Delaware Valley Eagle Alliance

NATURE'S NEWSLETTER

ONLINE EDITION

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NEWS UPDATE: Bats Successfully Treated for White-Nose Syndrome

For the first time ever, scientists have treated and healed bats infected with White-Nose Syndrome.

In mid-May, 2015, scientists and conservationists gathered outside the historic Mark Twain Cave Complex in Hannibal, Missouri, to release back into the wild some of the first bats successfully treated for the deadly White-Nose Syndrome (WNS). The 75 bats released were part of the first field trials of a novel way to protect bats from this syndrome.

Ten years ago, a fungus - Pseudogymnoascus destructans (Pd) - which causes WNS in bats was introduced in the United States. Populations of bats in the US and Canada, more than 5.7 million, were quickly decimated.

Pd invades the nose, mouth and wings of bats during hibernation, when bats' immune systems are largely shut down. Research indicates that the fungus may lead to dehydration, causing the bats to wake more frequently and burn precious fat reserves. This leads to starvation. Science has yet to develop an effective, ecologically appropriate means of combatting the

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INSIDE THIS ISSUE

Female Black vulture was never far from her two eggs. ©www.johnadigiorgio.com

BLACK VULTURES Establish a Nest

by Yoke Bauer DiGiorgio

The Black vulture, also known as the American black vulture, is one of three different vultures found in the US (the California condor and the Turkey vulture being the other two). With a bare black head, black plumage and neat white stars under their wingtips, Black vultures are compact birds with a broad wing span of 4.9 feet, short tails, and powerful wingbeats.

Black Vultures had been found in the eastern and southern parts of the US. But in recent decades they have increased their populations and substantially increased their range northward. And so, a very exciting encounter last summer....

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© Photograph provided by Bat Conservation International

One of the bats being released as part of the first field trial release in May, 2015 - a most promising sign yet that White-Nose-Syndrome can be cured and America's bats can be saved.

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NEWS UPDATE: Bats Successfully Treated for White-Nose Syndrome

fungus, which may kill up to 100 percent of bats in an infected site, but the recent field trials are the most promising yet.

The innovation treatment development began while Dr. Christopher Cornelison and several colleagues at Georgia State University were conducting research for possible agricultural applications. They found that a common North America bacterium, *Rhodococcus rhodochrous*, had the ability to inhibit the growth of some fungi (including Pd). In 2012 U.S. Forest Service wildlife biologist Dr. Sybill Amelon and research plant pathologist Dr. Daniel Lindner joined them to conduct laboratory research on the application of this bacterium on bats infected with WNS. Field trials were conducted this past winter in Missouri and Kentucky caves. The bats released last month survived exposure to WNS in last winter's trials.

Participants at the bat release have expressed cautious optimism. "*While more research is needed before we know if our current discovery in an effective and environmentally safe treatment for WNS, we are very encouraged,*" said the U. S. Forest Service's Michael T. Rains, who directs the Service's Northern Research Station and the Forest Products Laboratory.

Funding for this research was provided in part by Bat Conservation International (BCI), the U.S. Forest Service and the Tennessee Chapter of The Nature Conservancy. "*We have a long way to go, but are pleased to see such progress being made to control the WNS fungus,*" said Katie Gillies, Director of Imperiled Species, U.S./Canada for BCI. "*The work that the US Forest Service and Georgia State University have completed to date bring us closer to managing this devastating disease. It's imperative that we continue to support such management-based research to ensure the future of North America's bats.*"

For more information:

Bat Conservation International at: www.batcon.org
The Nature Conservancy (Tennessee) at: http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/tennessee/success-in-treating-white-nose-syndrome.xml?src=e.gp

