DVEA NATURE'S NEWSLETTER

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WILDLIFE AND THE ENVIRONMENT

NEWS ALERT

Cheetahs Racing Toward Extinction

A new study released by the Zoological Society of London, Panthera, and the Wildlife Conservation Society reveals that cheetahs may be at greater risk of extinction than previously thought. Today there are ***just 7,100 cheetahs left in wild*** largely due to unprecedented habitat loss (91% of its historic habitat range) according to the new study, which appeared in a Dec., 2016 issue of the Proceedings of the National Academy of Sciences: ***http://www.pnas.org/content/early/2016/12/20/1611122114***

Some Sites For More Information / How to Get Involved:

https://www.zsl.org/
https://www.panthera.org/
http://www.wcs.org/
http://cheetah.org/about-the-cheetah/race-for-survival/
http://www.awf.org/wildlife-conservation/cheetah
http://news.nationalgeographic.com/2016/12/cheetahs-extinction-endangered-africa-iucn-animals-science/

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WINTER BALD EAGLE WATCHING

The Bald Eagle (Haliaeetus leucocephalus) has been the national emblem of the US since 1782 and a spiritual symbol for native people for far longer than that. Removed from the Endangered Species List in 2007, they continue to be protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Now flourishing across the nation, your chances of seeing a wild bald eagle is no longer slim.

Each year as winter approaches and lakes and rivers freeze over in northern portions of the US and Canada, bald eagles migrate southward to areas in search of open water, fresh and abundant fish and undisturbed habitat. With proper technique and planning, “winter” eagle-watching has become a popular off-season activity.

Great Places to see Bald Eagles at the National Wildlife Refuges

Blackwater National Wildlife Refuge (Cambridge, Maryland) - winters over 200 bald eagles annually, and supports the largest nesting population of bald eagles north of Florida on the Atlantic Coast.

Chassahowitzka National Wildlife Refuge (Crystal River, Florida) - from Oct through Apr., many bald eagles winter and nest on the banks of the Chassahowitzka River.

DeSoto National Wildlife Refuge (Missouri Valley, Iowa) - an important wintering area for up to 120 bald eagles.

Iroquois National Wildlife Refuge (Basom, New York) - Named for the Iroquois Indians, eagle watching is among the refuge’s most popular activities.

Kenai National Wildlife Refuge (Soldotna, AK) - with a statewide population of between 50,000 and 70,000 bald eagles, much of Alaska is eagle country.

Klamath Basin Refuge (California-Oregon border) - hosts the largest concentration of wintering bald eagles in the Lower 48.

Mason Neck National Wildlife Refuge (Woodbridge, Virginia) – 18 miles south of Washington, DC along the banks of the Potomac River, lies an 8000 acre peninsula, the home of the 1st refuge established for the protection of bald eagles.

Reelfoot National Wildlife Refuge (Union City, Tennessee) hosts between 150 and 200 bald eagles from Dec through mid-Jan, as the birds take advantage of the thousands of ducks and geese wintering on the 15,000-acre Reelfoot Lake.

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SEA TURTLE CONSERVATION
AT THE SOUTH CAROLINA AQUARIUM

by Kelly Thorvalson
Conservation Programs Manager, South Carolina Aquarium

All six species of sea turtles that occur off the US coast (leatherbacks, greens, loggerheads, hawksbills, olive ridleys, and Kemp's ridleys) are listed as threatened or endangered under the Endangered Species Act, and highlight the many pressing issues surrounding coastal development and ocean conservation. To help ensure that sea turtles have a future in our oceans, the South Carolina Aquarium uses its facilities to aid sick and injured sea turtles through its Sea Turtle Care Center. The Aquarium has rehabilitated and released more than 200 sea turtles and is working hard to position itself to become a world leader in sea turtle rehabilitation and conservation.

When a sea turtle is found stranded, the South Carolina Department of Natural Resources (SCDNR) transports the animal to the South Carolina Aquarium for treatment. Although some sea turtles become sick with no apparent injury, many arrive at the Sea Turtle Hospital suffering from human influenced injuries such as boat strikes, fishing gear entanglements, and plastic ingestion. The veterinarian team diagnoses each turtle and works with hospital staff and volunteers to provide medical treatments and top notch rehabilitative care. Common procedures include x-rays, ultrasounds, endoscopies and cold laser therapy.

A year-long stay in the hospital is not uncommon for these slow healing reptiles. The average stay for a sea turtle is 7-8 months, although some have spent up to two years in recovery. Over the years, sea turtles have been treated for pneumonia, lockjaw, skin ulcers, cataracts, ingestion of fish hooks, boat strikes, broken or missing flippers, and more. The cost of care is substantial, running about $40 per day per patient – easily several thousand dollars per turtle upon release. Once rehabilitated, sea turtles are released back into the ocean to hopefully become reproductive members of the sea turtle population.

Sea turtle releases are an amazing sight to behold and truly represent the Aquarium's role in helping to ensure the future of these ancient ocean creatures. For those involved in the Aquarium's Sea Turtle Care center, releasing a healthy sea turtle being that was once close to death, is one of the most rewarding moments. But it is also rewarding for the entire community. Without the incredible support of community members, the Sea Turtle Hospital would not have accomplished all it has since opening.

Rehabilitate and Release: Some Success Stories

Hunley

An adult female loggerhead (*Caretta caretta*) was caught by SCDNR in a research trawling expedition in the Charleston Harbor. Scientists on the boat noticed immediately that the turtle had sustained severe injuries to its body, head and flippers.

Arriving at the Sea Turtle Hospital in early July and weighing about 140 lbs, "Hunley" appeared to have survived not only a shark attack, but multiple boat propeller strikes, as well. During the physical examination, staff discovered lacerations on the carapace and plastron, a deep cut on the head, and a serious bite wound that took off a portion of the right front flipper. Hunley's wounds were treated and she was given pain medication, antibiotics, fluids, and vitamins before being moved to the hospital where she would be closely monitored.

