

The Ridgeline

NEWSLETTER OF THE BLUE RIDGE WILDLIFE CENTER

ISSUE 40



Maintaining Biodiversity

Bobcat 18-2191 (Virginia's only native cat species) returned to the wild!

We Are All in *This* Together



When I was younger, little did I know how inextricably linked I was to the insects/bugs that littered my car on my journeys between The Plains and Blacksburg, Virginia. Every time I filled up with gas I was annoyed with the bug splat on my windshield. Oh—how I wish for those days once more!

I now know and appreciate that insects are the most fundamental species that our native wildlife (and humans) need to survive. While it may not be apparent, insects do tremendous and irreplaceable good for our ecosystem. First, they are the food source for many species within the animal kingdom (Aves, Mammalia, Reptilia, and Insecta). Our ecosystem has many species that are primarily (if not solely) dependent on the availability of insects for their survival, such as bats, night jars, kinglets, thrushes, and beetles, ants, and dragonflies.

Secondly, these insects are the earth's primary fertilization consultants—they pollinate flora to create new fruit/offspring, fertilizing our vegetables, fruit and nut trees, and grain fields that feed wildlife, humans, and livestock. Your strawberries, blueberries, walnuts, and alfalfa hay are available to us because of insects. I spend many sleepless nights thinking about the loss of insects in our environment—how that impacts me personally, the local ecosystem, and the world at large.

While our hospital treats very few insects each year, our education program focuses on teaching the public about the importance of our ecosystem and the full breadth of biodiversity, including insects, that is necessary for the ecosystem's good health.

In this issue of *The Ridgeline*, you will learn how we work to support biodiversity in the wonderful dominion in which we live! We also discuss the ecological importance of the key species highlighted in Rehab Corner.

This issue also highlights the wildlife patient numbers for 2018—as well as the donors who are critical to enabling the work we do! We are so grateful for all of our supporters!

Sincerely,

Hillary Russell Davidson



Cover photo by Michael Oak.

The Ridgeline

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Blue Ridge Wildlife Center is a 501(c)3 organization caring for native wildlife by integrating veterinary medicine, rehabilitation, education, and research.

BRWC is located in Boyce, Virginia on the Burwell van—Lennap Foundation's property on Island Farm Lane.

The Center relies on private donations exclusively. Contributions are tax-deductible.

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2018 in Review

2018 was a record-breaking year with a total of 2,195 patients admitted – a 20% increase from last year! This includes patients of over 130 different species, each with their own unique needs. Approximately half of these patients were wild babies that had been injured or orphaned while the other half consisted of sick or injured adult animals.

Similar to previous years, 48% of our patients were mammals and 42% were birds (See Figure 1). This year’s increase in reptiles and amphibians (up from 8% to 9% of the patient total) is a more significant increase than the 1% change implies! Since moving into our new hospital facility, aquatic turtle species have increased dramatically. We saw a 225% increase in Eastern Painted Turtles and a 280% increase in Common Snapping Turtles! Our amphibian patient load has also tripled in that short time (though amphibians are still an incredibly small percentage of our total intakes). These reptile and amphibian increases may be due to increased rainfall in 2018 or simply due to increased awareness that wildlife hospitals like ours can treat these patients.

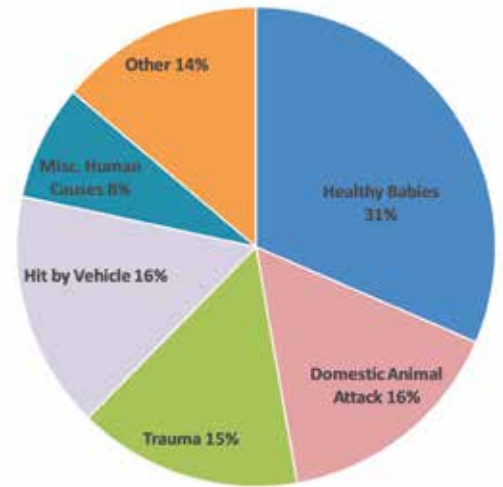
The first 24 hours are the most critical for any patient. Animals that are determined to have a poor prognosis on intake are euthanized to limit suffering. Others die in the first 24 hours despite our best efforts. This year, those that lived through the first 24 hours at the Center had a survival rate of over 70%!

The Role of Humans (*Homo sapiens*)

Some people believe that no one should help wildlife; let nature take its course. Unfortunately, animals have not been able to adapt and evolve quickly enough to some of the rapid industrial changes made by humans. Cars were never a natural predator with which wildlife had time to evolve. Nor were windows. Nor pesticides. Nor the construction of new subdivisions that comes with the destruction of innumerable wild homes. BRWC treats these animals in part to mitigate the negative and unfair effects of humans.

Every patient that comes into care is given an official diagnosis (see Figure 2). Some are very clear (eg. Hit by vehicle) while others have multiple, more specific causes listed under one heading. For

Figure 2 – Diagnoses



example, “Miscellaneous human causes” includes getting stuck in fences, glue traps, and garden netting, as well as accidentally disturbed hibernation, cutting down trees, lawnmower injuries, or other landscaping-related problems. “Trauma” is the diagnosis we use for traumatic injuries of an unknown cause. In most cases, these are suspected vehicle collisions or domestic cat attacks that were not physically witnessed.

It should be noted that an estimated 95% of our patients come into care for human-caused reasons, either directly or indirectly. Most people would agree that vehicle collisions, entrapments in fencing or netting, gunshots, glue traps, lead and rodenticide toxicities, etc. would not be a problem if humans were not in the picture. Other diagnoses are more debatable.

Our Center (and most wildlife professionals) fully accept that domestic cat attacks are a human-caused issue. The domestic cat (*Felis catus*) is an introduced, non-native species whether living in the home, outdoors, or as part of a feral colony. These cats are a single species, just as all domestic dogs are of one species (*Canis lupus familiaris*). Humans have spread these domestic cats across our continent creating feral populations, and humans continue to allow cats unsupervised outdoor access or abandon their pets outside when they

Figure 1 – Patient Breakdown



Diagnosis: Cat Attack

By Jennifer Riley, DVM

Humans have introduced a variety of non-native animals that wreak havoc on wildlife. In the United States, this includes species like Norway Rats, House Sparrows, and released pets like Red-eared Sliders and Burmese Pythons. At our hospital, no non-native predator causes as many injuries and fatalities as the domestic cat (*Felis catus*).

