

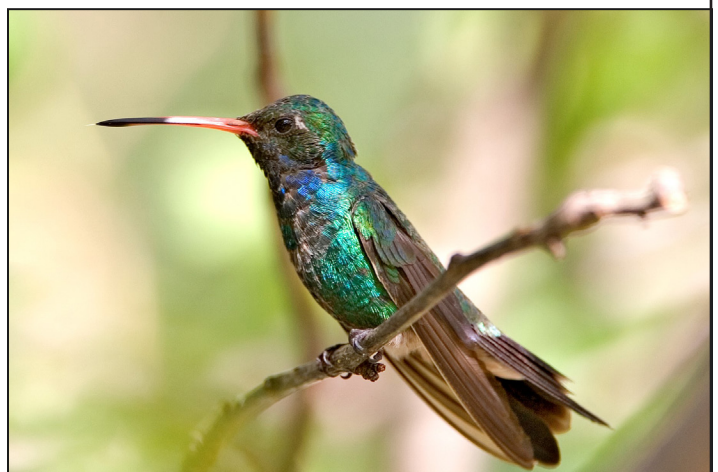
D V E A

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© Dave Numer; Photographer
The Pinyon Pine in front of the Nature Center is over 400 yrs. old.

DEVIL'S PUNCHBOWL COLLECT SEEDS, SAVE THE PINYON PINE

by Dave Numer
Regional Park Superintendent, Los Angeles County Fish & Game Warden

Remarkable and critically important, the Devils Punchbowl is a natural area, where mountains meet the desert. Located within the San Gabriel Mountains National Monument and Angeles National Forest in California, I am so fortunate to have been able to spend the last 43 years of my working life here.

I collect Pinyon Pine seeds each year to grow seedlings because our Southern California *Pinus monophylla* forests and woodlands have nearly all vanished in the past fifty years due to numerous fires. Pinyons grow on the dry slopes of mountains above the desert and are the first pines as you climb in elevation. They don't survive fires but have to be reseeded by birds and rodents from outside the burn area. They can be hundreds of years old and don't start producing seeds until they are twenty or more years of age.

Only bumper crops of seeds will aid in the reforestation because in small seed production years all the seeds are consumed by the animals. Bumper crops may come as seldom as every 15-20 years. It could take a thousand years to re-establish a forest if the burn area is very large.

By collecting seeds and growing young trees, I hope to preserve the genetics of our local trees if a fire comes through and destroys our trees. The tree in front of the Nature Center is over 400 yrs. old and is much more valuable than the Nature Center. The Nature Center could be replaced in weeks. The trees are our real important resource. www.devils-punchbowl.com



Because javelinas are not pigs, the babies cannot be called "piglets". They are called "reds" due to their reddish color.

© www.southwestwildlife.org

The JAVELINA EXPERIENCE

*by Kim Carr, Animal Care Manager and Kris Weaton, Animal Care Specialist
Southwest Wildlife Conservation Center*

Each time we mention javelina there are lots of questions about what a javelina is. Here's a bit more information.

Javelina (pronounced have-a-LEEN-a) is the common name for the collared peccary. Peccaries are included in the Order Artiodactyla (even toed ungulates), where you will also find pigs, hippopotamuses, camels, llamas, mouse deer, deer, giraffes, pronghorn, antelopes, sheep, goats, and cattle.

While peccaries resemble pigs, they are not pigs. Instead, they are part of the Tayassuidae family, while pigs belong to the family Suidae. Many physical characteristics distinguish the two families of animals. Peccaries have small ears and their tails are not easily seen from a distance. Pigs have upright ears and long, hairy tails. Peccaries have three toes on the hind foot; pigs have four. Canine teeth (tusks) in peccaries are straight, while they're curved in pigs (like wart hogs). Another interesting difference is that pigs give birth to large litters of helpless young, while peccaries generally



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The JAVELINA EXPERIENCE

give birth to twins, who are up and running with the herd shortly after birth.

The collared peccary (*Pecari tajacu* or *Tayassu tajacu*), our javelina, is found in Texas, New Mexico, Arizona, and south into Argentina. They can weigh 40 to 60 lbs. and stand about 20" tall. Their coats are thick and bristly with salt-and-pepper coloring and a lighter band of hair around the neck and shoulders (which resembles a collar).

Javelina will eat shrubs, grass, mesquite beans, cacti and various roots and tubers. The availability of food will often determine a herd's location. Javelina have poor eyesight, but a good sense of smell. The scent gland on their back near the rump has a strong musky smell.

Many people have said they can smell a herd of javelina before they see them. Members of a herd will rub cheek to hip (a javelina handshake!) to share this scent among the herd members. These individual scents, when combined, form a sort of herd perfume which they use to identify members of the herd. If you don't smell like family, you're not welcome in their territory. When they smell danger, javelina will freeze, let off that musky odor, and clack their tusks in warning. They may charge, but more likely, due to their poor eyesight, they're simply scattering in all directions in an attempt to escape.

It's a good idea to be careful with your dog if you live near javelina. They are very alert for predators, especially coyotes, so they may react defensively toward a dog, especially if there are babies in the herd. Keeping your dog on a leash is a good idea, and avoiding areas where there are javelina herds will help to keep you and your dog safe.

Don't feed javelina and encourage your neighbors not to either, as this will draw them into your neighborhood and can create conflicts.

Part of the job of an animal keeper at Southwest Wildlife Conservation Center is to raise orphaned animals that come to our center. Caring for newborns often requires bottle or syringe feeding until they're old enough to eat on their own. The idea of bottle feeding a helpless little baby conjures up certain images. You might envision a peaceful experience as a baby quietly suckles from the bottle until their belly is full and they're ready for a nap. While this may be an accurate portrayal of some species we care for, it doesn't come close to describing the "javelina experience."