By mid-July, Hunley was doing well and her wounds were slowly starting to heal. Staff had been fairly hands-off in regards to treatment of the wounds, only gently debriding every few weeks. Hunley received antibiotic injections every three days to keep the wounds from becoming

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Left Top and Bottom - HUNLEY; Right Top and Bottom - YAWKEY; Bottom Center Two - JAMMER. *© Photographs Provided by South Carolina Aquarium*

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SEA TURTLE CONSERVATION AT THE SOUTH CAROLINA AQUARIUM

infected. She received radiographs to monitor the healing process and a healthy diet to sustain her health. By August, Hunley's wounds were healing so well that staff anticipated she would be ready to release within the next few months. In mid-September, she passed her pre-release examination by Dr. Shane Boylan and was released on September 22, 2016 at the Isle of Palms County Park.

Yawkey

SCDNR staff working at Yawkey Wildlife Preserve on South Island discovered a large, lethargic leatherback (*Dermochelys coriacea*) stranded in the surf on March 7, 2015. This was the first time a leatherback had been found stranded alive along South Carolina's coast. The Aquarium's veterinarian, Dr. Shane Boylan, partnered with SCDNR staff to rescue and transport this massive turtle to the South Carolina Aquarium.

"Yawkey" was so large that s/he exceeded the weight limit of the hospital's sea turtle scale. With some ingenuity, staff were ultimately able to confirm weight at 476 lbs. This animal was larger than any sea turtle ever treated in the Sea Turtle Hospital but it was only a juvenile and small in size relative to the 2000 pounds that leatherbacks can grow to be. The initial health assessment included a complete physical exam (no abnormalities) and blood work. In-house blood work revealed mostly acceptable values; however, the turtle was hypoglycemic with a glucose level of 33 mg/dl. Treatment included dextrose administered subcutaneously to treat the mild hypoglycemia, an injectable antibiotic to treat potential bacterial infections, injectable calcium gluconate, and injectable vitamins B and C. Yawkey was then housed in a tank of shallow salt water just slightly larger than she was.

Medical treatments were continued and by March 11th, Yawkey was alert and vigorous in her movements, clearly feeling better. The small tank that limited her movements was a critical component of success in rehabilitating this animal, as leatherbacks have very sensitive skin and easily damage themselves in collisions with tank walls. Staff surrounded the tank with a portable room divider for the duration of her 5-day stay to minimize exposure to people.

Physiologically, leatherbacks are designed to tolerate colder waters than other sea turtle species so in preparation for Yawkey's release, a portable water chiller was installed to reduce her tank water temperature to match that of coastal waters. On March 12th, staff employed a sling and engine hoist to gently transfer the leatherback from the tank into a custom-built wooden box lined with soft foam. Aquarium and SCDNR staff loaded the wooden box into a pickup truck and drove Yawkey to the Isle of Palms for a beach release. Because all four sides of the transport box were hinged to lay flat when open, Yawkey was able to crawl from the box floor directly into the surf of the Atlantic Ocean without assistance. Leatherbacks are phenomenally strong swimmers and so, once s/he was able to navigate over a sand bar just off the beach, s/he quickly disappeared from sight as she swam offshore.

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SEA TURTLE CONSERVATION AT THE SOUTH CAROLINA AQUARIUM

Jammer

A young loggerhead (*Caretta caretta*) found washed up near the iconic Windjammer on the Isle of Palms arrived at the Aquarium's Sea Turtle Hospital in critical condition. "Jammer" was emaciated, covered in barnacles, algae and skeleton shrimp and had a heart rate of only seven beats per minute.

Jammer was a victim of debilitated turtle syndrome, a malady still not understood. Victims suffer from emaciation, anemia and dehydration, and often are found floating lifelessly toward shore, unable to swim or forage for food.

Upon arrival, Jammer was placed in a dry intake tank, swaddled in wet towels and given lifesaving triage that included vitamins, antibiotics, and an IV to rehydrate and stimulate the cardiovascular system. Round-the-clock care was provided early on as staff and volunteers kept "bedside" watch. After spending ~10 days in the critical dry dock area, staff finally felt Jammer could be relocated to a shallow tank of saltwater.

Once out of critical care, Jammer's long road to recovery included slowly increasing the daily diet of assorted fish, a full regimen of vitamins and antibiotics, routine radiographs, and time. After a full year of care, rescuers and staff were thrilled to return Jammer to the ocean.

Upcoming: The Zucker Family Sea Turtle Recovery™

As the numbers of sea turtles needing rescue each year increases, a greater demand is put on space and facilities required. Fortunately, the Aquarium is building the Zucker Family Sea Turtle Recovery™, a state-of-the-art sea turtle hospital and exhibit on the main floor. This will not only increase the capacity to care for more sea turtles, but will allow each and every visitor at the Aquarium to see first-hand the work being done to help these animals.

The Zucker Family Sea Turtle Recovery™ will focus on the rescue, rehabilitation and release of sea turtles. Visitors will be able to experience the rescue of sick or injured sea turtles, observe sea turtles in recovery in a working hospital, get hands-on with simulated sea turtle patients using state-of-the-art technology, and learn more about the release of these animals back into the wild. The new exhibit will also serve as a powerful reminder to properly dispose of all trash and debris, reduce the use of single use plastics, and to remind boaters to watch closely for these air breathing sea turtles that live in our coastal waters in the spring, summer and fall. Environmental awareness is key to not only saving sea turtles but all marine life. The Zucker Family Sea Turtle Recovery ™ opens in May 2017.

For more information about our sea turtles, the Aquarium, and/or the NEW Zucker Family Sea Turtle Recovery: www.scaquarium.org

© Photographs Provided by South Carolina Aquarium

Above:Recent Sea Turtle Releases.

ABOUT THE SOUTH CAROLINA AQUARIUM

The South Carolina Aquarium, a 501(c)(3) not-for-profit organization, is located in Charleston, South Carolina. Established in May, 2000, it's mission is to inspire conservation of the natural world by exhibiting and caring for animals, by excelling in education and research, and by providing an exceptional visitor experience.

For more information: www.scaquarium.org

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TAMING THE GLOBAL APPETITE FOR TIGERS

by Adam M. Roberts
CEO, Born Free USA

I sat down to write this piece on wild tiger conservation and captive tiger welfare, and was immediately reminded why saving tigers is so very challenging. The same majesty that captivates the human imagination—the same allure of this remarkable, special creature—makes the tiger intensely coveted. The demand for tigers is killing them.