In 2018, as in all past years, over 12% of our patients were cat attack victims. This comes out to nearly 300 individual patients! Many are so severely injured that they must be euthanized on intake. It is important to note that this diagnosis refers only to attacks by domestic cats. Our only official native feline predator in Virginia is the Bobcat (*Lynx rufus*) and this species tends to stay far away from humans and rarely leaves prey in need of medical attention (ie, prey items are consumed as part of the natural and necessary diet).

The mouths of cats are NOT clean, and their sharp teeth and claws create wounds that close up as the teeth pull out of the tissue. This traps bacteria and allows infections to progress rapidly. Of those that make it through the first 24 hours, over 60% will survive. Sadly, most do not survive for 24 hours after a cat attack. Due to the severity of wounds and infection associated with these cases, only about a quarter of our cat attack patients survive to release—a number that is similar across many wildlife hospitals.

To put that 25% survival rate in perspective, over a third of our “hit by car” cases survive to be released. For patients that come into the hospital, domestic cat attacks are a more-deadly human-caused threat than a two-ton machine.



Keeping owned domestic cats indoors would save many wild animals and many of the Center’s financial resources. It would also allow for a higher quality of care for our beloved pets and limit the diseases that outdoor cats can spread to their human family members when they come back indoors.

The Veterinary Perspective

As a veterinarian, I would never recommend that a domestic cat be allowed to roam unsupervised, even part time. I am a cat-lover AND a wildlife-lover —the two are not mutually exclusive!

As most vets will tell you, we’ve seen too many horrific cat deaths from vehicle collisions, predator attacks, and easily preventable diseases. Veterinarians also take an oath to protect public health. Each time your cat attacks a wild animal, there is potential exposure to diseases that could hurt you and your family, including things like rabies and toxoplasmosis. There are also many diseases transmitted through ingestion of wild animals that could hurt or kill your pets. I never want to see any cat or wild animal suffer and the best way to prevent this is keeping domestic predators indoors. It’s simply not worth putting a beloved pet in that situation.

All too often, people choose cats because they are “low maintenance pets”, but this commonly believed myth is far from the truth! Cats are hunters and they will not be satisfied being ignored in the home all day. This is the most common excuse for letting them out. Though a life outdoors can be a form of enrichment, safer enrichment can be provided indoors by dedicated owners and supervised outdoor time can be provided using leashes and “catios”. These changes do not make life easier for the owner, but they certainly save MANY wild lives AND cat lives each year! If you care about animal welfare, please do not favor one species over another. Keep your cats safe indoors and keep wildlife safe outside! For more information on transitioning your outdoor cats to indoor cats, see the article on page 10.

Above: Cat leashes are a good way to give your cat some outdoor time. Photo by Erin Campbell

are no longer able to care for them. No one blames domestic cats for acting on their natural instincts in this situation. For these reasons, we believe firmly that cat attacks on wildlife are a human-caused problem.

Humans are present but a bit less direct in some diagnoses, such as aural abscesses in turtles. This seemingly natural condition is thought to be caused in part by lack of available vitamin A, a vitamin whose metabolism and utilization in turtles is disrupted by organochlorine pesticides. These pesticides are in the environment because of humans. For those that are not directly human-caused, many are exacerbated by humans. For example, mange is a parasite found in nature. However, when humans encroach on wildlife habitat or worse, leave food out for wildlife, these wild populations become more dense. When animal populations are denser and more interactions occur, diseases like mange (and rabies and distemper) can spread more easily.

In Figure 2, “Other” includes diagnoses such as infectious and non-infectious diseases, window strikes, intentional human attacks, native predator attacks, and abductions of healthy babies. We always recommend that you call the Center before bringing in any animal. In many cases, the baby you think needs help is actually doing fine on its own! Nearly 6% of our cases this year were abductions and luckily, we were able to successfully reneest most of these.



American Toad soaking in betadine solution to help keep its cat attack wounds clean. Sutures are visible on this toad’s back. Photo by Dr. Jen Riley.

By the Numbers

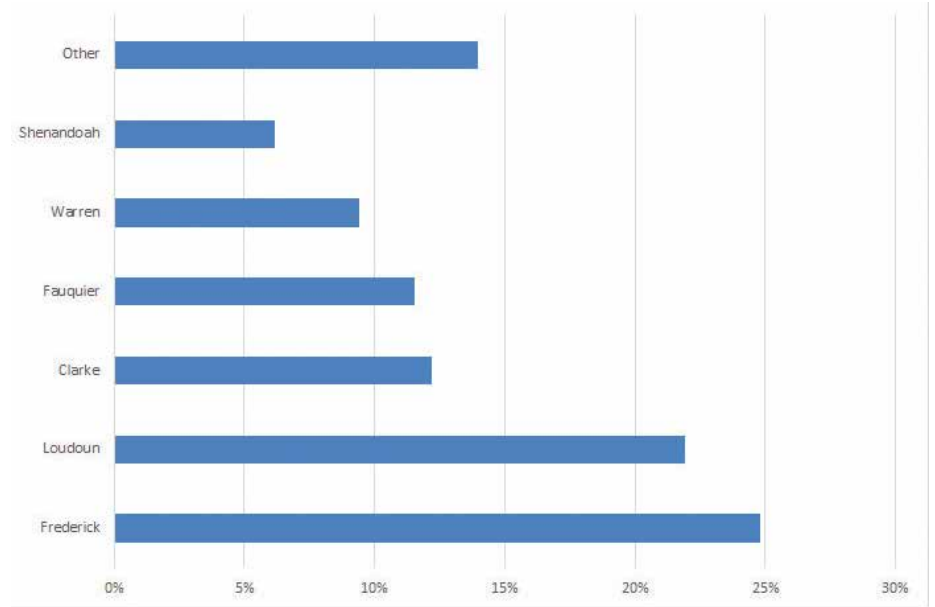
This year our veterinarian performed 120 surgeries including many orthopedic procedures on raptors, numerous turtle fractures, and seemingly endless laceration repairs. In addition to hundreds of in-house blood tests, fecal exams, and dozens of lead tests, we've sent out numerous samples for advanced diagnostic testing so that we can provide our patients with the highest quality of care. We've taken over 400 radiographs and performed over 100 necropsies for diagnostic and teaching purposes. It's been a busy year in the Center and our licensed veterinary technician, Cara Masullo, who joined our team in April, has been critical to our continued hospital growth!

Since moving to our full-service licensed veterinary hospital in 2016, our volunteer workforce has TRIPLED! We have multiple volunteers daily that assist our staff with the enormous amount of work that goes into running a hospital, rehabilitation center, and education program.