When javelina orphans arrive, we know they're missing their families and that's why we do everything possible to make them feel safe and secure; warm incubator, fuzzy blanket and a stuffed animal to cuddle. Feeding time is when the real challenge begins.

Did you know javelina are born with teeth? So much for



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DID YOU KNOW? JAVELINA

Javelinas can actually run pretty fast, having just three toes on each hind foot. They have been known to run as fast as 35 MPH and can leap 6 feet!

The ancient Mayas honored the Javelinas by naming a goddess "The Great white Peccary" and a king "Precious Peccary".

<https://a-z-animals.com/animals/collared-peccary/>
<http://www.alpinemeadowswildliferehab.com/funfacts.htm>

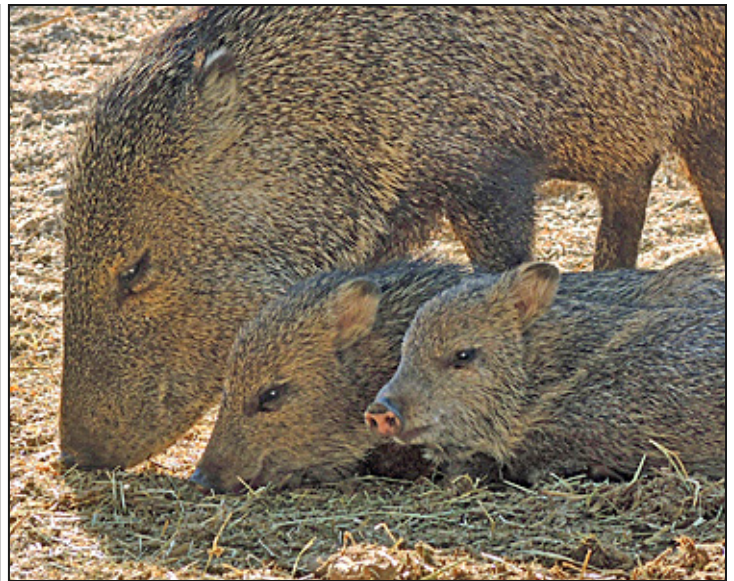
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The JAVELINA EXPERIENCE



Javelinas are herd animals with a social hierarchy.



© www.southwestwildlife.org

the relaxing experience. Bottle feeding quickly becomes a frustrating game of tug-o-war which the javelina always wins. And don't you dare try to rush them. They know when you're pressed for time and will make sure to be extra uncooperative. Just for fun, they like to rip the nipple off the bottle and toss it clear across the room, spraying formula everywhere.

As an added bonus, we put canned pumpkin in their special diet. This results in splattered orange mess all over the walls, our clothes and usually our hair! It's tough to explain the dried pumpkin in your hair when you stop at the grocery store on the way home from work. It's best to bring a double dose of patience and a hazmat suit for the "javelina experience."

Once they're eating from a dish, it means less pumpkin on us and more on them. We would love to bathe them, but they'd never agree to it. We don't mind spunky javelina. It's a positive sign that they're doing well!

How do we stay sane with all the javelina we raise year-round? With a sense of humor and knowing they'll eventually be released back into the wild where they belong!

Would you like to help us care for javelina? Join our Wild Family to give a monthly donation:

<https://www.southwestwildlife.org/donate/wildfamily/>

The best way to show your support is to come see the javelina at Southwest Wildlife Conservation Center in Scottsdale, Arizona. Schedule yourself for a tour:

<https://www.southwestwildlife.org/visit-us/>

We look forward to seeing you!



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SAVING OUR WILDLIFE, ONE LIFE AT A TIME

Located in Scottsdale, Arizona, the **Southwest Wildlife Conservation Center** rescues and rehabilitates wildlife that has been injured, displaced, and orphaned. Once rehabilitated, they are returned to the wild. Wildlife education includes advice on living with wildlife and the importance of native wildlife to healthy ecosystems. Educational and humane scientific research opportunities are offered in the field of conservation medicine. Sanctuary is provided to animals that cannot be released back to the wild.

Southwest Wildlife has rehabilitated thousands of sick, injured, orphaned or displaced wild animals, including: Black bear; Bobcat; Coati; Coyote; Deer; Jaguar; Javelina; Mexican grey wolf; Mountain lion; Porcupine; and Raccoon. More than 70 percent have been successfully released back into the wild.

For more information:

www.southwestwildlife.org



© Jan van der Kam, Photographer; From book - *Life on Delaware Bay*

The red knot (Calidris canutus), a medium-sized shorebird, has one of the longest migrations of any bird. Every year it travels more than 9,000 miles from the Arctic to the southern tip of South America. Red knots can double their weight prior to migration. And like many migratory birds, they also reduce the size of their digestive organs prior to migration.

HOW DOES EAGLE CONSERVATION INFORM SHOREBIRD CONSERVATION?

by Lawrence Niles PhD

***LJ Niles Associates, and former Chief of Endangered and Non-game Species Program
Division of Fish, Game, and Wildlife, NJ DEP.***

After a successful 25 year career at the New Jersey Division of Fish and Wildlife, first as a biologist then as chief of the Endangered and Nongame Species Program, that included heading up the Bald Eagle Recovery Project, Delaware Bay Shorebird Project and other projects on many of NJ's rare species, Dr. Niles retired from the State. He started his own company in 2007, LJ Niles Associates, to pursue independent research and management projects on shorebird ecology and conservation and habitat conservation through planning and restoration.