Just today, 10 days before Christmas, the movie trailer for *Gold* was on my computer screen, starring Matthew McConaughey. In one fragile scene, he walks through a metal gate and, to prove his own courage, places his hand on a tiger's head. The actor is sweating; he is clearly afraid.

He should be. Tigers are apex predators and they are wild animals. They can kill. Of course, this scene was superfluous. And, of course, computer-generated imagery could have replaced a live tiger with zero cruelty and zero danger. Using a live tiger meant unfathomable cruelty and unacceptable risk.

McConaughey reportedly commented that his heart was pounding, and that although he was afraid, using a live animal was more "exhilarating" for him. Shame.

This is not unusual, though. Exploitation of tigers is not a new phenomenon. It is popularly estimated that, at the beginning of the 20th century, there were 100,000 wild tigers roaming across Asia. One hundred years later, there are fewer than 4,000 left. Today, there are more tigers living on gulag-like Chinese tiger farms or in private hands in the U.S. than there are in the wild. It is a shocking realization.

The onslaught on tigers for that many years was profound. They were killed as hunting trophies. They were killed in retaliation for human/tiger conflict where an unlucky villager would stray into tiger habitat with fatal consequences. They were killed for their skins, teeth, claws, and internal organs.

Many of these sabotaging conditions remain today. In India, for instance, people from local villages in protected areas' buffer zones venture into tiger habitat to collect wood or other natural resources. When they do, tigers in the area may attack. I have personally seen the limping rescued tiger, whose massively swollen leg was the result of being captured by angry villagers and severely beaten in retaliation for his violent, but natural, transgression.

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TAMING THE GLOBAL APPETITE FOR TIGERS

Tigers continue to be poached in India and elsewhere to supply the market for their parts. They are shot; they are snared; they are sliced in two, skinned, and dismembered.

In China and some Southeast Asian countries, they are also bred and confined in cruel conditions in farms and other facilities to feed the domestic demand for tiger parts. This keeps the industry and the market alive. It also means that the pressure on wild tigers remains strong, as there is an insidious market that needs to be supplied. Chinese businessmen pour thousands of dollars into their farms, hoping to reopen a legal tiger bone trade and return a profit on their long-held, massive investment. And, any poacher in any tiger range state can pay a dollar for a bullet, poison, steel trap, or wire snare and destroy a wild tiger.

The price for a bottle of tiger bone wine in China is too high, because the price may be the extinction of a species.

According to official documents from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which were considered at the most recent meeting in the fall of 2016, "significant illegal wildlife markets are alleged to exist in Myanmar, near its borders with China and Thailand" and "seven border towns in China, India, and Nepal are reported to be primary sources of illegal trade in Asian big cats." This strongly suggests that the illegal trade in tiger parts throughout Asia remains problematic, requiring vigilant action.

And, while this illegal trade continues across borders, there remains a significant concern about the role of breeding in tiger farms across Asia. According to CITES, information received continues to suggest that tiger specimens are re-entering illegal commercial trade from captive breeding facilities. So, while there is a concerted effort to save the tiger and to stem the global demand for tiger parts and the decline of the species, there is also poaching of wild tigers and breeding of captive tigers, both feeding the demand.

As an aside, we must not ignore the fact that there are real concerns today that lions are being killed, both in the wild and in South African canned hunting operations. Their bones are smuggled to Asia and feed the same demand for tiger bones, thereby threatening another big cat species simultaneously.

However, there is hope.

CITES Parties remain openly concerned about tiger poaching and levels of tiger trade. They continue to advocate for tigers only being kept in captivity when doing so contributes to conservation of the species in the wild. The CITES language is unequivocal: "tigers should not be bred for trade in their parts and derivatives."

Meanwhile, at the most recent CITES meeting, the representative from Laos announced that his government was looking to shut down its tiger breeding operations, and

Top:©Born Free USA/R&D. Center&Bottom:©Adam M. Roberts, Photographer

Top: Tigers housed in barren pen with no raised platforms to avoid wet and muddy ground (a zoo in North Carolina). Center: Feeding cub (a zoo in Thailand outside Bangkok). Bottom: Tiger who was beaten by villagers in India.

ABOUT BORN FREE USA: ***Keep Wildlife in the Wild***

Born Free USA is a national animal advocacy nonprofit 501(c)(3) organization, with a mission to end the suffering of wild animals in captivity, rescue individual animals in need, protect wildlife (including highly endangered species) in their natural habitats, and encourage compassionate conservation globally.

We use powerful tools in our campaigns against cruelties, including legislation, public education, litigation, and grassroots networking. We also work actively with media to spread the word about challenges facing animals.

For more information: www.bornfreeusa.org

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TAMING THE GLOBAL APPETITE FOR TIGERS

potentially rehome those captive tigers to more suitable rescue centers and sanctuaries. With an estimated 700 tigers in three facilities being intensively bred for the commercial market, this is an important declaration.

According to Debbie Banks, the global tiger trade expert from the Environmental Investigation Agency, this tiger farming phase-out plan "would put Laos streets ahead in implementing CITES measures to end tiger farming." She notes that the focus must turn to China, Thailand, Vietnam, and other tiger farming nations. Banks asks, "Will they follow suit and finally commit to ending tiger farming?"

There simply must be a resolute global effort to stop the trade in tiger parts: reduce demand, close down tiger farms, and invest in anti-poaching efforts to keep tigers safe in the wild, where they belong.

That said, it's slightly disingenuous to push China and other nations in the region to stop intensive breeding of tigers for their parts when we, in the U.S., still allow tigers to perform in circuses, languish in zoos, and be kept as "pets."

A patchwork of state laws complicates the domestic trade in tiger parts here in the U.S.; some states allow big cats as pets, and some disallow it. Thankfully, the federal Captive Wildlife Safety Act, passed by Congress in 2003, prevents interstate commerce in big cats if they are destined for the pet trade. Nonetheless, tigers are, shockingly, kept as pets in this country.

According to the Born Free USA Exotic Animal Incidents Database, for instance, in early November, "police officers found three tigers loose in a backyard that only had a four-foot field fence to contain them, being watched by a 17-year-old… Owner Trisha Meyer did not have the necessary permits to keep these animals, and was extradited to Harris County, Texas, where she faces charges for theft and endangering a child. The tigers were taken into protective custody." Sadly, this is one example of many.