MORE ABOUT BATS

- There are more than 1,300 species of bats worldwide. Bats are critical to the health of natural ecosystems and globally play an essential role in pollination, tropical reforestation and pest management.
- From deserts to rainforests, nectar-feeding bats are critical pollinators for a wide variety of plants of great economic and ecological value. In North American deserts, giant cacti and agave depend on bats for pollination, while tropical bats pollinate incredible numbers of plants. Bats are so effective at dispersing seeds into ravaged forestlands that they've been called the "farmers of the tropics."
- Pregnant or nursing bats of some species will consume up to their body weight in insects each night. They are believed to save US farmers an average of $23 billion annually in reduced crop damage and lower pesticide use.
- In addition to being to see as well as other mammals, most bats also use a unique biological sonar system called echolocation, which lets them navigate and hunt fast-flying insects in total darkness. A bat emits beep-like sounds into its path, then collects and analyzes the echoes that come bouncing back. Using sound alone, bats can see everything but color and detect obstacles as fine as a human hair.
- Out of the over 1,300 bat species, there are only three that feed on blood (vampire bats) and only one targets mammals. They don't suck blood, they lap it like kittens with milk. All vampire bats are limited to Latin America.
- Bat populations are declining around the globe - largely the result of loss off habitat due to human activity.
- *DID YOU KNOW*: A powerful anticoagulant found in vampire bat saliva, which they use to keep blood from clotting, has been developed into a medication that helps prevent strokes in humans.

GETTING TO KNOW BUTTERFLIES

It is estimated that there are 17,000 species of butterflies worldwide, about 780 live in the US and Canada. Loss of habitat is the biggest problem facing all butterflies. Some types of butterflies will use only one type of plant. That plant is said to be species specific. Milkweed, for example, is species specific to Monarch butterflies. This is also true for caterpillars. An interesting point is that some caterpillars may prefer one type of plant in the South but disregard it in the North.

True or False: If you touch a butterfly, you'll rub off the powder from its wings and die.

False. The powder on a butterfly's wing is composed of thousands of dust sized, loosely attached scales, which are shed throughout a butterfly's life. Positioned like shingles on a roof, they help retain body heat and streamline airflow for easier flight. The color patterns formed by the scales are particularly important for locating the proper mate, as well as, camouflage.

True or False: If a butterfly gets a drop of water on it, it will drown.

False. Butterflies are tough little creatures that have evolved to survive in cold, heat, wind, rain, and drought.

True or False: There are more species of butterflies in Alaska than in Hawaii.

True. The range of butterflies has expanded northward as they are able to travel along a "biological bridge" to Alaska and Canada, following their favorite plants along coastline, mountain ranges, and river valleys.

True or False: Butterflies have favorite colors.

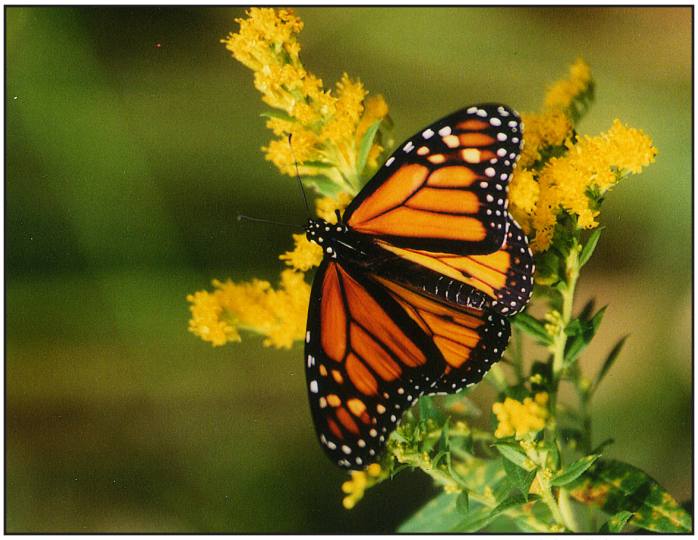
True. Purple and yellow are the preferred flower colors, followed by white, blue and red.

True or False: Butterflies are able to regenerate torn or broken wings.

