roosts — winter, seasonal, or year round — can range from a few birds to several thousand, although the largest are winter roosts, because both residents and migrants occupy them. The one at Gettysburg National Park has held as many as a thousand, and those in Florida more than 4,000.

Such roosts are probably used to escape predators, provide opportunities for various social interactions and supply meeting places for possible mates. But surprisingly little is known about the life history of these common birds. For instance, researchers believe they mate for life, but they aren't certain. They also don't know at what age turkey vultures mate for the first time, but they do suspect that less than half breed in any given year.

Here in Pennsylvania, turkey vultures arrive in early to mid-March, and most eggs and nests are found between April 18

and May 14. Turkey vultures are secretive nesters, however, and while researchers think they nest throughout the state, during the first Breeding Bird Atlasing, only one percent of observations were those of nests. That's because the females usually lay their one to three, creamy-white, blotchy eggs in deep recesses, such as caves, crevices and ledges, in mammal burrows, cavities in banks, or in large, hollow logs. Once they find a good nesting area, they often reuse it for long periods.

A mated male and female frequently sit together near their nest site for days or weeks before nesting and engage in what researchers call "follow flight," something I've observed over First Field, when one bird flies behind and above the leading bird, often twisting and turning just as the leader does. Sometimes the trailing bird dives at the leading one, partly folding its wings and diving directly toward it while the leading bird twists sideways and drops and the trailing bird flies upward again, neither bird touching the other. Other displays, such as ritualized "dancing," bill-gaping and wing spreading have also been observed by researchers before the birds mate on the ground, rocks or in trees, while nibbling or poking at each other's naked, red heads.

After the female lays her second egg, she and her mate take turns incubating them. It takes from 38 to 40 days for the eggs to hatch; young are downy with naked faces, throats and crop areas. The parents also take turns brooding them until they are two weeks old and feed the young by regurgitation. By 18 days of age, they are able to stand up and retreat into the recessed nest to escape predators. They can also stomp their feet, hiss and perform what ornithologists call "scare jump" or "scare rush," when they lunge forward, their heads thrust upward, flap their wings, open their bills and hiss in a bluff attack.

Such an attack was enough to turn my Uncle Cal permanently against "buzzards," as he called them when he told me about crawling into a cave outside Pottstown when he was a teenager and meeting the "scare rush."

Between 70 and 80 days of age, nestlings become fledglings, flying above the canopy, and leave the nest area for communal roosts when they are 12 weeks old, about the time in August when the Lang's roost increases in size for a few weeks before the vultures are gone for another year.

Turkey vultures are unique among vulture species because they can smell as well as see their prey, which is why black vultures often follow turkey vultures to a carcass and then bully them away from it. One early May day, as I approached the Far Field, I spotted a turkey vulture in a tree that spread and shook its wings but remained on its perch. One of our turkey hunters had told me about a dead deer there. Then I noticed a second turkey vulture in the same tree, while a third wheeled overhead. After a few minutes, the first vulture soared off. Suddenly, a black vulture flew up from the ground, sat in a tree a short time, and flew back down onto the dead deer hidden in the grass below. After picking at the carcass for a few minutes, it flew up to the remaining turkey vulture and chased it away. Then it, too, flew off. Although black vultures are a little smaller than turkey vultures, they always dominate them.

The scientific name for turkey vulture is *Carthartes aura*, which means "breezy purifier." As primarily scavengers, the pH of a vulture's stomach acid is an incredibly corrosive zero, which allows them to eat rotting flesh that might contain anthrax or botulinum. In addition, they use it as a weapon, projectile vomiting on any potential predator. As if that weren't disgusting enough, they also defecate on their legs, because the high ammonia content of their feces, ornithologist David Bird says, probably "kills off potentially harmful microorganisms picked up while standing in and wading through rotting carcasses."

Such food can most easily be found in

a mixed farm and forest habitat, such as we have in our area. There they eat the carcasses of both wild and domestic carrion, such as livestock, woodchucks, skunks, raccoons, opossums and deer. In fact, turkey vultures only moved into Pennsylvania's wooded mountains in the 1920s and '30s to feed on starved deer. A study of turkey vulture pellets in North Carolina also found Bermuda grass, pieces of plastic sandwich bags, brown paper sacks and polystyrene in them, which proved that turkey vultures clean up road kills. Without them, we would have many dead critters around.

They also hang around landfills, as Keith Bildstein of Hawk Mountain Sanctuary and James Mandel of Cornell University discovered. They spent 120 days in 2004 and 2005 watching turkey vultures from an unused hilltop at Waste Management, Inc. Landfill in Pen Argyl, Northampton County. The 30 to 90 turkey vultures that fed there roosted at three nearby communal roosts. Of those vultures, 10 to 15 stayed 90 to 210 minutes after the local sunset, while turkey vultures that fed in nearby farmlands, woodlands and suburban areas returned to their roosts no later than 30 minutes after sunset.

Those vultures that remained at the landfill used hot air thermals caused by two methane venting sites to give them lifts to leave the landfill long after natural thermals had subsided for the night. However, landfill workers found turkey vulture carcasses at or near the base of the vents, which suggests that the flares killed them by suffocation or scorching.

Bildstein and other raptor biologists at Hawk Mountain Sanctuary launched a long-term study of turkey vulture migration in 2003 to, in their words, "learn more about the extent, causes and consequences of their annual journeys." They put tiny radio tags monitored by satellite on 24 turkey vultures to study both their autumn and spring migrations. According to raptor biologist David Barber, who is working on this study and recently spoke to our local Juniata Valley Audubon Society, four of eleven turkey vultures that he studied were migratory.

Those that migrated went to Florida and Georgia, but while some go to the same place every year, others seem to adjust to the weather. They don't always take the same route. Some migrate along the coast, while others go down the Appalachian spine. Pennsylvania birds take a month to migrate, making many stopovers and waiting for the thermals to waft them south. By implanting five vultures with heart-rate loggers, the researchers discovered that they don't use much energy to migrate. The wind does all the work.

Today, turkey vultures are a continent-wide, common species, and Hawk Mountain scientists want them to remain so, unlike the incredible decline of Old World vultures in many parts of Africa and southern Asia, especially in India where an anti-inflammatory drug given to cows has caused kidney failure within 36 hours to vultures that have scavenged the bodies of cows containing the drug. The population fell from 40 million in the 1980s to a couple thousand today, "The most catastrophic decline of a raptor species anywhere," Bildstein says.

Maybe we should all celebrate the second International Vulture Awareness Day next September 5. It grew from Vulture Awareness Days run by the Birds of Prey Working Group in South Africa and the Hawk Conservancy Trust in England. I was also pleased to learn about the Turkey Vulture Society, a nonprofit scientific corporation whose "purpose is to promote scientific studies of the life habits and needs of the turkey vulture, to protect the vulture and its habitat, and to inform the public of the valuable and essential services this bird provides to mankind and to the environment." □