The recovery of NJ's Bald Eagles is the state's most successful and enduring conservation effort. After decades of decline only one eagle pair remained in 1980, hidden within a remote forest in Cumberland County. Today there are more than 150 nesting pairs of eagles in the state. Most

nests occur along the Delaware Bay shoreline but eagles can now be found statewide. Additionally, as numbers in NJ and surrounding states grew, the number of eagles wintering in the state and especially along the Delaware River and Bay, have increased dramatically.

There were several keys to this success: a seriously muscular land use regulatory system, a well-supported corps of volunteer nest watchers, and competent state biologists who kept a persistent focus on recovery. With long term funding afforded by federal aid programs, the project maintained its success over time. In the end it seems the most important influence was a public that cared and made sure in myriad ways that agencies did their job to protect eagles.

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HOW DOES EAGLE CONSERVATION INFORM SHOREBIRD CONSERVATION?

So what can we learn from this wonderful success, especially now in this time of rapidly diminishing hope for wildlife in the US. Much of my work now focuses on the shorebirds and horseshoe crabs of Delaware Bay. When one compares our efforts to protect the shorebird stopover on Delaware Bay to our success at eagle conservation, how does it fare?

To be sure we have a well-developed group of volunteer scientists and a passionate public. Together we have created one of the longest standing and most productive wildlife projects in the country. Much the same way land use regulators protected eagle habitat, they guard the Bayshore marsh and upland edge with determination and good intention. To some extent, the state system faltered in the face of an intertidal land grab by industrial level oyster aquaculture, but even there small aqua culturists and conservationists working together might still prevail to the benefit of both the economic and ecological resources.

But unlike the eagle, shorebirds require a key food resource of immense value -horseshoe crabs. In the 1990's and continuing until today, the agencies allowed the horseshoe crab to be chewed up in the maw of the industrial fishery that dominates the mid-Atlantic. Why allow the destruction of a keystone species that anchors one of the great migration stopovers in the world? There were several major players in this destructive ecological game.

The first was to use horseshoe crabs as bait for the relatively puny fisheries for couch and eel. It took years for the agencies to sort it out, ending in a catastrophic depletion of crabs to less than a third of their historic population. Ironically both eels and couch suffered the same fate. The couch declines in size every year, an important sign the fishery is about to collapse. Similarly, eels grow fewer each year, a tragic decimation of one of the most interesting migrations of all animals. The American Eel breeds in an equatorial backwater in the center of the Atlantic Ocean called the Sargasso Sea. They breed there and the young migrate to estuaries like Delaware Bay. Mismanaged harvests of eels and their young led to a federal listing proposal in 2014 but this was defeated. Unfortunately, life as bait was not the crabs' biggest threat.

A second and more important threat to horseshoe crab comes from the use of their blood as a source for the valuable pharmaceutical biochemical Limulus amebocyte **lysate** (LAL). This complex biochemical detects bacterial endotoxins in everything medical that going into a human body. Medical companies rake in hundreds of millions every year to extract it, refine it and sell it. Greed rules these companies because despite the huge profits, they spend nothing on the conservation of the horseshoe crabs. Yet they have contributed to the local extinction of



© Jan van der Kam, Photographer; *From book - Life on Delaware Bay*
In the Delaware Bay, migration red knots feed in large numbers on the eggs of horseshoe crabs which spawn just as the birds arrive in mid-summer (They are tactile feeders, probing for unseen prey in the mud.).

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HOW DOES EAGLE CONSERVATION INFORM SHOREBIRD CONSERVATION?



DID YOU KNOW? The oldest recorded red knot was 15 years, 11 months plus old. It was banded in 1986 in New Jersey and recaptured and rereleased during banding operations in Delaware in 2001.

© Jan van der Kam, Photographer; From book - *Life on Delaware Bay*

horseshoe crabs throughout the world and now focus on the horseshoe crabs in Delaware Bay. Currently, there are five bleeding labs using crabs from the Delaware Bay. Most reside in MD, whose compliant regulators require virtual nothing from the companies, not even valuable information on their harvest.

The third threat to horseshoe crabs is the rapidly expanding oyster aquaculture industry. Although most aqua culturist clearly seek to diminish their impact, the industry backing them seems intent on expanding their reach into every horseshoe crab breeding area on the bay. They tried this through politically driven rules that thwarted state's system of environmental review but were only stopped by the federal listing of the red knot. Now conservationists and the industry engage in an acrimonious battle that portends loss for both crabs and small business aquaculture.

The odds are in favor of all three industries. Although agencies require concessions from each group they don't estimate the accumulated impact on the crab population or the shorebird stopover. All industries make money from horseshoe crabs, free of any responsibility to replace their ecological losses.[/caption]

So this is the existential threat to shorebirds that Eagles didn't have to face - a systematic depletion of their main food source. Industries consume horseshoe crabs and habitat without regard to their collective impact and in response agencies risk only stop gap solutions that give away crabs at conservation-free costs. Why? Because they are not being compelled to do otherwise.



© Jan van der Kam, Photographer; From book - *Life on Delaware Bay*

MORE ABOUT RED KNOTS (*Calidris canutus*)

Red knots breed in the far north of Canada, Europe, and Russia.

Territorial and seasonally monogamous, males construct several shallow scrape nests in their territories prior to the arrival of the females. The female typically lays 3-4 over the course of 6 days. Both parents incubate the eggs with incubation lasting about 22 days. Hatching of the clutch is usually synchronized.

The chicks and the parents move away from the nest within a day of hatching and begin foraging with their parents. The female leaves before the young fledge while the males stay on. After the young have fledged, the male begins his migration south and the young make their first migration on their own

RESOURCE:

https://en.wikipedia.org/wiki/Red_knot

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HOW DOES EAGLE CONSERVATION INFORM SHOREBIRD CONSERVATION?