Meanwhile, colleges and universities in the U.S. keep tigers as mascots: live tigers! Young tigers like "Mike" at Louisiana State University (LSU) are bred and held captive for display at sporting events. They live and they die, and they are replaced to start the dreadful cycle anew. LSU's most recent mascot, Mike VI, died in October. According to the LSU website devoted to its iconic symbol, "LSU has begun the search for a young, male tiger. As with Mikes IV, V, and VI, LSU will seek to obtain a donated tiger from a rescue facility." There's only one problem; no reputable, true wildlife sanctuary would allow a tiger to be exploited off-site for football games.

So, remarkably, we live in a world where we know that tigers are susceptible to massive declines: from 100,000 to fewer than 4,000. We know that they are killed in the wild and bred in captivity for their parts. We know that they are exploited for entertainment in zoos, circuses, films, and the pet trade.

© Robin Hamilton, Photographer

We also know that tigers can be saved in the wild. Tigers don't have to be consumed as medicines. Their bones don't have to be ground into powder or made into wine. There need not be tiger skins, claws, or teeth on the open market. They don't need to leap fearfully through rings of fire, or languish on concrete and behind bars in zoos or someone's backyard. And, most egregiously, they don't need to be patted on the head by an American actor looking for a rush, like Matthew McConaughey.

If we can't get it right for tigers, majestic and captivating, what species will be safe from humans? We know what happens to tigers when the global demand for them persists. We also know what we can accomplish when consuming countries say no to the tiger trade, when range states say no to poaching and profiteering, and when people across the globe commit to taming our appetite for tigers—and that's a future with tigers in the wild.

© Ken Bohn SDZG Photographer

BIG, BRILLIANT, EBONY ENDANGERED BIRD GETS A BOOST

by *Karyl Carmignani*
Staff Writer, San Diego Zoo Global

Its raucous call has not graced the mountainous forests of the Big Island since 2002. That's the year the 'alalā, or Hawaiian crow *Corvus hawaiiensis* was declared extinct in the wild. The final 20 birds were preserved at the Keauhou and Maui Bird Conservation Centers, managed by San Diego Zoo Global, where scientists and staff patiently bred and managed the flock. "We have been working for many years to build up a large enough—and genetically diverse enough—population to allow us to begin putting the 'alalā back in the wild," said Bryce Masuda, manager of the Hawaii Endangered Bird Conservation Program. Now, nearly 15 years later with 120 'alalā at the breeding centers, the first cohort of five birds was released in December. However, two of the birds were returned to the aviary after three were found dead, despite them having been observed feeding and appearing healthy. Once the necropsy results are in, we can devise the best ways to overcome the inherent challenges in reintroducing this iconic species.

Currently, one in three endangered bird species in the US is Hawaiian. Despite the 'alalā's cultural and environmental significance, it is the most endangered corvidae on the planet. Esteemed by local people, this raven also serves as a seed disperser vital to regenerating native forests on Hawaii Island. While the forces that led to its demise are not fully understood, it's thought that diseases, including avian malaria and fowlpox played a significant role, as did massive habitat loss and the introduction of nonnative predators like rats, cats, mongooses. Feral pigs and goats eat and beat the land down as well. The State Department of Land and Natural Resources, in stewardship with local conservation partners, has led habitat restoration efforts at the Pu'u Maka'ala Natural Area Reserve release site which included fencing off the area to keep ungulates out and planting native understory plants which the 'alalā forage in. Release candidates get a two-month stint in an on-site acclimation aviary. Upon release, they will be provided supplemental food and will be closely monitored to ensure their health and well being.

Female 'alalā lay one to four golf ball-sized eggs that are the color of chocolate chip mint ice cream (pale green with dark speckles). After hatch, these precious orbs are placed in a specialized incubator; the female may then "double clutch" and lay more eggs. Candling the eggs regularly allows researchers to monitor the development of the embryos. The tiny, pink hatchling pips its way out of its shell inside a warm and humid "hatcher." This exhausting process can take up to 36 hours! The fragile new chicks require patient, frequent feedings. Every two hours they are fed a precise diet of fruit, honeybee larvae, and tasty cricket guts. Once the birds' eyes open, they are fed with 'alalā look-alike puppets to prevent them from imprinting on

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BIG, BRILLIANT, EBONY ENDANGERED BIRD GETS A BOOST

© Ken Bohn SDZG Photographer

humans. Staff at the center collect native berries and fruits in surrounding forests for the growing ‘alalā. Meticulous records are kept on each bird’s development. At around two months of age, the birds can feed themselves and are moved to an outdoor acclimation aviary. This helps prepare them for eventual release back into the Hawaiian forest.

This sleek, 20-inch long raven was recently discovered to be a master tool user. In a study at the Hawaiian bird centers, the ‘alalā used its built-in short, strong beak to modify sticks to deftly extract meat from inside a baited log, a feat few species could achieve. ‘Alalā are gregarious, intelligent birds that can live up to 18 years in the wild and 25 years in captivity.

Some native Hawaiians consider the ‘alalā an *‘aumakua* or a “family god.” For the rest of us, we are thankful that those years of intensive, collaborative work has helped this species take a few wing beats back from the brink of extinction, even as we strive to meet the challenges of reintroducing this iconic species.

San Diego Zoo Global (SDZG) is a not-for-profit organization headquartered in San Diego that operates the San Diego Zoo, the San Diego Zoo Safari Park, the San Diego Zoo Institute for Conservation Research, and the San Diego Zoo Global Wildlife Conservancy.
The mission of SDZG is to save species worldwide by uniting expertise in animal and plant care and conservation science with dedication to inspiring passion for nature and striving to be at the forefront of wildlife conservation and education.

For more information: http://www.sandiegozooglobal.org/; http://zoonooz.sandiegozoo.org/2016/11/29/grow-well-looking-back-moving-forward/

More About the Hawaiian Crow, ‘Alalā

• Is the most endangered corvid in the world; is the only crow species found in Hawaii.
• A medium-sized crow, 18 to 20 inches in length; both male and female are similar in color and size.
• Has a crow-like call but also make many other sounds.
• Breeding usually occurs from March through July. Lays 1-5 greenish-blue eggs, but only 2 survive. The family groups stay together until the young learn to fly and eat on their own.
• Its natural predator is the ‘io (Hawaiian hawk). Chicks are very vulnerable to tree-climbing rats, and after they leave the nest, to cats, dogs, and mongooses.