This year we have helped train 4 licensed veterinarians, 5 veterinary students, 4 conservation biology students from the Smithsonian Conservation Biology Institute, and 18 rehabilitation interns! We also taught over 70 children to love and appreciate these animals at our Wildlife Discovery

Figure 4 – Patient Intakes by County

The majority of our patients come from nearby counties including Frederick, Loudoun, Clarke, and Fauquier. Though most come from nearby, we are also the closest wildlife hospital for many other areas! 14% of our patients come from counties listed as “other”. This section includes places like Prince William, Arlington, and Stafford counties, but also counties as far away as Roanoke, Bland, Chesterfield, King William, and many others.

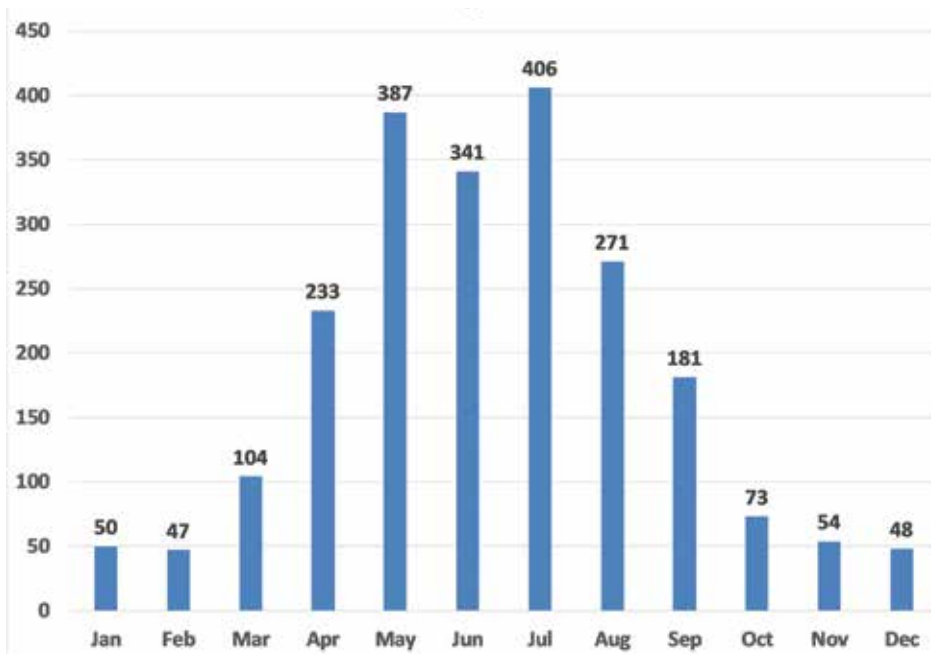


Camp this summer.

It's been a busy year, but we've accomplished a lot! Thank you to all of our supporters who make this important work possible. ■

Figure 3 – 2018 Monthly Patient Intakes

As you can see, we receive the majority of our cases in the Spring and Summer due to the large number of babies.



Giving Tuesday Results

In our previous newsletter, you may remember that BRWC was gearing up for our Giving Tuesday Campaign #WetAndWild, where we were fundraising to improve our aquatic facilities after a huge increase in aquatic patient intakes this past year. Since 2016, Common Snapping Turtle intakes alone increased by 280%!

Thanks to generous donors who matched funds that were given on that day, we were able to raise over \$15,000 towards updating our aquatic facilities! This money will go towards purchasing and constructing better brooder tubs for our young waterfowl patients, larger tubs with filters and drainage for our aquatic turtle patients, and updated outdoor caging for our aquatic patients, such as geese, ducks, beavers, mink, and others! We could not have achieved this goal without the great support of people like you, and our patients thank you for it!

2018 Patient Details

2,195 patients, 130 species **Domestic animals are not intentionally admitted and are not released to the wild.*

SPECIES	COUNT	SPECIES	COUNT	SPECIES	COUNT
AMPHIBIA	10	Eastern Screech Owl	23	MAMMALIA	1062
American Toad	7	Eastern Wood Pewee	1	American Beaver	2
Pickerel Frog	2	European Starling	42	Big Brown Bat	31
Spring Peeper	1	Fish Crow	10	Bobcat	1
		Gray Catbird	7	Coyote	1
AVES	928	Great Blue Heron	2	Domestic Rabbit*	5
American Crow	24	Great Crested Flycatcher	1	Eastern Chipmunk	9
American Goldfinch	14	Great Horned Owl	16	Eastern Cottontail	316
American Kestrel	5	Green Heron	1	Eastern Fox Squirrel	6
American Robin	40	Hermit Thrush	6	Eastern Gray Squirrel	174
American Woodcock	5	House Finch	35	Eastern Red Bat	4
Bald Eagle	2	House Sparrow	54	Evening Bat	1
Barn owl	3	House Wren	2	Gray Fox	9
Barn Swallow	6	Indigo Bunting	1	Groundhog	31
Barred Owl	30	Killdeer	1	House Mouse	22
Belted Kingfisher	3	Mallard	27	Mallard	3
Black Vulture	8	Merlin	1	Meadow Vole	2
Black-capped Chickadee	3	Mourning Dove	52	Northern Long-eared Bat	2
Blue Jay	15	Northern Cardinal	24	Northern Raccoon	75
Bobwhite Quail	1	Northern Flicker	6	Red Fox	23
Broad-winged Hawk	8	Northern Mockingbird	10	Silver-haired Bat	1
Brown Creeper	1	Osprey	3	Southern Flying Squirrel	6
Brown Thrasher	1	Peregrine Falcon	1	Striped Skunk	22
Brown-headed Cowbird	9	Pied-billed Grebe	1	Virginia Opossum	261
Cackling Goose	2	Pileated Woodpecker	2	White-footed Mouse	49
Canada Goose	23	Purple Finch	1	White-tailed Deer	6
Canvasback	1	Purple Martin	4		
Carolina Wren	71	Red-bellied Woodpecker	12	REPTILIA	195
Cedar Waxwing	6	Red-eyed Vireo	1	Black Rat Snake	18
Chestnut-sided Warbler	1	Red-headed Woodpecker	2	Common Snapping Turtle	23
Chimney Swift	64	Red-shouldered Hawk	44	Copperhead	1
Chipping Sparrow	5	Red-tailed Hawk	40	Corn Snake	2
Common Grackle	11	Red-winged Blackbird	3	Eastern Box Turtle	111
Common Loon	3	Rose-breasted Grosbeak	1	Eastern Milk Snake	1
Common Merganser	1	Ruby-throated Hummingbird	5	Eastern Musk Turtle	1
Common Nighthawk	4	Ruddy Duck	1	Eastern Painted Turtle	26
Common Pigeon	12	Scarlet Tanager	2	Five-lined Skink	2
Common Raven	5	Sharp-shinned Hawk	2	Northern Red-bellied Cooter	1
Common Yellowthroat	1	Song Sparrow	2	Northern Water Snake	1
Cooper's Hawk	16	Tree Swallow	1	Red-eared Slider	4
Dark-eyed Junco	1	Tufted Titmouse	5	Ring-necked Snake	2
Domestic Duck*	4	Turkey Vulture	14	Wood Turtle	2
Double-crested Cormorant	2	Unidentified Bird	3		
Downy Woodpecker	5	White-breasted Nuthatch	5	TOTAL PATIENTS	2,195
Eastern Bluebird	10	Wild Turkey	11		
Eastern Kingbird	1	Wood Duck	1		
Eastern Phoebe	9	Yellow-billed Cuckoo	3		