The eagle restoration teaches there is only one surefire way to fix this. First, the people whose lives have been touched by shorebirds must act to help others be touched in the same way. This could be as remote as watching a relevant YouTube video or reading something substantive, like Deborah Cramer's book "The Narrow Edge".

But better for the birds and horseshoe crabs is helping them in some meaningful way. This could be as a volunteer working on the shorebird banding team, or the beach stewardship project, or ReTurn a Favor horseshoe crab rescue project or even those who help volunteers, like Citizen United's shorebird chef program (my favorite!). These people understand and admire bird and crab, much in the same way eagle volunteers did for bald eagles.

These practiced and knowledgeable volunteers will naturally touch many other people in their lives and ultimately they will reach the regulators and politicians. It's already in motion, we see the impact of in the consideration given to the shorebirds in agency actions now. But we are only at the beginning, more people are needed.

Those who feel compelled to help should not be confused by conflicting scientific opinions. Putting aside the real impact of "fake news", one should keep in mind that resource biologists, like most people, are not immune to the promotional advantages of "being the devil's advocate" or using uncertainty to favor the interests important to the more powerful.

Resource Biologists like most scientists, love the back and forth discussions about ecological minutia and to some extent so they should. But all too often they refuse to recognize their contrary explanations fuel the destructive consumption of natural resources by delaying the hard choices necessary to rein in the excesses. Let's face it giving industry cover often creates an easier path to grants, promotion or tenure.

But for those of us who care to help, this is only a distraction. In the final analysis eagles recovered not because biologists were smart but because the public demanded their recovery. And why not force agencies into action, after all aren't eagles worthy of existence. In the same light aren't shorebirds and horseshoe crabs worthy in the same way?

Actions done to help birds and crabs cause no harm and require no prior political ideology. We only need the desire to do good for wildlife and in so doing, lift the prospects for a part of God's creation that has little voice and few defenders.

Certainly, that's a worthwhile enterprise in itself!



© Photographs provided by Lawrence Niles

Top: Lawrence Niles with banded red knot; **Bottom:** Volunteers, the 2017 Shorebird Banding team. Started in 1997, it is one of the longest standing teams in the world and has banded more shorebirds, done more surveys and research than any volunteer group in the US. Members have included citizens of US, Canada, England, Australia, New Zealand, Brazil, Argentina, Chile, Panama, Mexico, Kenya, China, South Africa, Norway, Holland and France.

Additional Information and Resources:

<http://arubewithaview.com/>
<http://www.deborahcramer.com/books/the-narrow-edge-red-knot/>
<http://www.conservewildlifenj.org/protecting/projects/shorebird/>
<http://returnthefavornj.org/>
<https://www.cumauricriver.org/pages/about.html>
<http://www.iucnredlist.org/details/22693363/0>
https://www.allaboutbirds.org/guide/Red_Knot/lifehistory

About the Book "Life Along the Delaware Bay"

<https://www.amazon.com/Life-Along-Delaware-Bay-Shorebirds/dp/081355246X>



Left: Black-chinned adult male hummingbird. **Insert and Right:** Sky islands in Arizona.

© Photographs Provided by George C. West, Photographer

BANDING HUMMINGBIRDS in the Sky Islands of Arizona

by Carol A. Butler
Naturalist and Author

Sky islands are isolated mountains surrounded by lowland environments, and they are among the most diverse ecosystems in the world. They make a vertical transition from tropical desert to temperate forest and are home to an astonishing range of species.

The 70,000 square mile sky island region of the United States covers southeastern Arizona, southwestern New Mexico, and northwestern Mexico. Each island averages 6,000 to 8,000 feet high and the desert climate morphs on the islands into a much cooler forest as the altitude increases. This variety offers resident and migratory species a range of climates that support over half of the North American bird species, 29 bat species, over 3,000 species of plants, and 104 species of mammals including mountain lions and black bears. The area is also home to several species of hummingbirds, which is why the sky islands were chosen as part of a banding project.

You commonly hear about the banding of songbirds and raptors, but rarely about the banding of hummingbirds. Banding a hummingbird is a very precise, delicate and specialized activity. It is also a carefully regulated process that must be performed only by trained and licensed banders. The federal Bird Banding Laboratory (BBL), administered by the United States Geological Survey, authorizes trained personnel to capture and band wild birds, including hummingbirds, for research and educational purposes. Hummingbird bands are issued only to banders who have received training on the specialized banding techniques and are authorized to band specified species.

George C. West, one of only 100 licensed hummingbird banders in the United States and Canada, processed over 14 thousand hummingbirds in the sky island area over a period of seven years as part of research

conducted by the Hummingbird Monitoring Network (HMN). HMN (<http://www.hummonnet.org>) is a science-based, project-driven, nonprofit organization dedicated to the conservation of hummingbird diversity and abundance throughout the Americas. This research involved extensive monitoring of multiple sites with the goal of determining which areas are the most important for hummingbird survival.

Every other Monday from March to October, George set up a banding station at an altitude of 5300 feet on a sky island in Madera Canyon within the Coronado National Forest in the Santa Rita Mountains south of Tucson, Arizona. For five hours beginning at sunrise, he trapped, quickly processed, and released all the hummingbirds that came to his feeders, assisted by a trained group of volunteers. I feel so fortunate that

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BANDING HUMMINGBIRDS in the Sky Islands of Arizona



© Photograph Provided by George C. West, Photographer
Carol A. Butler holding a recently banded hummingbird now ready for release.

I was able to join George and the volunteers in Arizona several years ago to observe and assist in the banding effort.