Conservation Efforts:
‘Alalā were once abundant in lower elevations of the western and southern sides of the island of Hawai‘i. When coffee and fruit farmers began shooting them in the 1890s, their population declined significantly.

By 1978, only 50 to 150 were believed to exist. Disease, predation by nonnative mammals, and loss of suitable habitat due to grazing and logging are also factors in the decline. The last two ‘alalā vanished from their territory in South Kona in 2002.

The U.S. Fish and Wildlife Service is working in cooperation with the State of Hawai‘i Division of Forestry and Wildlife, San Diego Zoo Global (SDZG), U.S. Geological Survey’s Biological Resources Division, and private landowners to save and restore the ‘alalā. SDZG operates captive propagation facilities at the Maui Bird Conservation Center on Maui and at the Keauhou Bird Conservation Center on the Big Island at Volcano. Efforts are ongoing to successfully release captive-reared ‘alalā to the wild.

https://www.fws.gov/Pacificislands/fauna/alala.html

Four Swift Fox Kits.

© Photograph provided by the Endangered Wolf Center

WORKING TO SAVE
WILD CANID SPECIES FROM EXTINCTION

by Regina H. Mossotti
Director of Animal Care and Conservation, Endangered Wolf Center

In my position as Director of Animal Care and Conservation at the Endangered Wolf Center (located in St. Louis, MO), I am fortunate enough to work with young people in many capacities. But whether I am guest lecturing at a University or talking to a group of visitors on a tour, I have noticed an increasing disconnect between younger individuals and their understanding of why zoos and other captive facilities still exist.

So, why do you think zoos (and other captive facilities) exist? A hundred years ago, zoos were entertainment facilities, and their primary focus was to dazzle guests with exotic and unique animals. Then, around the time the Endangered Species Act was implemented in the 1970's, a movement started to push through the zoo community to be better educators. Zoos across the country modified their focus to educating people about why we should protect endangered animals from extinction.

Zoos continued to adapt to environmental needs, and in the late 20th century many zoos began to shift their focus toward becoming the conservationists. They used their vast resources to focus and built in audiences to begin the hard work of saving endangered species in their natural habitat. They did this with a creative, multi-pronged approach which included breeding and releasing animals back into the wild and conducting vital research that can help us manage species recovery better.

As many zoos shifted their focus toward conservation, they also expanded their education programs to instill a sense of stewardship and responsibility for the health of our planet, to create citizen scientists, and to inspire activists in the public to work on behalf of wildlife and wild places.

The efforts to directly work with local communities that live in the recovery area of animals around the world has made a huge impact as well. Zoos have helped change the minds of people in those areas from being intolerant of wildlife to being proud of their native wildlife and their

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WORKING TO SAVE WILD CANID SPECIES FROM EXTINCTION

communities effort to save their endangered species.

It is not hard to see that the zoo community has helped save a vast array of critically endangered species when you start to look for examples, including (but definitely not limited to) the black-footed ferret, California condor, American burying beetle, swift fox, hellbender salamandar, Mexican wolf, Przewalski's horse, scimatar-horned oryx, red wolf, Attwater's prarie chicken, freshwater mussle, golden lion tamarin, and that's only to name a few. The list continues to grow. But many members of the public don't know about this incredible work because zoos are doing it behind the scenes.

Like everyone else in the zoological community, I am very proud to be a part of this incredible conservation force. The Endangered Wolf Center, for example, was founded in 1971 by Dr. Marlin Perkins and his wife Carol. Perkins, you may remember was the host of Mutual of Omaha's wild kingdom. Because of he and Carols's foresight, the Center has helped save the red wolf, Mexican wolf and swift fox from extinction. Our mission is to preserve and protect Mexican wolves, red wolves and other wild canid species, with purpose and passion, through carefully managed breeding, reintroduction, groundbreaking research and inspiring education programs. Our vision is a world where endangered wolves and other wild canids exist and thrive in their native habitats, recognized and valued for their vital roles as leading members of a healthy ecosystem.

From our Center's perspective, we are immersed in the real-life example of how zoos are helping to save endangered species and I would love to share with you a recent instance of this work.

On April 23, the Endangered Wolf Center set out on a historic mission. Our staff flew two just-born critically endangered Mexican wolf pups to New Mexico to be fostered by a wild pack. This historic collaborative effort between the Endangered Wolf Center staff and the U.S. Fish and Wildlife Service (FWS) represented the first time pups born in captivity were "adopted out" in this way.

Two of those pups from a litter of six born to Mexican wolves Sibi (mother) and Lazarus (father), Lindbergh and Vida, made the long journey from St. Louis to New Mexico and were placed into the New Mexico based Sheepherder's Baseball Park (SBP) Pack.

A few days later, five Mexican wolf pups were born at Brookfield Zoo in Illinois and two of their pups were placed in the den of the Arizona-based Elk Horn Pack of wild wolves.

In May, another litter of four Mexican wolf pups were born at the Endangered Wolf Center to Mack (father) and Vera

Top: © Photograph provided by the Endangered Wolf Center.
Bottom: © Photograph provided by the Mexican Wolf Interagency Field Team.

The Mexican Wolf Recovery Program

The Mexican wolf (*Canis lupus baileyi*), also known as *the lobo*, is a subspecies of gray wolf once native to Arizona, New Mexico, Texas and Mexico.

The goal of the Mexican Wolf Recovery Program is to reintroduce the species back to its native habitat. Fostering is a technique biologists have developed where wolf pups from one litter are placed with another litter.

The wolf mother will adopt the additions as her own. Placing pups from captivity into a wild litter not only helps increase the population size in the wild but also helps increase genetic diversity. It is a wonderful ways to have wild parents (with an established territory and experience) raise and teach the pups how to survive.

The Endangered Wolf Center has been the birth site of over 190 Mexican gray wolf pups born in captivity and it continues to play a leading role in the recovery of the Mexican wolf.

In fact, every Mexican wolf in the wild today can trace his or her roots back to our center.