One Health: Why We Do What We Do

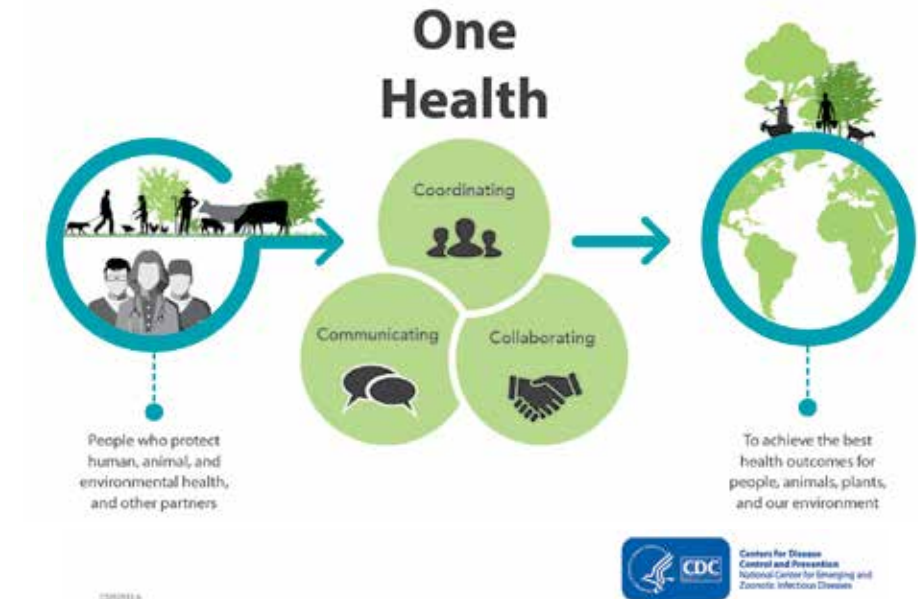
By Jennifer Riley, DVM

Our staff and volunteers spend their days caring for wildlife with the hope that we can release them back to the wild. But why? Part of the reason is obviously the importance of biodiversity and maintaining healthy ecosystems—we want to keep these animals where they belong and where they serve their natural purpose. In many cases, there is also the empathetic reason—this animal is hurting, likely due to a human-caused issue, and we want to make them feel better. From a wildlife hospital perspective, one of the biggest reasons to treat and rehabilitate these animals is the concept of One Health.

One Health is a field in which multiple sectors work together to attain optimal health for people, animals and the environment. One Health professionals include veterinarians, physicians, environmental scientists, public health professionals and many others. We humans are part of the ecosystem too and our health is dependent upon that of the environment. Human, animal, and environmental health are inextricably connected! By treating individual animals, being involved in research and student training, and educating the public, centers like ours work to improve the health and sustainability of all life on the planet.

Every day at the Center, we see diseases that impact both humans and wildlife such as rabies, west nile virus, *Baylisascaris procyonis* (the raccoon roundworm), salmonellosis, and MANY others. We deal with changes in the populations of vectors that transmit diseases to our patients, to humans, and to other wild species. By collecting data on these patients, obtaining samples, and confirming diagnoses, we are helping to protect our own health in addition to the health of the environment.

Our hospital regularly reports unusual incidents or unexpected findings to our state wildlife agency, to local health departments, and to researchers to protect human, animal, and environmental health. This year, we were involved in a research project to help define the spread of the invasive Asian Long-horned Tick. We found this tick on a Red-tailed Hawk, the first bird in North America to be found carrying it, in



addition to many other species. We plan to follow up with this study next year and will hopefully be able to share more information about where this tick can be found and what human and animal pathogens it may be carrying.

In addition to studying wildlife diseases, wildlife hospitals play an important role in environmental health simply by maintaining biodiversity! Biodiversity is a term that describes the variety of species and ecosystems found on our planet. By caring for all native species, and by teaching the public the importance of preserving habitat and creating wildlife-friendly yards at home, we are helping to strengthen entire ecosystems. This ultimately improves health for every living thing—including us humans!

Each species in an ecosystem has a role—a service it provides, a way it affects other species. All species are connected and the change or removal of any one species will cause rippling effects. Some of these potential effects we can determine in advance, but most will come as an unpleasant surprise that will ultimately be detrimental to everyone's health. The best way to prevent these problems is by working to keep our ecosystems strong. Having greater biodiversity and more species serving specific roles can help to limit the risk of species loss and the potentially devastating consequences.

One way we support biodiversity is by following the laws relating to invasive species. At our Center, invasive species are not rehabilitated as per permit regulations. Our state wildlife agency created this rule to help save our biodiversity. Invasive species, such as the European Starling and the House Sparrow, are a top threat to biodiversity, ecosystem health, and the economy. Though humans are to blame for these introductions, the presence of these invasive species is a biodiversity nightmare. In fact, **invasive species are considered “the second most common cause of recent and ongoing extinctions after habitat destruction.”** (Bellard C, Cassey P, Blackburn TM. 2016 Alien species as a driver of recent extinctions. *Biol. Lett.* 12: 20150623). These non-native animals are NOT part of our ecosystems and can often have negative impacts on the species around them. By working to rehabilitate and release native species, and by assessing and preventing the release of sick or injured invasive species, we are helping to preserve global health.

Most of our staff members have chosen to dedicate their lives to the care of wildlife because we love animals—especially wild ones! But it is important to remember that Centers like ours are also here to protect public health and educate humans on the importance of biodiversity, which we hope to do with this issue! ■

Biodiversity In Action

By Jennifer Burghoffer

The North American Beaver is a keystone species in our area. This means that other species rely on the presence of these animals to maintain their ecosystem. The loss of a keystone species can lead to a cascading effect that ultimately changes the entire landscape and effects what animals can live there.