When an authorized researcher captures hummingbirds for banding or study, the goal is to safely capture the birds without harming them or causing them more than minimal stress. The best method we know of is the Hall trap, a collapsible cylindrical trap that can be easily carried and rapidly set up to trap hummingbirds. The trap consists of a firm wire or plastic mesh top and bottom, each about two feet in diameter, and a weighted mesh curtain that forms its sides. The curtain is raised by lines that lead to a trigger line that is held several feet away by the trapper. A feeder is hung in the center of the trap, and when a bird lands on the feeder, the trapper releases the trigger line and the curtain falls, trapping the bird inside. The bander then lifts the edge of the curtain and catches the bird in his or her hand.

George carefully removed each bird from the trap and placed it in a soft mesh bag (he used a knee-high nylon stocking). He examined each bird in the order in which it was captured, usually assisted by a volunteer who noted the location, date, and time, and recorded the detailed information he dictated during the one- or two- minute examination of the bird. Species, sex, and life stage of the bird were noted. The color of the plumage and shape and pattern of certain feathers were described for identification purposes and its wing, tail, and bill were measured. Each bird was checked for molt and weighed, and its abdomen was examined for signs of migratory fat or evidence of an egg within.

If the bird was already wearing a band, its number was recorded; if not, George applied a tiny, uniquely numbered band to its right leg. Then he refreshed the bird with a drink of sugar water and deposited the recovering bird in the hand of a volunteer. After a few seconds in the safety and warmth of the hand, the bird would open its eyes, look around, and then fly off.



© Carol A. Butler, Photographer
Top: Photograph of a Hall trap. **Center:** Hummingbird being weighed.
Bottom: Hummingbird being fed sugar solution to refresh and prepare it for release.

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BANDING HUMMINGBIRDS in the Sky Islands of Arizona



Hummingbird Photographs Left to Right: Broad-billed adult male; Violet-crowned adult; Mexican woodnymph adult male; and Magnificent adult male.

© Photographs Provided by George C. West, Photographer

Bird bands are issued by the BBL and because hummingbirds are so small and cannot manipulate the bands, the band can be very thin and pliable. The band is curled with special banding pliers so that the butt ends meet cleanly (but it doesn't require a lock as do bands for larger birds). The unique five-digit number on each band is preceded by a capital letter on a hummingbird band; for all other birds, the letter is replaced by a string of three to four numbers because there is more room on the band.

All bands, except hummingbird bands, have a message printed on the inside instructing the finder to report it to the BBL, but hummingbird bands are just too small to print that message. All banders are required to submit banding records annually to the BBL, and the records are stored in a master database that is accessible to all researchers.

Participating in a banding project is such an exciting and satisfying experience. Banding allows researchers to positively identify individual birds and to learn about their history. It establishes that a bird was at a particular place on a specific day, and recapturing the bird provides information about how long the bird has lived and if and how far it has migrated.

And weighing in at less than a penny, hummingbirds are so very special!

DID YOU KNOW? Hummingbirds

Are the only bird that can fly backwards as well as hover in one spot like an insect.

Are constantly in motion, except when they perch on a branch briefly to rest or survey their surroundings, or when they are at the nest.

Females build nests out of soft silky materials such as thistle down, bound by spider webs and caterpillar silk.

Possesses a long slender tongue that can be extended far beyond the tip of the bill enabling them to reach the nectaries at the base of a flower.

Has a heart rate, which is typically 250 beats per minute, can soar to 1,250 beats per minute when they fly.

The Ruby-throated Hummingbird (*Archilochus colubris*), the only Hummingbird species breeding east of the Mississippi, adds 2 grams of fat to its 3 gram frame before setting out to fly non-stop across the Gulf of Mexico.

For information about
Carol A. Butler and
the many wildlife / environmental
books and articles she has authored:
www.members.authorsguild.net/cabutler/





LEFT and LOWER RIGHT: © www.rwpzoo.org/conservation/local-conservation UPPER RIGHT: <https://newenglandcottontail.org/> (M. Poole, USFWS)

NEW ENGLAND COTTONTAIL WORKING TO SAVE A RARE RABBIT

by Barbara Russo
Naturalist and Author

The Roger Williams Park Zoo in Rhode Island, one of the oldest zoos in the country, is home to a beautiful array of animals. Located in the state's capital, Providence, visitors to the zoo can see and learn about African elephants, cheetahs, snow leopards and many other exotic creatures. In addition to providing education and awareness about these majestic animals from around the world, the zoo is doing its part to save a tiny but critically important species that is closer to home: the New England cottontail.

As New England's only native rabbit species, the New England cottontail can be found in six states: Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island and New York. But over the last 50 years or so, this rare species' habitat has shrunk by 80 percent, due mostly to development. New England

cottontails require young forests to find food, raise their babies – known as kits – and hide from predators. As these thicket-full young forests grow up or diminish, so does the number of rabbits.

The Roger Williams Park Zoo started breeding New England cottontails in 2011 as part of a multi-state, multi-agency initiative to bring back the bunnies. Spearheaded by Louis Perrotti, Director of Conservation Programs at the zoo, the goal was to restore populations in areas in Rhode Island and New Hampshire where the species was not found. And the initiative has been quite successful, with almost 200 captive-bred rabbits having been introduced to wild habitat by 2016.

"I'm very happy. We can keep them alive and happy and healthy in captivity and then put them on an island that wasn't populated with

these rabbits before," Perrotti said. That island being Patience Island, off the coast of Rhode Island and one of the sites of New England cottontail introduction.

So how does captive breeding of a wild rabbit work? It begins with some interior designing to create habitats and conditions that help make the rabbits as comfortable as possible to help encourage breeding. At first, males and females are housed separately. Each pen has piles of hay, hollow logs and other structures for them to hide in, just as they would in the wild.