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WORKING TO SAVE
WILD CANID SPECIES FROM EXTINCTION

© Photograph provided by the Endangered Wolf Center

(mother), and two of their pups, Valeria and Linda, were placed in the den of the Arizona-based Panther Creek Pack.

All three wild dens were documented with five pups, and the addition of the captive born pups increased the total litter size of all three packs to seven each.

Wolves are extremely shy and it is not often that biologists get to see wild wolves. **But we are excited to announce that in October 2016, biologists confirmed that at least one of the pups has survived in both the Panther Creek Pack and the Elkhorn Pack. This means that the foster was successful and the pack accepted the pups into their family.** It's a long way from St. Louis to the recovery area, and the time-sensitive nature of fostering adds an extra layer of intensity. But seeing the pups safely into the wild and learning now that they are not only surviving but thriving makes the entire journey all the more remarkable.

© Photograph provided by the Endangered Wolf Center

About the Red Wolf

The strikingly beautiful red wolf (*Canis rufus*) is a canid native to the eastern United States.

It is a distinctly different species from its gray wolf cousins, and notably smaller, weighing an average of only 50 to 60 pounds. Primarily crepuscular as all wolves (active during twilight), they communicate by scent marking, vocalizations (including howling), facial expressions and body postures.

Shy and secretive, red wolves hunt in small packs, complex social structures that include the breeding adult pair (the alpha male and female) and their offspring. Red wolves tend to form pair-bonds for life.

A native to the southeastern United States, once ranging as far west as Missouri, by 1980 the red wolf was declared extinct in the wild, with only a handful of red wolves in captivity shouldering the burden of saving their species.

Here at the Endangered Wolf Center in 1981, we became the first facility to successfully breed both endangered red wolves and Mexican wolves in captivity. In 1987, an amazing female red wolf named Brindled Hope was one of the first of eight animals introduced to the wild in North Carolina, part of the species' former range. She became the first red wolf to give birth in the wild.

Getting a wolf ready to be introduced into the wild takes a lot of work – and a lot of space. The large enclosures here at the Endangered Wolf Center offer red wolf release candidates a chance to hunt, an opportunity to acclimate to larger land areas and the ability to experience little human interference. Preserving their natural shyness around humans is one of the best ways to ensure their safety in the wild – especially if the humans they might encounter there have them in their crosshairs.

Today, many of the wolves now roaming this territory can trace their roots to the Endangered Wolf Center.

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WORKING TO SAVE WILD CANID SPECIES FROM EXTINCTION

Mexican wolves are critically endangered, and have only about 100 individuals left in the wild and they are mostly found in the United States.

"*The Mexican wolf is vital to keeping the ecosystem healthy and I am so proud of the Center's efforts to further conservation for Mexican wolves*." said Virginia Busch, the Center's Executive Director. "*Collaboration is key to conservation success and we are grateful for our partnership with FWS and the Species Survival Plan zoological institutions*."

This experience is just one of many examples of zoological facilities making a positive impact on wildlife. While our planet faces unprecedented threats from habitat destruction, overpopulation and global acquiescence to the forces that govern climate change, zoos have positioned themselves at the forefront of the efforts to slow down a major extinction level event. They are winning battles, and with the support of the public they will continue to be successful. Now, more than ever, we all have to work together.

Our Center has seen that collaboration is the key to conservation and we have seen how communities pulling together with their zoos, their NGO's, and their governments are making a difference. I ask you to be a part of this movement, because the lives of endangered species depend on us being able to come together and work toward common goals.

For more information and/or to make a donation: http://www.endangeredwolfcenter.org/

The Endangered Wolf Center
Our Mission:

To preserve and protect Mexican wolves, red wolves and other canid species, with purpose and passion, through carefully managed breeding, reintroduction and inspiring education programs.

Upcoming Wolf Fest 2017

(Saturday, Oct. 21, 2017)

Wolf Fest is held at the Endangered Wolf Center (located on the grounds of Washington University's Tyson Research Center, Eureka, MO).

The Endangered Wolf Center is a 501c(3) non-profit and receives no funding from the state or federal governments.

Wolf Fest is one of our biggest fundraisers of the year and we greatly appreciate your participation!

For more information or become a sponsor please call: 636-938-9306.

© Photographs provided by the Endangered Wolf Center

About the Swift Fox

The swift fox (*Vulpes velox)* is the smallest of all North American wild canid species. The swift fox gets its name from early American settlers who were taken by its speed. The species once had an enormous range, stretching from central Alberta, Canada, south through the Plains states all the way to west-central Texas. As the country was settled, their population began a serious decline. By 1978, the species was completely gone in Canada, and just over a decade later, it survived in only about 10 percent of its former range in the United States.

The process to declare the swift fox endangered took root in 1995, but due to backlog at the U.S. Fish and Wildlife Service, the Swift Fox Conservation Team was formed to help save this quickly disappearing predator. Thanks to the Swift Fox Conservation Team's efforts in combination with breeding recovery successes from the Endangered Wolf Center and other facilities, the little foxes began making a comeback.

Today, the Endangered Wolf Center continues to play an important role in the recovery of this species. In fact, swift fox kits have been born in the spring of 2012 and 2013. **One of the female kits, Kimi, traveled from the Center in January 2013 to Canada (where the swift fox is still considered endangered) to help with that country's recovery efforts.**

© Scott Rando, Photographer

The young 3 week old young peregrine falcon, or "eyas" as young falcons are called. Eyases of this age are largely covered by down, but contour feathers are starting to appear in various areas along the face, back and breast. Flight feathers are also visible on the wings and tail.

RESCUING A YOUNG PEREGRINE FALCON

by Scott Rando
Naturalist and Wildlife Photographer

When the bald eagle almost became extirpated from NY and PA in the 20th century due to reproductive difficulties that were attributed to DDT and other organochloride pesticides, there was concern for not only the eagle, but for many other raptors as well. If DDT were to remain in the environment, then the chances for survival for a myriad of raptor species would not look good.

The Peregrine Falcon was one of the endangered birds of prey species that saw most of the breeding activity disappear in the northeast U.S. Peregrines disappeared from the region's historical nesting sites. Fortunately, due to the reintroduction efforts of several state agencies and other groups, the peregrine falcon population gradually started to increase. New breeding territories started to appear, and it was found that many of the new pairs utilized man-made structures such as bridge trusses and building ledges rather than the traditional cliff nest sites.