Beavers are a semi-aquatic mammal; they spend the majority of their time in the water, only going on land when necessary, as walking is much more awkward for them than swimming. They are famously known for their homes: a tall pile of logs and sticks (the lodge) usually connected to a larger dam of logs, sticks, and vegetation. The damming of running water creates large areas of wetlands around the lodge, allowing the beavers to more easily swim to new sources of food. But the habitat created does not only benefit the beavers!

Wetland habitat creates new homes for reptile and amphibian species, waterfowl, and the bird and mammal species who might prey upon those reptiles and amphibians. Beaver dams are a natural filter for the water flowing downstream, catching debris and sediment, reducing the loss of valuable nutrients as water flows downstream. These nutrients will settle to the bottom of the newly created pond areas, increasing the vegetation in and around the wetland. The dam also causes water to spread to the surrounding area, raising the water table for the area, thus making groundwater more readily available to a variety of plants, allowing several different habitats to blossom.

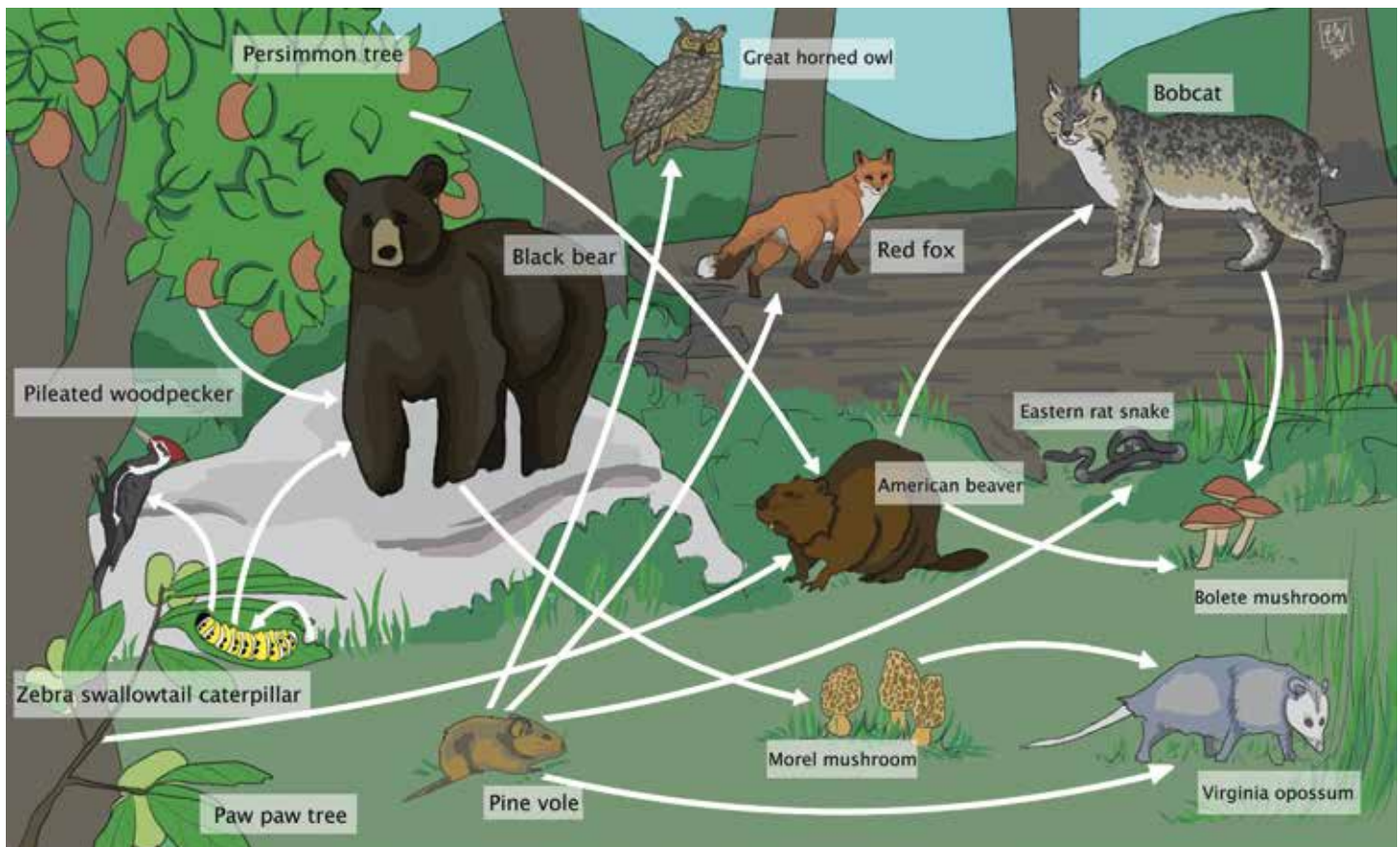
Removal of trees by the beavers for both food and building materials helps to open the forest canopy, allowing sunlight to reach the forest floor and encourage new growth. Beavers will stay at one dam location for

2-3 years, then move upstream in search of new food sources, which helps cycle these benefits to new areas, as well as connect areas of wetland together, creating transportation corridors for other aquatic species.

When you're feeling annoyed about a Beaver in your yard, please keep in mind that they are maintaining the habit you enjoy! They are the reason you see so much of the other wildlife you love. This goes for many of the "unpopular" species we treat at the Center. These under-appreciated species are creating a view for you, but more importantly, they are creating and enabling biodiversity. Help us keep them healthy so that our planet can thrive! ■

Virginia Forest Food Web

This illustration, by Emma Wilkinson, shows just a few examples of the ways in which these organisms are connected. Keep in mind that all organisms will provide nutrients for fungi and plants when they decompose and can also provide nutrition for scavengers like vultures!



Rehab + Corner Interesting Cases

By Jessica Andersen



American Beaver (*Castor canadensis*)

This American Beaver came to us after being found with large, infected wounds along its hind end. Unfortunately, despite aggressive treatment with fluids, antibiotics, and supportive care, this patient's wounds and infection were too severe, and it ended up passing away a little over a week after intake.

Beavers get a bad reputation from homeowners, but they are important in enabling other species of animals to thrive by creating and maintaining wetland ecosystems. See the biodiversity article on page 8 for more information about this keystone species! *Photo by Dr. Jen Riley.*

Just a Reminder

BRWC is dependent on your donations to help us care for so many patients. The Center does not receive state or federal funding for wildlife rehabilitation. We are so thankful to those who have generously made it possible for us to help with so many animal emergencies!