False. Once a butterfly's wing is damaged, it can never repair itself. That is why when handling a butterfly, be sure your hands are dry. Grasp the butterfly using very light pressure with your thumb and index finger just above the body and as close to the shoulders as possible. This will reduce extra flapping and eliminate damage to the wings.

True or False: Butterflies and caterpillars don't breathe through their mouths.

True. Butterflies and caterpillars use holes in the side of their abdomens called *spiracles*.



BUTTERFLY LIFE STAGES

A butterfly goes through developmental stages that are very different from one another and different from the different species of butterflies:

THE CATERPILLAR

- A caterpillar's first food is usually its own eggshell, providing the nutrients it will need to grow; it's powerful jaw rarely stops chewing.
- The caterpillar's body has 13 segments. Its skin doesn't stretch, and as such, the caterpillar must shed its skin (molt) several times as it grows.
- With simple eyes called *ocelli*, caterpillars can only tell whether its day or night.

THE CHRYSALES

- During its final stage of growth, the caterpillar spins silk and creates a *chrysalis* with the help of spinnerets on its mouth.
- It is inside the chrysalis that the remarkable transformation known as metamorphosis occurs.

THE BUTTERFLY

- Has a body consisting of the head, thorax, and abdomen; 6 legs; and 2 forewings and 2 hind wings that can work independently of each other.
- The wings are traced by veins that provide structure and transmit fluids.
- Has two long parallel tubes, which they uncoil and use to suck nectar and other liquids.
- The antennae are used for both touch and smell.
- With eyes able to see ultraviolet light and able to see in many directions at once, the butterfly can detect movements by their predators.

Newly hatched Black vulture chick with 1 day old sibling (left); Black vulture chicks at 1 and 2 days old (center); Black vulture chicks at 7 weeks old (right).

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BLACK VULTURES Establish a Nest

Alt was early May and a neighbor had called us with a sighting of two large black birds in and around his barn. My husband John and I went to investigate. One of the windows to the barn was open and inside we observed a Black vulture perched in one dark corner. Black vultures are known to nest in dark cavities (caves, hollow trees, abandoned buildings, brush piles, thickets, stumps and such) and this pair had decided on an old barn. Black vultures are monogamous, staying with their mates for many years and all year round, and we knew the mate would be close by. Because of the lack of space inside the barn, we decided that only John would spend time observing and documenting the pair.

Black Vultures lay their eggs directly on the ground and one week later John observed the first egg; a second appeared two days later. Incubation is typically about 5 weeks and so we anticipated, if successful, chicks would appear mid-June. And so it was, hatching one day apart, John was able to document the actual hatching of the second chick. The chicks were helpless at hatching and covered with thick yellowish down. It would take 12-14 weeks for the chicks to grow and develop into young Black vultures. The adults would continue to feed them for months after fledging.

Black vulture chicks (left and right) with mom (center) at 11 weeks, two weeks before they fledged.

Black vultures are highly social birds with fierce family loyalty, maintaining strong social bonds with their families throughout their lives. We were so fortunate to be able to continue to observe them as they remained in the area, perched near the barn and flying in the skies over the barn and surrounding areas for months after the chicks fledged.

Cool Facts About Black Vultures

- In the U.S., Black vultures are outnumbered by Turkey vultures, but they have a huge range and are the most numerous vulture in the Western Hemisphere.
- Black vultures do not have a strong sense of smell. To find food (they feed almost exclusively on carrion) they soar high in the sky and keep an eye on the lower-soaring Turkey vultures. When a Turkey vulture's nose detects the delicious aroma of decaying flesh and descends on a carcass, the Black vulture follows close.
- Diet includes - feral hogs, poultry, cattle, donkeys, raccoons, coyotes, opossums, striped skunks, and armadillos. Black vultures may wade into shallow water to feed on floating carrion, or to catch small fish. They occasionally kill skunks, opossums, night-herons, leatherback turtle hatchlings, and livestock, including young pigs, lambs, and calves. Dumpsters and landfills may also be investigated to pick at human discards.
- One-on-one at a carcass, Black vultures lose out to the slightly larger Turkey Vulture. But flocks of Black Vultures can quickly take over a carcass and drive the more solitary Turkey Vultures away.
- Black vultures are silent most of the time as they lack a voice box. Their vocal abilities are limited to making raspy hisses and grunts.
- Although Black vultures and their relatives live only in North and South America, the oldest fossils from this group, 34 million plus years old, were found in Europe.
- Lifespan in the wild is 10 years; the oldest Black vulture on record, however, was at least 25 years, 6 months old.