As more and more nesting sites appeared in the region, a few cliff nests started to appear along with the many urban sites. In one such site, the Pa. Game Commission (PGC) was monitoring an occupied territory in the region. The pair in this cliff nest had not produced any young since the nest scrape was discovered, but in 2014, there was evidence of young or eyases, as young falcons are called.

In the spring of 2014, the PGC arranged to survey and band the young when they were large enough, at about three weeks of age. The survey was no small feat; the nest location required a rappel of around 200 feet down the vertical face of the cliff. When the game commission team reached the nest, they found a single three-week-old female, but there was a problem. The eyas had an injury to her right wing, so she was hoisted up the cliff and driven to the Delaware Valley Raptor Center (DVRC) where X-rays revealed that the young peregrine had a fractured humerus bone very close to the elbow joint. Bill Streeter, director of the DVRC, explained that the fracture being so close to the joint would probably affect her chances of being released back into the wild; the healing process of the bone could cause the nearby joint to stiffen and thus compromise her flight ability.

Two years later, this female peregrine, which has been named Sadie by the staff, is doing well, except for its injured wing; as expected, she is unable to fly. She has much of her adult plumage, and if in the wild, she would seek a mate and breed by her 3rd year.

She is taken care of by the Delaware Valley Raptor Center and has been used in many educational presentations. The only sign that

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RESCUING A YOUNG PEREGRINE FALCON

© Scott Rando, Photographer

The female, now 2 years old as she appeared this past October. She shows the characteristic "moustache" below the eyes. Also, the "tomial tooth" is visible near the end of the upper bill. Peregrines catch their prey (other birds) in midair and then quickly dispatch their prey with a bite to the cervical vertebrae, and the tomial tooth is utilized for that purpose.

Sadie was injured is that her right wing droops slightly compared to her left. Having her not being able to be released back into the wild was a disappointment, but she escaped certain death by being rescued and brought to the Delaware Valley Raptor Center where she, along with the staff, is helping people understand the plight, and comeback of this magnificent falcon.

For more information: http://www.dvrconline.org/ http://www.upperdelawarebioblitz.com/photo_gallery/default.html

More About The Peregrine Falcon (Falco peregrinus)

Is the fastest organism on the planet, and has been clocked at speeds in excess of 160 MPH.

Both sexes have identical marking and colorations; range in size from 16 to 20 inches long with the female being larger.

Long toes with sharp and strongly curved talons, allow the peregrine to capture prey (mostly other birds) in the air, or simply knock prey down.

Rarely building a nest, peregrines nest on cliffs (protected holes or ledges), laying 2-4 cream-colored, brown-spotted eggs and usually live in close proximity to open water.

Chicks are downy and helpless at hatching, their eyes not opening for several days. The female provides most of the care at the nest. The male primarily hunts for food. Chicks typically fledge at 25-26 days. Both parents continue to provide for the chicks until they are flying well.

Are tolerant of man and have been known to nest on windowsills and ledges of buildings in some of our largest cities, where they prey on pigeons.

© John A. DiGiorgio, Photographer

Adult peregrine falcon documented off the coast of Virginia.

© John A. DiGiorgio, Photographer

OTTERS ON THE RIVER

by Yoke Bauer DiGiorgio
Director, Delaware Valley Eagle Alliance, Naturalist, Filmmaker and Author

It's always this time of year, as the sun begins to set so much earlier and the temperatures dip to freezing, I recall our cabin on the Delaware River and the wonderful times my husband John and I shared exploring. At the time, we had been informed by many that there were no river otters on the Delaware River.

So imagine our surprise, when on one chilly late afternoon while hiking along the river, we spotted a sleek and graceful dark brown creature swimming close to shore. I had only seen seals and porpoises swimming in the ocean with such speed and grace. A large flattened head with brown eyes very close to a broad black nose, and long whiskers looked up at us with a mocking stare. Then in one quick motion, leaving ripples on the then calm surface of the river, we saw only the long tapered tail and then it too disappeared.

Several minutes later the graceful dark brown creature reappeared. It was our first encounter with a river otter.

Over the next several weeks, we dedicated our early mornings and early evenings, looking for and observing him or her. We observed that he was extremely playful and a very good fisherman. One Saturday morning, in a contest that took almost half an hour, he tackled a water snake. I must say, the snake was a valiant opponent. There were several times, as when the snake had wrapped its body around his neck that I feared he might be in trouble. I did not know then that river otters have very sharp claws and teeth for holding and crushing their prey. I also did not know then that in addition to fish, clams, snails, crayfish, frogs and insects, a river otter's diet may include snakes, muskrats and turtles. River otters are vigorous swimmers, and he was able to out swim the snake as it tried to get away. We watched the snake frantically swimming above the river's surface as well as below, with a very determined river otter in pursuit. In the end, he had a very satisfying meal on the bank of one of the islands in the Big Eddy.

We were hooked. We started to look for information on river otters so we could learn more about them. Otters are the only amphibious members of the weasel family. They have no natural predators, except man, because they defend themselves with the same savage fury that characterizes their weasel cousins. In addition to snakes, river otters eat fish, clams, snails, crayfish, frogs, insects, muskrats, and turtles.

They are found through out most of North America. They are widespread in Canada and in the Midwestern and Southwestern parts of the US., but were trapped to the point of extinction in other parts of the US and their habitat destroyed through

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OTTERS ON THE RIVER

the pollution of many of our waterways. Successful repopulation efforts are now increasing river otter numbers.