Bald Eagle (*Haliaeetus leucocephalus*)

An adult Bald Eagle was transported to us late on a Saturday night by a Conservation Police Officer from Stafford, Virginia, after being found on the ground unable to stand or fly. Upon intake, the eagle was found to be suffering from old, infected wounds over its right thigh. Problems associated with the wounds were preventing the patient from using that leg and his right foot. We suspect these wounds were from an attack by a conspecific (another eagle).

Bald Eagles, while prized as our national emblem, are not only hunters, but also opportunistic scavengers. These birds will take an easy, already-dead prey item over actively working to catch or hunt live prey. This leaves them vulnerable to lead poisoning, especially during the hunting seasons. This eagle's blood, like most eagles we treat, was positive for lead on intake. Luckily, the levels were not high enough to cause signs of toxicity (though no lead should ever be present in normal blood).

These birds help maintain a healthy competition for resources among other scavengers and keep our environment cleaner as they remove dead and decaying carcasses and prevent disease spread, just as our local vultures do.

Photo by Michael Oak.



Barn Owl (*Tyto alba*)

This Barn Owl came to us as a late fledgling that had fallen from its nest and was found wet and down on the ground below a silo. On intake, it was found to be suffering from a keel fracture. This bird was too young and too injured to be placed safely back into its nest, so it was brought to the Center to recover. It has since been reunited with its family. Barn Owls are incredibly good at hunting rodents, which benefits humans in many ways—keeping rodent populations down prevents spread of disease, property damage, and helps keep other populations well-balanced. However, often owls become the indirect victims of rodenticide poisoning, as humans try to take rodent control into their own hands. This often makes the problem worse, as the natural predators trying to take care of the problem end up suffering and dying, while the humans use even more poison in an attempt to keep rodent numbers down. Please keep our wildlife in mind when using any method of rodent control, and always use a professional that can help mitigate unintentional poisoning!

Photo by Rose Cooper.



Bobcat (*Lynx rufus*)

This young male bobcat was brought to us after a farm owner found it wet and limp on the ground. Given its condition, it was confused with a domestic cat. When he got a better look at it, the finder noticed this was NOT your average cat—this was a truly wild one! With help from our staff, the Bobcat was transported to our facility to treat suspected head trauma which had caused temporary blindness and unusual behavior towards humans. While rabies is always a suspected diagnosis in mammals with abnormal behavior, this Bobcat improved with treatment and regained its sight and natural behaviors within just a week, effectively ruling out the virus and helping to confirm our suspicion of trauma. Once it recovered and was deemed fully visual, it was returned back to the farm to give it the best chance of survival through the coming winter.

These cats are the only native cats recognized in Virginia by the Department

of Game and Inland Fisheries (VDGIF). They have evolved with their environment to fill a specific niche within their ecosystem, and they are an important control for small mammal populations. Non-native outdoor cats pose a threat to native animals like Bobcats due to disease spread and food resource competition. As rodents are a large source of their food, Bobcats are useful to humans by offering free “pest control” to rural and agricultural areas. We are glad we could return this cat to his home so that he can continue to provide this property owner with this important free service!

Photo by Dr. Jen Riley.



Eastern Chipmunk
(*Tamias striatus*)

This Eastern Chipmunk was brought to us after the finders believed it had accidentally been struck by their car. It came in with a swollen eye and head trauma, as well as blood coming out of its nose. After just a few short days in care, it had recovered fully. It was transported back to its found location and released, so that it would have its winter burrow and cache of food for hibernation.

While chipmunks are small and adorable, they perform many ecologically important roles—seed and acorn dispersal, burrow-creation that can be used by other animals, and of course, as a food source to many predators.

Photo by Jessica Andersen



Eastern Ratsnake
(*Pantherophis alleghaniensis*)

Gardens are precious to many homeowners, and the use of garden or mesh netting over their plants can help deter animals from eating or destroying them. For smaller animals, such as this Eastern Ratsnake, however, garden netting or any sort of wire or netting left out on the ground can be a serious danger. This snake was found and rescued from such netting, and thankfully its injuries were not too serious—our veterinarian was able to easily suture the wound closed, and it is now active, alert, and eating readily for us. It will overwinter with us until it can be released where it was found in May, as per state regulation.

Similar to beavers, snakes are not looked at fondly by most people, but we believe that knowledge is the key to becoming more understanding and thus more empathetic to these creatures. Snakes are generally non-aggressive, only attacking when threatened or cornered. When left alone, they will find spots to hide and avoid predators, like us. Snakes will eat a large variety of prey, ranging from small mammals and birds, all the way down to small insects. Generally, ratsnakes are much

more comfortable living in close proximity to humans, and therefore normally have the most impact on controlling pest problems around your home! Rodents and bugs can lead to structural damage and food loss, as well as the spread of disease, so having a snake around and letting him live peacefully in your area will benefit both of you!

Photo by Jess Andersen.



Red-headed Woodpecker
(*Melanerpes erythrocephalus*)

Keep your eyes on the road! This Red-headed Woodpecker was brought to us after it had been hit by a car, suffering from a fracture in its right wing. With bandaging, pain medication, and cage-rest, this bird was able to make a full recovery and was released back where it was found!

As a wildlife hospital, we aim to release as many patients as possible back to the wild to help mitigate the impact human action has on wildlife and their environments, and to help educate the public on steps they can take to prevent further harm! At least 10% of our average intakes each year are caused by vehicle strikes, and sometimes slowing down and staying focused on the road and surroundings can be the difference between life and death for an animal or even yourself! Photo by Dr. Jen Riley.

When Mother Nature Strikes



This November, the Wildlife Center of Virginia (WCV) was struck by a surprisingly strong ice storm that wreaked havoc on structures and power lines throughout the town of Waynesboro. They suffered

damage to their outdoor caging and temporarily lost power, which made diagnostics and surgeries impossible for a short time. Our staff reached out to their staff to assist in transferring nine patients from WCV to our Center that weekend. Once at the Center, we were able to give these animals full intake exams including radiographs, bloodwork, and other diagnostics as indicated.

Of those nine patients, seven have now been released! Animals found as far south as Roanoke were transported and released back at their found locations to give them the best chance of long-term survival. One transferred patient required euthanasia due to the severity of its injuries and the final patient, a Barred Owl, remains in care. The nine patients transferred included a Ruddy Duck, a Common Loon, two Eastern Screech Owls, three Barred Owls, a Great Horned Owl, and a Red-shouldered Hawk. We're lucky to have such an incredible network of both wildlife hospitals and home rehabilitators to help our wildlife when Mother Nature strikes! Photos by Jessica Andersen.



Social Media at Blue Ridge Wildlife Center



If you enjoy the “Rehab Corner” section of our newsletter, please check out our Facebook page! We use our Facebook page to keep our supporters updated on various cases and upcoming events. We post DAILY so it is truly the best way to stay up-to-date on Center happenings!

