



# Vultures in **FREE-FALL**

Powerful and ominous, the vulture is among the most imposing species of birds in the world. Its appetite for carrion and its characterization as a harbinger of death may convey an image of strength, but in reality, many species of these magnificent birds are in a population freefall that could mean extinction within the next 10 years.

Once numbering in the tens of millions, vulture populations in south Asia and India are experiencing declines of 95-99 percent. In India, this death rate is due to poisoning from ingestion of the non-steroid, anti-inflammatory drug (NSAID) Diclofenac. Diclofenac is used to treat sick livestock, and its residue in the tissue of dead animals spells death for vultures who consume that flesh.

Manufacture of the drug was made illegal in India in 2006, but the drug is still heavily used. The impact of the disappearance of these birds has not been measured, but their absence could have far-ranging impacts on human health.

Vultures are scavengers and play a critical role in hot climates where they dispose of rotting carrion. Invulnerable to botulism, cholera and anthrax, vultures are essentially nature's HAZMAT clean-up crew, preventing the spread of harmful bacteria and disease.

Dr. Todd Katzner, National Aviary director of Conservation & Field research, is leading a research effort to measure demography of vulture populations in Kazakhstan, where it is feared vulture populations could also be impacted by Diclofenac and by other economic changes in the area.

For the past eight years, he has gathered data on vultures in this area, not through traditional methods of capture, but through DNA analysis gathered from feathers collected at sites where vultures have settled in for a feast.

"You spend a lot of time trying to stay up wind, because the smell is pretty heinous," says Katzner. "You try and pick the feathers that aren't too covered with goo."

The messy process begins with finding the dead carcasses, a task that requires the help of local shepherds living in the valleys where the research is focused.

"When we began this project, the shepherds and their families viewed us with suspicion. The shepherds are basically contractors, and they thought we were sent by the livestock owners to determine whether they were killing sheep and cattle to feed their families. Now that they know us, they're willing to share information on vulture feeding sites."

If the research team finds a freshly plundered carcass, the birds can be seen resting and digesting up on the hillside. Having just consumed four to five pounds of food at one sitting, the already heavy birds are in poor shape to fly. Their position on the hill – where if disturbed they can jump into the air without a running start – makes for an easier take off.

The feathers are collected, trimmed and exported to Cornell University, where Yula Kapetanakos, a graduate student and member of the research team, analyzes the feathers and identifies individual birds.

"As we visit sites over multiple years, we can begin to identify the size of the population and can estimate how well individual vultures are surviving, all without trapping or handling the birds in any way," Katzner adds.

"Our goal is to identify the conservation status of these populations, and to take that information to the people that can work with people in Kazakhstan to change behaviors, specifically land management and conservation organizations.

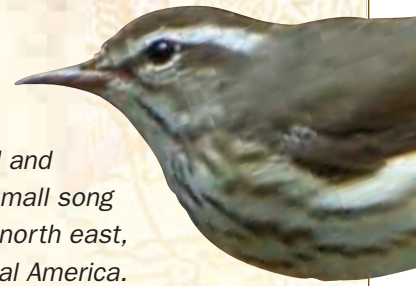
And what does he see for the future of this region's vultures?

"I don't really have a sense yet. We haven't seen the massive mortality that has taken place in India, but there are a number of impacts on these birds. For example, populations of saiga, a kind of antelope, have declined by up to 90 percent due to hunting for their horns, which are used in traditional Chinese medicine. Saiga are probably a primary food source for juvenile vultures who have not yet reached sexual maturity.

"If these juveniles are dying off, we won't see the impact until older breeding birds begin to die off. If there aren't sexually mature birds to replace the ones that die, the population will decline very, very quickly."



# Louisiana waterthrush



The Louisiana waterthrush is a bird of forest streams. Recognized by its continuously bobbing tail and loud ringing call (when establishing his territory the male will sing with gusto nearly all day), this small song bird spends its spring and summer breeding months in western Pennsylvania and throughout the north east, but heads south to winter in a range that spreads primarily through the Greater Antilles and Central America.

Simply adorned in brown and white plumage, the Louisiana waterthrush is unremarkable in appearance, but its dependence on streams and waterways for food and nesting areas have placed it at the center of an international research effort. As an indicator species, its breeding and survival success could serve as a warning sign as to the deteriorating condition of waterways throughout its range.

Dr. Steven Latta, National Aviary assistant director of Conservation & Field Research, in partnership with Robert Mulvihill, Field Ornithology Projects Coordinator at Powdermill Avian Research Center, along with members of the Hispaniola Ornithological Society, is leading a multi-year study of the population dynamics of these birds in Pennsylvania and the Dominican Republic. The project is the first study of environmental factors affecting riparian songbirds (those associated with streams and wetlands) in both wintering and summer breeding grounds.