"We have four large outdoor pens with males. Then we put the females in with the males for four days straight," Perrotti said. After this, the females return to their own enclosures. Hopefully at this point, after a long weekend of fun - so to

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NEW ENGLAND COTTONTAIL WORKING TO SAVE A RARE RABBIT



Photograph provided by Roger Williams Park Zoo

speak - breeding has occurred.

But, unlike the popular saying, not all rabbits breed like...rabbits. There are challenges when it comes to captive breeding of the wild ones, especially when the program started, when Perrotti and fellow scientists were still learning about the process. And when founder rabbits are brought in from the wild, there is no way of knowing their true age. It is possible some of them are no longer able to reproduce.

The cottontail breeding season at the zoo generally begins at the end of February and lasts till the start of October.

"We want to make sure we give them the best chance possible to survive. We try not to release them after October 1 because the food availability isn't as good," Perrotti explained.

The work does not end once the rabbits are out on their own. Some are fitted with radio collars so scientists can track how long the animals live and gather other important data.

Recently, the zoo partnered with

the Wildlife Conservation Society's Queens Zoo, adding a second location for New England cottontail captive breeding. Other partners in the initiative include the U.S. Fish & Wildlife Service (USFWS), other state agencies and universities.

Zoos are places to discover and foster an appreciate for wildlife. In addition to providing children and adults the opportunity to see beautiful animals close up, more and more AZA-accredited (Association of Zoos & Aquariums) facilities are establishing and taking part in conservation efforts like New England cottontail breeding to help save species locally and around the world.

A little history about the New England cottontail: In the 1930s, the non-native eastern cottontail was introduced from the Midwest to New England to benefit hunters when the native species of rabbit started to decline. Easterns are much more abundant in New England and look strikingly similar to New England cottontails. The only way to reliably tell them apart is through DNA analysis.

Eastern cottontails seem more

resilient than New Englanders and can thrive in more open spaces with less brush and thickets. According to <https://newenglandcottontail.org/>, "The New England cottontail is restricted to southern Maine, southern New Hampshire and parts of Massachusetts, Connecticut, Rhode Island and New York east of the Hudson River – less than a fifth of its historic range."

Although still a rare species, it is not all gloom and doom these days. Fast forward to 2015 when the New England cottontail was being considered for protection under the country's Endangered Species Act. As conservation programs such as the one at the zoo and efforts by private landowners have been productive, the USFWS found that federal protection was not necessary.

While the New England cottontail is proving to be a total conservation success story, there is still much work left to do to significantly increase the number of captive-bred rabbits to their native wild habitats. Here's to a promising future of counting cottontails.

Located in Providence, RI, Roger Williams Park Zoo, an accredited member of AZA, is one of the oldest zoos in the country.

More Information: <http://www.rwpzoo.org/conservation/local-conservation/new-england-cottontail>



Photograph provided by Roger Williams Park Zoo
Released tagged cottontail rabbit.

DO RABBITS MAKE GOOD PETS?

Rabbits are fast gaining acceptance as charming and warm household companions.

Rabbit ownership, according to current data from the American Pet Products Manufacturers' Association, has increased dramatically over the past decade. From 1992 to 2000, the percentage of "small animal households" owning rabbits increased from 24 percent to 40 percent. There are now an estimated 5.3 million companion rabbits owned by 2.2 million households in America.

Rabbits make wonderful pets in the right situations:

Rabbits make little to no noise.

Rabbits actually have very distinct personalities. They can be charming, affectionate and very interactive. When choosing a rabbit as a pet, it is important to spend time getting to know him/her to be sure your personalities fit.

Rabbits bond closely with their owners. Just like dogs or cats, rabbits get to know their owners well. They recognize them by voice and sight and will even come on command. Rabbits may even follow their owners from room to room and jump up on their laps when called.

Rabbits need less space than other pets. As long as rabbits get a couple of hours of exercise running around outside of their cages in a rabbit-safe room or house, they may be kept in relatively small cages. The space needs to be large enough for them to stretch out in and allow room for a litter pan in one corner and a feeding station for hay and pellets in another.

Rabbits are generally very clean pets. They can easily be litterbox-trained and will generally keep themselves very clean with frequent grooming. In addition, owners can help keep their rabbits (ie long-haired rabbits) clean by brushing them to keep their coats from matting.

Pet rabbits, when housed indoors and cared for properly, can live 8 to 12 years, or even longer.

There are 49 recognized rabbit breeds that vary both in size and in coat color, length and texture.

Interested in acquiring a rabbit? Adopting from a shelter or foster home, rather than purchasing from a pet store or breeder, is a win-win. There are many rabbits given up to shelters every year that adopting a needy rabbit is a relatively easy thing to do. Rabbit shelters can be found in nearly every state, and the Internet is a great resource for finding one near you.

RESOURCES:

<https://www.petfinder.com/pet-adoption/other-pet-adoption/are-rabbits-good-pets/>

<http://www.vetstreet.com/our-pet-experts/bunny-benefits-10-reasons-a-rabbit-might-be-the-pet-for-you?page=2>