You do not need to have a Facebook account to see our Facebook page. If you do not have an account, but are interested in staying current, you can simply go to [Facebook.com/BlueRidgeWildlifeCtr](https://www.facebook.com/BlueRidgeWildlifeCtr). Though you will not be able to comment or donate without an account, you can still see many of our interesting cases that did not make it into the Rehab Corner of the newsletter.

Facebook is also a great way to donate and support the Center. By liking and sharing posts, you get our educational messages out to more members of the public. If you choose to donate, Facebook is an excellent option as there are no service fees charged—we get 100% of your donation!

Facebook also allows you to set up recurring payments. Any amount is helpful and receiving a regular amount of money each month (not just with major fundraisers) helps our staff keep things at the Center running smoothly.

Is your birthday coming up? Consider setting up a birthday fundraiser on Facebook! It's easy to do and you can set your own goal and invite your friends to donate to a cause you support.

In the past 3 years, our number of

Facebook followers has doubled from approximately 10,000 to over 20,000! From July 2017-December 2018 we raised nearly \$30,000 through Facebook! We hope that with your continued support and with new followers we can continue to grow our social media presence and fundraising ability!

Blue Ridge Wildlife Center also has Instagram (@BlueRidgeWildlifeCtr) and Twitter (@BRWildlifeCtr) accounts as well as a newly introduced YouTube channel (Blue Ridge Wildlife Center). We highly recommend you follow us on all social media platforms! ■



**Blue Ridge Wildlife Center
Combined Federal Campaign
CFC# 54098**

Continuing Education at BRWC



Blue Ridge Wildlife Center provided its very first continuing education event this year! This past December, our Veterinarian and Rehabilitation Program Manager provided lectures on a variety of topics to BRWC volunteers, local home rehabilitators, volunteers and staff from other facilities, as well as to persons interested in getting started in wildlife rehabilitation. Virginia

requires six hours of continuing education credits each year to apply for and maintain rehabilitation permits. Our staff was excited to host this event as well as provide an excellent networking opportunity for wildlife professionals!

Above: Dr. Jen Riley gives a lecture in BRWC's Bradley Learning Center. *Photo by Jessica Andersen*

Right: Jess Andersen conducts a tour of our Wildlife Walk including Raptor Hill where guests can view our Wildlife Ambassadors up close. *Photo by Dr. Jen Riley*



Here, Kitty, Kitty

Domestic cats in the great outdoors

By Cara Masullo, LVT

Safe for Our Cats, Safer for our Wildlife

We all love our feline friends and ultimately want them to be safe and healthy. This goes for our native wildlife as well.

Contrary to popular belief, feral cats are not wild animals, nor are they considered members of our natural ecosystem. For thousands of years, our native North American wildlife species have been evolving without these introduced cats and the cats' presence has thrown off the balance of the ecosystem.

According to the Smithsonian Migratory Bird Center, an estimated average of 2.4 billion birds and 12.3 billion small mammals are killed by cats each year in the United States alone. That is a large number of birds and mammals, some of which are endangered species, or are food sources taken from our native wildlife.

To make matters worse, keeping cats outdoors is unhealthy for the cats themselves! Outdoor cats on average have a significantly

reduced life span and are more at risk of certain diseases, predation, and vehicle collisions. Being outdoors may provide good enrichment for the cat, but there are other ways to provide this. An outdoor life is not fair to the cat or to the wildlife.

We receive patients daily that have been attacked by a cat, as well as the less frequent victims of dog attacks. To prevent the spread of disease, parasites, and fatalities of our wild and domestic friends alike, we highly recommend keeping your pets indoors or leashed and under direct supervision when outside.

Each spring, we get phone calls about people wanting to bring us healthy babies to prevent their cats or dogs from getting them. This is not an acceptable reason to remove a wild healthy baby from its home—what we would call kidnapping! Babies do best with their parents, and we always prefer to give them that chance of survival in their natural habitat before

intervening. Mom knows best! If you happen to find healthy babies, before kidnapping them, please call the Center if you are unsure if they need our help.

Patient Data

The Center takes in around 300 domestic animal attack patients each year, 2/3rds of which are known to be caused by felines. This year, out of over 250 known cat attack patients, over one-third required euthanasia due to the severity of their wounds and over one-third passed away while in care. Most of these patients are young animals that have not yet learned to properly evade natural predators and stand no chance against cats.

Health Concerns

Outdoor and feral cats contribute to the spread of disease including zoonotic diseases like ringworm, intestinal parasites, cat scratch disease, rabies, plague (associated with fleas), and the one most commonly associated with cats, toxoplasmosis (caused by parasite *Toxoplasma gondii*) Toxoplasmosis can spread from ingestion or inhalation of oocysts (eggs) found in cat feces; this is especially dangerous for pregnant women due to effects on the fetus. It can cause flu-like symptoms, neurological symptoms, or cause infants to develop severe eye infections, brain damage, or severe disabilities later in life. Cats become infected with this parasite by ingesting birds and small mammals, putting those that go outdoors at greatest risk. Cats and humans generally do not show signs of toxoplasmosis infection, which is why it can be such a risk to pregnant cat owners. This does NOT mean that you need to get rid of your cat if you become pregnant! Oocysts take more than a day to become infective, so as long as the litter box is cleaned daily, the risk is minimal. If the cat is kept indoors, the risk is even lower.

POUF: Cats Indoors Hits Home



Pouf, who was born outdoors, proceeded to grow up as an indoor/outdoor cat for the first 8 years of her life. My sister and I brought her to college and after the first week in our new apartment, she escaped outside into an unfamiliar environment and was missing for two months. When we thought there was no hope, she was

found a few miles away at our school's dairy barn amongst the cows. She was thin and riddled with intestinal parasites and seemed grateful to be back in a warm home. We were all relieved. She would not go outdoors unsupervised again. With dedication and concern for her safety, we began leash training her so she could still enjoy what she loved, being outside - safely! We are thankful every day she was not hit by a car or attacked by another animal. We got a second chance with her and we were not going to sabotage that.

Today, Pouf is 16 years old, happy and healthy, living with two dogs, two other cats, myself, and her mother, a veterinary technician.

- Emily Rajaniemi, DVM



1



2



3



4

1. An American Robin fledgling showing the significant feather loss that is often seen with cat attack cases; 2. This Northern Mockingbird fledgling is exhibiting subcutaneous emphysema (air trapped under the skin), a common side effect of feline-caused punctures. When cat's puncture the air sacs and skin closes when teeth are pulled out, the air from the air sacs gets trapped under the skin; 3. This young Eastern Cottontail was brought to a cat owner's door as a "gift". The patients often have no external signs of blood or trauma as the wounds cover over quickly, but they are typically lethargic and motionless due to infection; 4. This Eastern Ratsnake suffered a large laceration after an altercation with a cat. This was repaired surgically and the snake was able to be released.