FAWN TWINS ARRIVE

by Yoke Bauer DiGiorgio

Yoke Bauer DiGiorgio is a naturalist, filmmaker and wildlife journalist. She and her husband, John A. DiGiorgio, are founding directors of the Delaware Valley Eagle Alliance and co-owners of Nature's Art Productions LLC.

It was an early chilly spring morning, the mist still hanging low. I stood on my deck, coffee in hand, looking out over the river as I do most mornings. But today would be different. Looking out and enjoying the quiet, I didn't see it at first. Then glancing down I noticed a tiny reddish brown form in the vegetation under the pines below. Looking more closely, hidden, there was a newborn fawn.

From mid-May to mid-June most healthy whitetail does give birth to their families. Healthy whitetail fawns weigh 6-10 lbs at birth. Even though fawns may stand within minutes of birth, their speed and agility are not adequate to outrun most predators until they are about three weeks old. Therefore, does will "leave" newborn fawns to spend almost all of their time bedded in secretive locations returning to feed them once or twice a day. Although newborn fawns may start to eat vegetation within a few days of birth, they will not be able to properly digest the plant matter till they are about two weeks old. So, lying silently for hours at a time, not to attract predators, newborn fawns are able to rest, grow and become stronger.

When food is abundant and the previous winter not too harsh, does in the prime of life (4-9 years old) will typically give birth to twins. When "left" by the doe, twin fawns are separated which serves to further protect them. Knowing this, I looked about to see if there was a second fawn. Sure enough, a second fawn, lie hidden under the vegetation of another nearby pine. The twins remained hidden under the pines all day, occasionally standing to stretch or change position.

Newborn fawn twins bedded down separately but close under the pines.

The sun was beginning to set, when the doe returned. Walking along the banks of the river, she stopped just below our deck and the pines. There came a pattering of foot steps as the first and then the second fawn ran to their mother. Quivering with excitement they touched noses with her. The first, and later the second, then stepped around to her side to nurse. After a few minutes the doe stepped away and spent time licking and grooming them. She then led both of them a short distance to a stream which feeds into the river. The doe quenched her thirst while the fawns explored the cool clear water. It was getting dark and the family disappeared into the tall vegetation along the river bank. The twins were returned to the pines by our deck each morning for the next two weeks.

Play serves to strengthen a fawn's muscles and build up its stamina, and increases its chances of out maneuvering predators. While under the doe's careful watch, the twins would playfully run back and forth, zigzagging and occasionally bucking. Spring turned to summer and the twins continued to grow and develop. They joined their mother in her feeding excursions. They became excellent swimmers, even swimming across