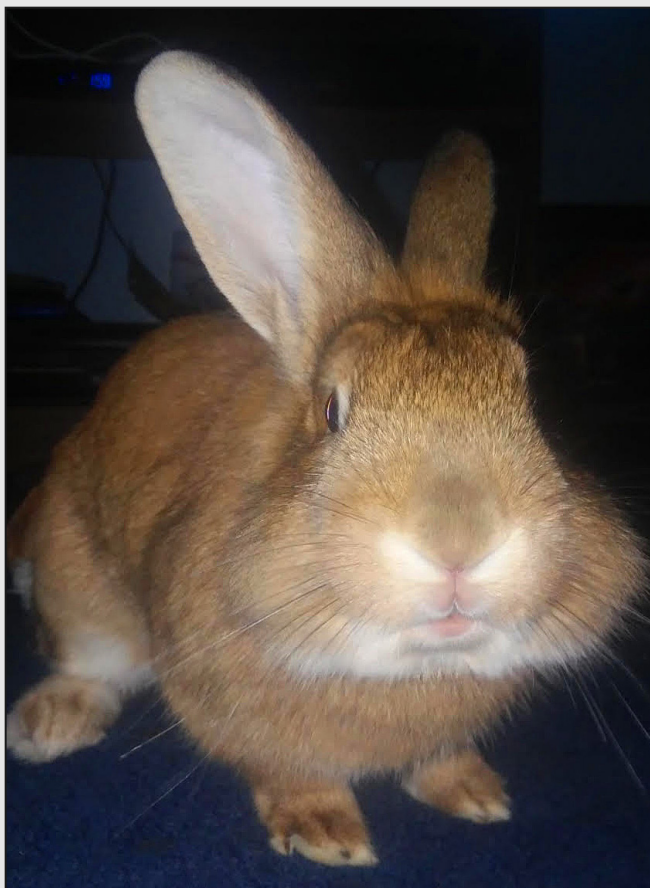
ADDITIONAL INFORMATION:

www.rabbit.org

The national House Rabbit Society's comprehensive site on rabbit health, care and behavior, with articles by licensed HRS educators and expert veterinarians, along with links for adoptable rabbits across the country.

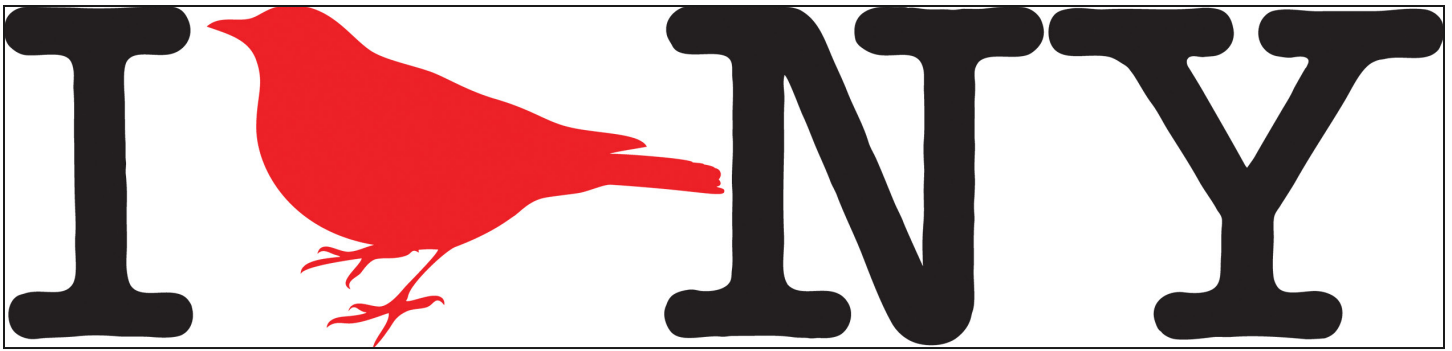
www.morfz.com

A source of recommended veterinarians, a drug-dosage calculator, articles on health and behavior and links to other rabbit-related sites.



© Cody Shaw, Photographer

MEET BUTTERSCOTCH - Butterscotch is a mixed breed rabbit, half rex and half lionhead (Rex rabbits have really short velvet-like fur, and whiskers that are either short or all curled up; Lion heads come in either single mane or double mane. They all have fluffy manes that encircle their heads and faces, very similar to an actual lion's mane!).



I BIRD NY

Bird watching is one of the fastest growing outdoor recreational activities that can be enjoyed by all ages and experiences. It's also a great way to get outdoors and enjoy the environment. From Montauk to Buffalo, New York State is home to a vast array of amazing habitat that supports over 450 different bird species.

This past May, New York State Department of Environmental Conservation (DEC) Commissioner Basil Seggos announced the launch of **I BIRD NY**, an initiative to build on increasing access to the state's vast natural resources and promote low-cost opportunities to explore the great outdoors and connect with nature.

As part of I BIRD NY, the state launched a website portal, I Bird NY, with information on where and how to bird watch, including upcoming bird walks and additional resources. I BIRD NY also provides:

- A new I BIRD NY kids booklet available at DEC Environmental Education Centers and official I BIRD NY bird walks and other events.
- The launch of an I BIRD NY Beginners Birding Challenge open to kids 16 and younger.
- I BIRD NY walks hosted by DEC and the Office of Parks, Recreation and Historic Preservation will be held throughout the year.
- Improved signage for priority Bird Conservation Areas (BCA) near urban and suburban areas to better identify the opportunities for the public to bird watch. There are 59 BCAs across the state. To date, improved signage has been added to 38 priority BCAs across the state.

DEC Commissioner Basil Seggos said, *"Under the new I BIRD NY program, these improvements and new signage make it easier than ever to get outside and enjoy birdwatching. I encourage residents and visitors alike to take a trip and connect with nature and experience some of the prime bird watching areas that are true natural treasures to the state."*



© Photographs provided by NYSDEC

I Bird NY Utica Marsh - State Unveils the Designs for a New Observation Viewing Tower in City Of Utica

Continued on page 17

I BIRD NY



© Photographs provided by NYSDEC

Braddock Bay bird observation platform (Monroe County, NY) - The primary wildlife objectives for this bay-marsh area are to maximize waterfowl production and provide prime feeding and resting areas for migratory waterfowl.