Photos by Dr. Jen Riley

Trap, Neuter — Release?!

The idea behind TNR is to trap feral cats, spay or neuter them to prevent further reproduction and expansion of feral cat colonies, vaccinate them to help prevent spread of disease like rabies and feline distemper, and then release them back to their feral colony. It may be a start, but still leaves many cats free roaming, leaving them susceptible to predation or being hit by cars. Studies estimate that 70-95% of feral cats in one area would need to be spayed or neutered to make these programs effective. Many of the studies that TNR advocates cite claim to have lowered populations through TNR, but also state that high percentages of the animals were adopted out or euthanized and that TNR alone was not sufficient to achieve any lasting results. Keep in mind that the aim of TNR is to keep feral cat populations from increasing, not necessarily to decrease or eliminate them.

Though vaccinating these cats against rabies is good for public health and recommended for all cats, TNR programs do not provide effective vaccination coverage. (Roebeling AD et al. Rabies Preventions and Management of Cats in the Context of Trap, Neuter, Vaccinate Release Programs Zoonoses Public Health. 2014 Jun; 61(4): 290–296.) In Virginia, between 1999 and 2017, more cats have tested positive for rabies than bats, and they continue to be a public health risk as humans are much more likely to approach a cat with no known vaccine history than they are to approach

a wild animal. Many animals that spread the rabies virus may not yet be showing obvious clinical signs such as incoordination, tremors, excessive salivation, friendliness or aggression.

Releasing cats to the wild, even once vaccinated and spayed or neutered, further perpetuates an imbalance in our ecosystems by allowing non-native predators to impact our native wild populations. This can affect the food availability for our native predators, cause unnecessary pain and suffering for wild animals, and can lead to damage of wildlife populations.

Trap, neuter, ADOPT is a much more effective approach to keep cats and wildlife safe and healthy. Some feral cats may never be happy living in a home or a confined outdoor living space (such as a large "catio"). In certain situations, euthanasia may be a better option for some of these cases as it pertains to quality of life, as well as to limit the unnecessary wildlife killings per cat.

Transition Tips

Transitioning your outdoor cat to an indoor cat will be a gradual process that takes time, patience, and strong will to resist that cute face as they beg you to go outside! It's always best to start this process right away with young kittens so that there does not need to be any transition at all. Just remember, you are doing it with their best interest and the interest of other animals and people in mind. You are helping to save lives, reduce disease spread, and give your kitty a healthy, long life!

Hunting is a natural and important behavior in cats! Provide lots of enrichment for your feline friends other than play time with their human. This includes cat trees, scratching posts, food puzzles, string and feather toys, or even battery-operated toys/lasers for them to utilize their hunting skills on something other than our native wildlife. You can try planting kitty grass for your cat to graze on and practice natural behaviors.

Just like many people walk their dogs on a leash while outside, you can also leash walk your cat! Though they may be resistant to wearing something at first, gradually introduce them to the concept by first allowing them to wear the harness around the house. Once comfortable in their harness, add on the leash, and finally you can introduce your cat to the great outdoors in their new attire! Additionally, they can wear a "BirdsBeSafe" colorful collar that is designed with hopes of providing a warning to possible victims, though the efficacy of these is debatable. It has been shown that collars with bells are not necessarily preventative in cat attacks as wild animals don't necessarily associate the sound of a bell with a predatory attack.

Building an outdoor enclosure, caged run, or utilizing an existing screened in porch is an option that may allow for less supervised, contained, outdoor time for some of your cats. ■

Further Information:

www.abcbirds.org; www.petclassics.com/Cat-Enclosures; www.birdsbesafe.com; www.catiospaces.com; www.foodpuzzlesforcats.com; www.indoorpet.osu.edu/cats.

Donor Appreciations!

Blue Ridge Wildlife Center is only able to meet our mission through the generosity of our supporters! The next several pages lists the incredible donors to our organization through gifts to *The Ridgeline*, Animal Admissions, Annual Gala, Monthly Giving Program, or other programs that support our daily operations. Our Society of Wildlife Guardians include those donors with gifts of \$500 and above, committing to the quality care for our wildlife patients and educational programs.

There are two main lists—one for the fiscal year of 2018 (July 1, 2017 to June 30, 2018) and one for the first 6 months of fiscal year 2019 (July 1, 2018 to December 31, 2018).

Every effort has been made to provide an accurate listing of donors to all categories. We apologize for any errors or omissions. Please contact Hillary Davidson (hillary@blueridgewildlifectr.org) with comments.

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 Douglas Sterne
 David VanderMolen
 Mary VanderMolen
 Kenneth and Jill Yates

In Honor/Memory

In honor of Barbara and Andy Ferrari
 Mr. Timothy Harben

In honor of Calvin and Joan Coolidge
 Aders Insurance Agency

**In honor of The Honorable
 Curtin Winsor Jr.**
 Christopher Bell

In honor of Danielle Kazmier Bradley
 Mia Martin

**In honor of Heather McSherry
 and Mark Abdy**
 Elliot and Nancy Kirschbaum

Thank You!

So many wonderful people have donated goods and/or services, including animal nutrition, cleaning supplies, building materials, and assistance with miscellaneous projects, to BRWC that there isn't enough room to list them all. We are so grateful for these gifts!

We have over 20,000 followers on Facebook—these followers have donated almost \$30,000 between July 1, 2017 and December 31, 2018. We cannot thank our followers enough—you truly are incredible in supporting our patient care needs.

We are also grateful to the shoppers who purchase items through the Amazon Smile program. The percentage of your purchase that is directed to BRWC makes a difference! Thank you!



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Photo by Jessica Andersen

In Memory of Beeker

The Center is sad to announce the loss of our striped skunk ambassador, Beeker, to liver cancer at the end of 2018.

Beeker came to us in 2012 as a young orphan. Despite being rehabilitated with other orphans his age and according to our routine protocols, Beeker never developed normal skunk behaviors or defenses like the others. Due to these developmental issues, he stayed with us at the Center as a wildlife ambassador.

Over the past six years, Beeker has been a favorite at many of our educational programs and taught children and adults to love this misunderstood species. He will be greatly missed by all of those who were fortunate enough to meet and interact with him, especially our staff and volunteers.



Photo by Betsy Carswell

TAIL END