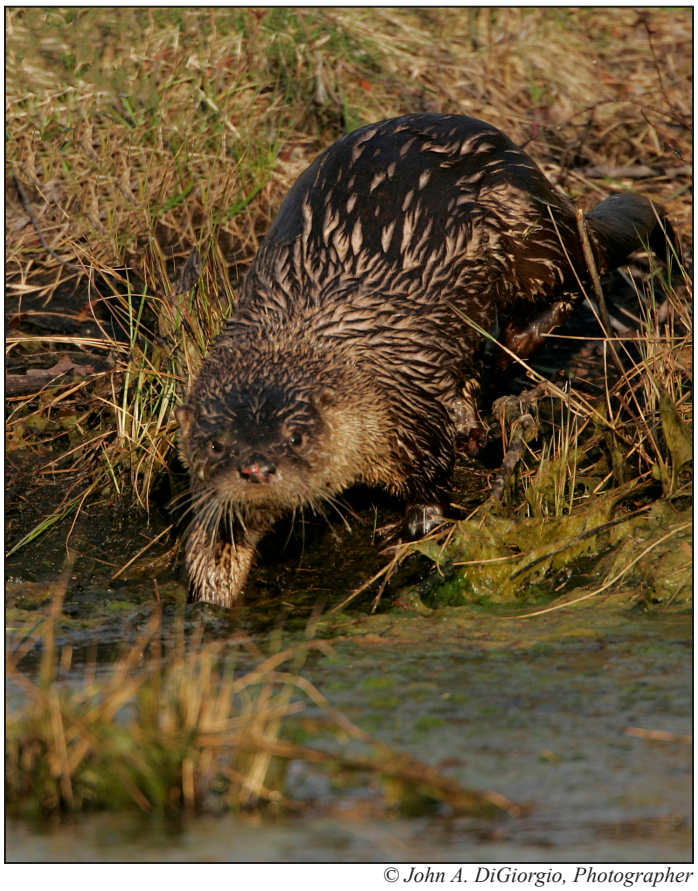
Unlike sea otters, river otters spend a considerable time on land. When in water, a river otter can stay under water for some eight 8-minutes. Territories are marked by rubbing musk on stones and logs. Males weigh 10 to 30 pounds and may be four feet long. Females are somewhat smaller. Their fur is a rich brown-black in color with a layer of water-repellent underfur. The belly is lighter, the chin and throat almost grayish. Otters of the north generally have darker fur than otters from the south. Playful and vocal, otters can live to be 19 years old. Scent glands are near the thick tail. The otter has a valve that seals off its ears when under water, and its eyes and nose are positioned high on its head to maintain a low profile in the water. They have good eyesight and an excellent sense of smell. The long whiskers are sensitive to vibration in the water. The otter's body is long and muscular, it's powerful tail which may be a third of its total length tapers to a point. When under water the otter uses it's tail as a rudder. When standing upright, it uses it's tail as a prop. Front and rear webbed feet allow the otter to reach speeds to six M.P.H. in the water. I have read that the river otter swims underwater when they are in a hurry and on the surface for normal traveling and casual speeds.

River otters, we came to learn, never spend more than several months in any one location and they remain active in winter, using ice holes to surface and breathe. One winter evening we were surprised to see an adult female arrive with her young, two of them. Bundled up side by side along the river bank (at a safe distance), we spent many hours in the dark observing and enjoying. Their playfulness on the ice, crawling up the banks and sliding down in a belly slide into the river's open water was magical. They made a game of feeding, rolling over and over each other, and chasing each other in wild exuberance. We loved to listen to them calling to one another from under, as well as, above the frozen river. Their calls resembled the *chirp chirp* of birds, very unexpected from such big mammals. Much later that evening we could still hear them from all directions, a mom with her young.

We have seen the return of many otters to the Delaware River over the years. They are a delight to experience, filling the air with a magical feeling of life, *wildlife!*

For more information:
http://www.dec.ny.gov/animals/9355.html;
http://www.nwf.org/wildlife/wildlife-library/mammals/north-american-river-otter.aspx
https://www.nps.gov/lode/learn/nature/animals.htm

Did You Know? The North American River Otter (*Lontra Canadensis*) can close their ears and nostrils to keep water out and also can dive to a depth of 60 feet!



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WINTER BALD EAGLE WATCHING

Ridgefield National Wildlife Refuge (Ridgefield, Washington) Ridgefield is home to 4 nesting pair of bald eagles, but dozens more drop by in the winter, feeding on waterfowl and fish from the nearby Columbia River.

Patuxent Research Refuge (Laurel, Maryland) - is the nation's only refuge established to support wildlife research.

Sherburne National Wildlife Refuge (Zimmerman, Minnesota) is a good spot for eagle viewing due to an extensive network of shallow lakes that freeze and grow short of oxygen in the winter. The result is a seasonal fish kill that provides easy feeding in the spring, when groups of bald eagles gather.

Squaw Creek National Wildlife Refuge (Mound City, Missouri) – 200 to 300 bald eagles gather in Nov and Dec, when the waterfowl population peaks.

https://www.fws.gov/refuges/whm/viewBaldEagles.html

Other Great Places to See Bald Eagles

New York's Upper Delaware River and Hudson River - provide abundant opportunities to see resident and "wintering" bald eagles less than a 2-hour drive from midtown Manhattan. Depending on weather conditions, wintering bald eagles begin arriving in mid-Dec and remain till mid-Mar.
https://www.nps.gov/upde/learn/nature/baldeagles.htm
http://delawarehighlands.org/eagles/eaglewatching/map

Oklahoma's River and Reservoirs - host large numbers of bald eagles each winter.
http://www.npwrc.usgs.gov/resource/birds/okbald/winter.htm

Quabbin Reservoir - in Massachusetts is one of the northeast's best-known winter eagle lookouts. Bald eagles were introduced there in the 1980s. Today, year-round resident eagles are joined by dozens more in winter, with numbers peaking in Feb. ***Visitor Center at (413) 323-7221.***

Upper Skagit River Watershed - in Northwest Washington draws hundreds of eagles to dead and dying salmon at the end of the spawning season. Eagle numbers peak in late Dec and early Jan. ***www.skagiteagle.org.***

Upper Mississippi River - is jam-packed with bald eagles in winter, and some of the best views are available below the locks and dams. *www.cassville.org/nelsondewey.html.*

Wolf Lodge Bay - Lake Coeur d'Alene, Idaho is frequented by wintering bald eagles when the kokanee salmon start to spawn.***http://www.sandpoint.com/lifestyle/fall06/baldeagles.asp.***

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.

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

ABOUT THE *NATURE'S NEWSLETTER*

Through the Nature's Newsletter, we strive to facilitate 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.

ABOUT OUR PROJECTS, PROGRAMS AND EVENTS

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/events.

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 about having a project, program or event and/or to make a tax deductible donation contact:

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