"New York is an important place for migratory birds, including birds of conservation concern such as Bicknell's Thrush, Piping Plover, and Cerulean Warbler," said Steve Holmer, Vice President of Policy for the American Bird Conservancy. "When it comes to bird conservation, the key is awareness of birds and their amazing diversity. We're thrilled that New York is working to boost citizen's involvement in birding as a step toward enjoying and ultimately conserving birds and their habitats."

New York State is part of the Atlantic Flyway, which runs along the Eastern coast of the U.S. Each fall, migrating birds can be seen flying south to their wintering grounds. This is the ideal time of year for New York residents and visitors to head to BCAs across the state for great bird watching opportunities. Visitors can search fields and forests for warblers, sparrows, and other songbirds and explore lakes, ponds, and beaches to see waterfowl and shorebirds. While exploring, visitors can hawk watch (<http://www.hmana.org/>) to witness the amazing spectacle of raptor migration.

For More Information:

<http://www.dec.ny.gov/animals/109900.html>
<http://www.dec.ny.gov/press/111477.html>
<http://www.dec.ny.gov/press/110259.html>
<http://www.dec.ny.gov/outdoor/24428.html>

W I L D B I T E S



© Scot Rando, Photographer

EXPLORING THE DELAWARE VALLEY REGION

"Many animals are invisible during the day as they only appear at night to feed. Critters like these dusky salamanders were found under a rock during the day."

Woodland salamanders such as the Allegheny Mountain Salamander, the Red-backed Salamander, and these dusks are found under rocks during the day in cooler, shadier spots in the forest. Cooler drainages and creek beds are also favorable for many species of salamanders.

To see what lurks under rocks in your area, visit <http://www.paherps.com/herps/> and look under salamanders."

Scott Rando
Naturalist and Wildlife Photographer

DID YOU KNOW?

All dusky salamanders (genus *Desmognathus*) have a light line which extends from the back of the eye to the angle of the jaw. The dusks also have well-developed muscles on the sides of their heads. They need these muscles to raise the upper jaw in order to open their mouths, since the lower jaw is fused to the skull.

Distributed throughout eastern North America, the dusks total population is unknown, but is assumed to easily exceed 100,000. They are abundant in and near cool streams and small rivers. They hide under various objects, such as leaves or rocks, either in or near water. Alternatively, they may enter burrows for protection.

Dusky salamanders are hidden from sight for 70% of their lives.

ADDITIONAL RESOURCES:

https://en.wikipedia.org/wiki/Desmognathus_fuscus
<https://srelherp.uga.edu/salamanders/desfus.htm>
https://archive.usgs.gov/archive/sites/fl.biology.usgs.gov/c1258_Dodd/html/life_history_and_species_richn.html

DISCOVERING NATURE



© John A. DiGiorgio, Photographer

OBSERVING THE ELK RUT

Elk (*Cervus elaphus*) once ranged through most of North America but they were killed off and driven to take refuge in more remote locations. Of the 6 subspecies of elk known to have inhabited North America in the past, 4 remain - Roosevelt (*C. canadensis roosevelti*), tule (*C. canadensis nannodes*), Manitoban (*C. canadensis manitobensis*) and Rocky Mountain (*C. canadensis nelsoni*). Today they live primarily in western North America, especially in mountainous landscapes such as Wyoming's National Elk Refuge and Yellowstone National Park.

The Eastern elk (*Cervus elaphus canadensis*) was extirpated from Eastern US by 1867. Between 1913 and 1926, Rocky Mountain elk (a closely related subspecies) were released into northcentral PA and had a history of highs and lows until the 1980s, by the PA Game Commission. Since then, a renewed interest, along with a better understanding of elk management, has enabled the elk herd in PA to grow and the range to expand. As of January 2017, a stable herd of about 1,000 elk now exists in PA.

Elk, also called wapiti, a Native American word that means "light-colored deer", is the second largest member of the deer family in North America. Only the moose is larger. A mature male elk (bull) stands 50-60 inches at the shoulder and weighs 600-900 lbs. Females (cows) weigh 500-600 lbs. They are primarily nocturnal but are particularly active at dawn and dusk. They are able to run at speeds up to 35 mph,

A good time of year to observe elk is in fall. Called the elk rut, in late September and October, bulls are battling each other over females to prove their prowess, win the loyalty of a "harem" of females and establish mating rights. This is a fascinating time to observe elk because the shrill bugles of the bulls can often be heard near dawn and dusk. Dawn and Dusk (the best times to observe elk).

More information about elk and where to observe them:

<http://www.nationalgeographic.com/animals/mammals/e/elk/>
<https://en.wikipedia.org/wiki/Elk>
<http://elkcountrysvisitorcenter.com/>
<http://www.pgc.pa.gov/wildlife/wildlifespecies/elk/pages/default.aspx>
<https://www.nps.gov/romo/learn/nature/elk.htm>
<http://www.carolinamornings.com/post/the-annual-elk-rut-brings-autumn-excitement-to-asheville-nc/>

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 is essential to enabling all life to exist and prosper on Earth.

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

*John A. DiGiorgio, Chairman and President
 Richard Crandall, Director and Vice President
 Yoke B. DiGiorgio, Director and Treasurer
 Debra Reimer, Secretary*

THE NATURE'S NEWSLETTER

Facilitating the free access and exchange of information of critical issues in the world today; to educate, inspire and empower all to take part and take action to enable all life to exist and prosper on Earth.

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PROJECTS AND PROGRAMS

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. We collaborate with communities and other organizations to develop and organize wildlife and environmental educational and entertaining programs.

SUPPORT

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

For more information and/or to make a tax deductible donation please contact Yoke Bauer DiGiorgio at:
yokedvea@gmail.com; or call 201-841-5168

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