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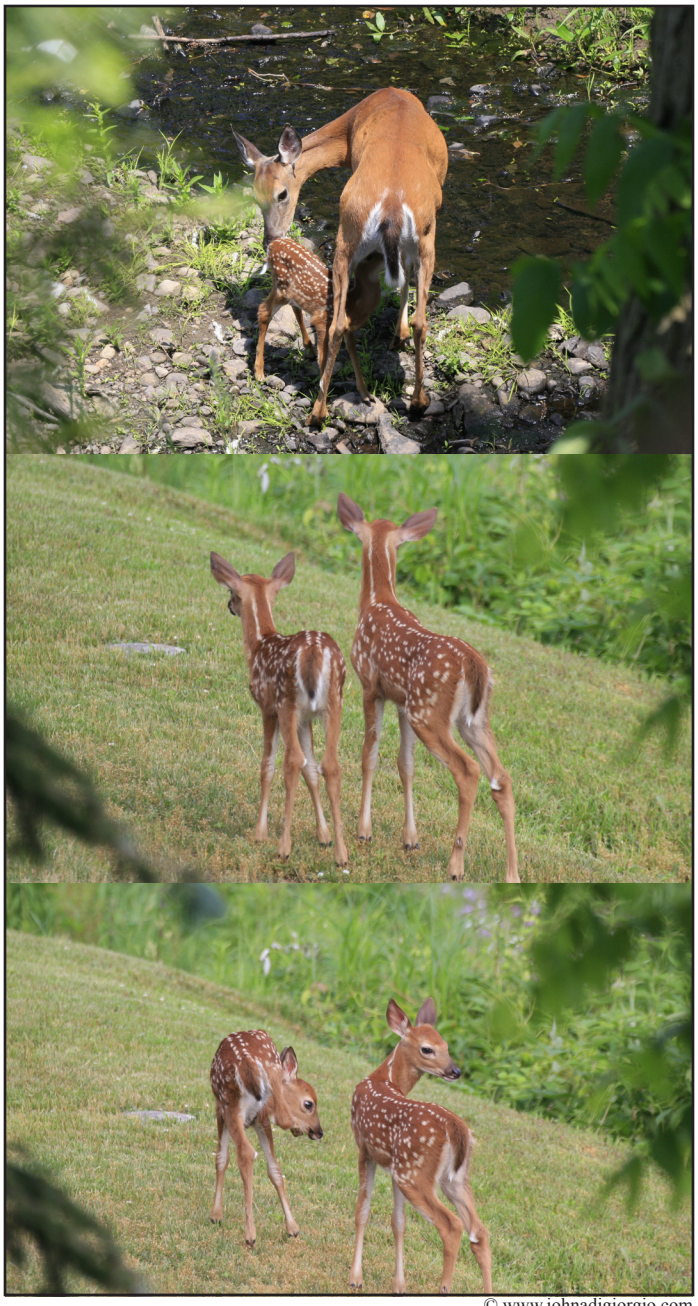

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Smaller twin greets its mother at days end (top); Twins now older explore the river banks with mom near by (center and bottom).

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FAWN TWINS ARRIVE

the river. One twin visibly grew larger than the other. All the while, the doe was always near and provided a careful watch over them.

It is now autumn and the fawns are no longer nursing. Soon the doe will molt from her reddish brown summer coat to her grayish brown winter coat. The twins will lose their white spots and will come to resemble their mother. Their bouts of playful activity will disappear as they assume the more sedate mature attitudes of the adult deer. A new generation has been raised - learning the ways of nature in order to prepare them for their survival.

O L D E S T
Banded Bald Eagle
Found in New York State

In early June, 2015 New York State Department of Environmental Conservation (DEC) staff received and responded to a report of a deceased eagle alongside a road in Henrietta, Monroe County. According to the bald eagle's leg band number (03142), it was 38 years old. The USGS Banding Lab Longevity Records indicate that the eagle, is the oldest banded bald eagle encountered in the nation to date--by five years.

According to banding records, this bird was a nestling originally brought from northern Minnesota as part of New York State's Bald Eagle Restoration Program. It was one of only five young eagles raised and released at the Montezuma National Wildlife Refuge in the second year of the program. The eagle was banded at few months of age in Seneca Falls, Seneca County, in August of 1977 and raised and released at the Montezuma National Wildlife Refuge. Once it reached breeding age in 1981, it began nesting at Hemlock Lake, now part of Hemlock-Canadice State Forest. The Hemlock Lake nest territory continued on, and this eagle, became a steady and successful father to many eaglets fledged from that site for many more years.