“The effects of acid deposition on streams and other habitats is of concern nationally, but is of especially high importance in Pennsylvania

resources on which these and other bird species depend.”

The study launched in March 2007 when the birds began returning to western Pennsylvania. Louisiana waterthrush are among the first migratory birds to return, and the males are the first to arrive, establishing their territories with their full-throttle songs. Females follow once the males have had time to stake their areas.

Latta and his fellow researchers have based their local research in the Laurel Highlands near Ligonier. The team spends weeks in the field, walking the streams in the area and using mist nets made of very fine nylon to capture the birds. The birds are then color banded so that they can be identified from a distance.

Banded birds are then monitored to determine when nest building begins. Louisiana Waterthrush nest on and around the banks of streams, creating small cups lined with dried leaves and other fine materials.

“The nests can be quite difficult to find,” says Latta. “We spend a

lot of time watching the birds and looking for behavioral cues that indicate the presence of a nest.”

hatched, and the survivorship of the chicks to fledgling is recorded. The chicks are color banded while still in the nest so that the team can track the number that successfully leave the nest.

Other information logged includes detailed measurement of habitat around the nest, water quality, abundance of insects – flying and in the stream – and vegetation.

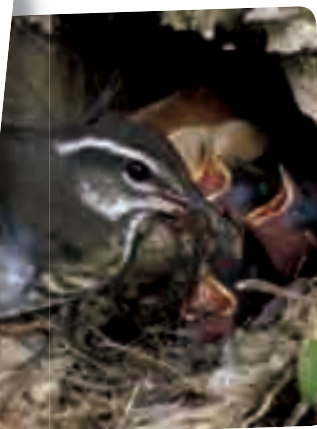
Similar data is collected in the birds’ wintering grounds in the Dominican Republic where the team’s work takes place along streams primarily in organic cocoa plantations.

“Because cocoa is grown under a shade canopy, the local farmers want to protect that habitat, and are very supportive of our work,” says Latta. “In the Dominican Republic, we’re interested in how well the birds survive through the non-breeding period and the number that return to the wintering grounds every year. Just as individual birds will return to their same breeding territories year after year, surviving birds will also return to their same wintering territory.”

Over time, Latta and his partners will analyze the data to determine its implications in terms of the health of ecosystems along the studied streams in Pennsylvania and the Dominican Republic. That information will then be shared with the EPA as well as with land managers and wildlife managers concerned with managing species or habitats.

“Knowing how stream pollution affects birds over time will be critical for conservation and management,” says Latta.

“Knowing how these migratory birds are impacted by events on both their wintering and breeding grounds will add markedly to our ability to use the waterthrush as an easily observed and economically censused indicator of ecosystem health.”



Once the nests are located and matched to individual birds, they are monitored for eggs, and data on the number of eggs, the number

where acid is entering ecosystems from rain and snowfall as well as from abandoned mine drainage,” says Latta. “Among other impacts, acidification leads to decreases in insect populations, depleting the food



# Meet the new kid... **SID**

The National Aviary's African penguins have a new team captain. Our newest penguin hatched on February 21st at the Erie Zoo in Erie, Pennsylvania, and we couldn't resist naming him Sidney, after Pittsburgh Penguins hockey player Sidney Crosby.

*Sid the Kid*, as the other penguins like to call him, spent his first two weeks dining on regurgitated fish provided by his parents. Once Sid was old enough to eat whole fish, Steve Sarro, Director of Animal Programs, and Linda Weisenmiller, Senior Trainer, drove to Erie to pick up the Kid and bring him home.

He spent his first few weeks at the National Aviary living a luxurious life in Steve's office, being hand-fed his favorite fish so that he'd feel comfortable being around people. The pampering paid off, because Sidney handled his public debut and all of the

media attention like a rock star...or a *hockey star!*

African penguins live along the west coast of South Africa. They lay their eggs on beautiful beaches and hatch out one or two chicks each year. The chicks are very small when first hatched – Sidney weighed only 2 ounces – but grow up quickly, reaching their adult size of 5-10 pounds in one month. For the first year and a half of their lives they have grayish-blue feathers, then they grow in their black and white tuxedo feathers.

**You can meet Sid the Kid in person at 11:30 am and 2:30 pm during the FliteZone Bird Show, Wednesdays through Sundays and the Penguin Premiere, Mondays and Tuesdays.**