Peter Nye, retired DEC Wildlife Biologist, who spearheaded NYS's Bald Eagle Restoration Program reflected on the early days of the program stated, "*When we banded 03142 on August 5, 1977 and had no idea how very special and significant this young bald eagle would become to our nascent bald eagle restoration program. Based on his recent recovery near this site, we have to assume he has been the resident male, breeding here for the past 34 years. That's quite a stretch, and likely a record in itself. His longevity, 38 years, although ingloriously cut short by a motor vehicle, is also a National record for known life-span of a wild bald eagle. All I can say is, hats off too you 03142; job well done!*"

03142 was found with a freshly killed rabbit nearby and apparently had been hit by a vehicle. Vehicle collisions are one of the leading causes of eagle deaths in New York State, accounting for more than 30 percent of known recorded mortality.

SOURCE: "Oldest Banded Bald Eagle Found in Henrietta" - DEC Press Release (dated 6/15/15)

For more information on New York State's Bald Eagle Restoration Program:

http://www.dec.ny.gov/animals/7068.html

BALD EAGLE UPDATE:

Mid-Winter Bald Eagle Survey

The annual Mid-winter Bald Eagle Survey now in its 37th year, is coordinated nationally by the U.S. Army Corps of Engineers out of their San Francisco office, in partnership and with assistance from the previous coordinators at the Biological Resources Division of the U.S Geological Survey. Each January, several hundred individuals count eagles along standard, non-overlapping survey routes across the country. The number of states participating each year ranges from 38 to 49, and the number of standard survey routes per state ranges from 1 to 80.

The annual Mid-winter Bald Eagle Survey is a unique source of long-term, baseline data by providing information on both breeding and nonbreeding segments of the bald eagle population (estimating national and regional counts, overall and by age) at a potentially limiting time of year. It also provides an opportunity to monitor modifications or threats to habitat at important wintering areas.

Agencies are able to identify key eagle resources when access to open water is most restricted. There also is the added benefit of scouting for new eagle nests. Without leaves on trees, it is much easier to spot an eagle nest in January than when eagles are tending their young in spring and summer. Bald eagles build and repair their nests at this time of year and can be observed in this activity when the winter survey is conducted. Winter eagle roosts are a valuable resource and eagle surveys can assist with locating roost sites for further protection. With the growing nesting population, there is increasing competition for prime foraging and roosting locations. The activity centers of the states' eagles are constantly changing and the winter survey allows an assessment of how these changes are taking place. The survey has also helped to create public interest in bald eagles and their conservation.

The Mid-winter Bald Eagle Survey is coordinated in Pennsylvania by the PA Game Commission. Tracking the eagle population is an important component of the Game Commission's Bald Eagle Management Plan. PA is home to more than 273 nesting pairs of bald eagles (and growing) and others that migrate through or over winter.

The Mid-winter Bald Eagle Survey is now coordinated in New York State by the U.S. Army Corps of Engineers with Department of Environmental Conservation (DEC) and volunteer participation. NYS continues to provide consistent over-wintering habitat for one of the largest bald eagle populations in the northeast US. Observations confirm the importance of the wintering areas, not only to resident NYS bald eagles, but to numerous eagles from eastern Canada (as confirmed by DEC's extensive migration tracking

studies). The state's breeding bald eagle population also continues to experience consistent annual increases each year. The 2014 Breeding Survey coordinated by DEC and volunteer participation documented a total of 331 nesting territories (254 occupied pairs) statewide.

In 2014 New Jersey did not participate in the Mid-Winter Eagle Survey. Resident bald eagle numbers had continued to increase in NJ - 156 territorial pairs in 2014, up from 128 in 2013 - but the survey was no longer covering all the important eagle areas in the state. More emphasis is placed on locating and mapping communal roosting areas that may be important for winter survival. The Division of Fish and Wildlife's Endangered and Nongame Species Program biologists, Conserve Wildlife Foundation staff, and volunteer observers continue to locate and monitor bald eagle nests and territories as part of the state's bald eagle management and reported in it's Bald Eagle Project plan.

ADDITIONAL INFORMATION SOURCES:

http://gis.nacse.org/eagles/
http://www.nacse.org/nbii/eagles
http://www.portal.state.pa.us/portal/server.pt?open=514&objID=1667261&mode=2
http://www.portal.state.pa.us/portal/server.pt/community/birding_and_bird_conservation/21066
http://www.dec.ny.gov/animals/9377.html
http://ocid.nacse.org/nbii/eagles/
http://www.state.nj.us/dep/fgw/ensp/raptor_info.htm

DISCOVERING NATURE

Hummingbirds are among the smallest of birds. There are about 16 species of hummingbirds in the U.S. and Canada. It was traditionally thought that Ruby-throated hummingbirds were the only hummingbird found east of the Mississippi River, however, recent bird banding research has documented 11 other species in the east. While most of these are wandering vagrants, sightings of the Rufous hummingbirds have become much more frequent during the past few years.

You can attract hummingbirds by planting red flowers and putting up a hummingbird feeder. Hummingbirds get the energy they need to maintain their astonishing metabolism primarily from flower nectar and the sugar water they find at feeders. For protein and other nutrients, they also eat soft-bodied insects and spiders. It is important to properly clean your feeder and replace the sugar water as needed. This will ensure that you will continue to enjoy observing hummingbirds as they continue to return to your feeder.

On Humming Birds - Did You Know?

- Hummingbirds are the only bird that can fly backwards as well as hover in one spot like an insect. They are constantly in motion, except when they perch on a branch briefly to rest, or are at the nest.
- Female hummingbirds build nests out of soft silky materials such as thistle down, bound together by spider webs and caterpillar silk.
- Hummingbirds possess a long slender tongue that can be extended far beyond the tip of the bill enabling them to reach the nectar at the base of a flower.
- A hummingbird's heart rate, which is typically 250 beats per minute, can soar to 1,250 beats per minute.
- They can beat their wings 60 to 200 times per second.
- They can live 5-6 years in the wild.
- Consume about half their weight in sugar each day.
- The Ruby-throated hummingbird adds 2 grams of fat to its 3 gram frame before setting out to fly non-stop across the Gulf of Mexico.

THE DELAWARE VALLEY EAGLE ALLIANCE

working towards the conservation of our wildlife and natural resources

ABOUT US

The Delaware Valley Eagle Alliance is a 501 (C)(3) not-for-profit organization; our mission: to increase awareness, understanding and promote conservation of our wildlife and the natural environment.

We believe that raising awareness and understanding will change attitudes toward conservation and our natural resources. We are committed to this because we believe that it essential to enabling all life to exist and prosper on Earth.

We are dedicated in our focus to bring awareness through our publications, educational programs and events and projects.

ABOUT OUR PROGRAMS AND EVENTS

We work with communities and other organizations on wildlife and environmental programs and events. Our focus, education and entertainment, is accomplished by providing enhanced programs with new speakers and presentations and providing all attending, young and old, opportunities to see and experience new and interesting programs.

ABOUT OUR PROJECTS

We are available to work closely with biologists and conservation groups to document ecological and wildlife research on rare, sensitive and endangered wildlife and environmental issues.

Would you like to discuss having a program or event in your community? Would you like to discuss a possible project? Please contact Yoke Bauer DiGiorgio at jyd630@aol.com or call 201-841-5158.

SUPPORT

The Delaware Valley Eagle Alliance grew out of a grassroots effort of individuals who want to help protect our wildlife and habitat. Our organization depends on responsible citizens and organizations who share our concern for the environment. Our educational publications, documentaries, programs and events would not be possible without the generosity of our sponsors and supporters.

For more information and/or to make a tax deductible donation, please contact Yoke Bauer DiGiorgio at jyd630@aol.com or call 201-841-5168.

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