THE RAPTOR CENTER | Ensuring the health of raptors and the world we share

Raptor Release



Raptor Spotlight

Scout's story

Scout is from Oregon where he was taken illegally from the wild. Once discovered, authorities took Scout and placed him with a rehabilitator who assessed his health and his ability to survive in the wild. Because the conditions of his initial capture were unclear and he lacked some of the critical skills needed to hunt successfully on his own, he was deemed non-releasable and re-homed here at The Raptor Center.



Watch a slow motion video of scout online.

Sex: Name: Age: Scout Estimated 4 years Male

Species:

Red-tailed hawk (Buteo jamaicensis)

Species nickname:

Red-tail. Buzzard hawk

Taxa:

Order Accipitriformes, genus Buteo

Red-tailed hawks are relatively large hawks that look quite bulky and sturdy. Broad, rounded wings and a wide tail help them efficiently soar through the air. Like other raptors, females are larger than the males and weigh 2.5 to 3 pounds (1.1 to 1.4 kilograms). This species is quite variable across the country in terms of coloration and size. Scout is a western subspecies and a male, so he is fairly small with beautiful striped red tail feathers. He weighs about 2 pounds (0.9 kilograms).

In the wild, red-tailed hawks eat a wide variety of prey depending on location and season, including mammals, reptiles, amphibians, insects, and the occasional bird.

Average lifespan

The oldest known age for a wild red-tailed hawk is just over 25 years, though the average is less than 10 years. In captivity they can live to their late 20s.

Migratory pattern

Migration of red-tailed hawks varies and depends on location, making them "partial migrants." Typically those in the northern parts of Canada and the United States move farther south for the winter, but others reside in one area year-round.

Nesting

These hawks generally prefer a good vantage point, whether that's a tall light pole while hunting or a towering tree for nesting. They build large, sturdy stick nests that they will return to year after year (though great horned owls, which don't build their own nests, often try to claim red-tailed hawk nests as their own).

Rising to the challenge by Steve Turnbull

The difficulties of COVID-19 **I** are everywhere and one of our dedicated teams rose to meet these challenges while fulfilling our mission of rehabilitation, education, and research.

Perhaps the biggest initial challenge was suspending our volunteer program. Our incredible volunteers support our day-to-day operations in every way, but even remotely they were eager to help TRC whenever possible. Thankfully, in time we were able to allow small teams back onsite, and we are so happy to see their friendly, smiling (we assume, under the masks) faces again!

To keep our teams and the community safe, we have kept our doors closed to the public. However, behind the scenes we have been developing engaging ways to bring TRC to you, whether at your location or through exciting new virtual programs, as you'll learn elsewhere in this issue.

What hasn't changed throughout this pandemic is the top-notch quality of care for injured and ill raptors. Wild raptors didn't stop needing help because of COVID, and we are on track to have more patients through our clinic this year than the previous year!



Volunteer Nicole Szajner cleaning crates | Photo by Joanna Eckles



| Photo by Annette Ahlmann

Images worth 1,000 words

by Lori Arent

Perhaps the most important piece of equipment you will find in The Raptor Center clinic is a radiograph machine. Every patient that enters our doors gets between two and four radiographs (x-rays) taken upon admission. This is part of our complete diagnostic workup to ensure we don't miss something during our physical exam.

The images help us determine the presence and details of injuries, such as fractures or internal trauma, and even if a bird had a recent meal. Sometimes, the findings are quite unexpected! From an egg about to be laid, to a fishhook lodged in the gastrointestinal tract, the surprising information discovered greatly helps us set the best course of treatment.

Thanks to a generous gift by longtime supporters Tom and Ann Schwalen, we will soon upgrade our critical radiograph machine from a CR unit (computed radiology) to a DR unit

(digital radiography). Images will be delivered directly to a computer; i.e., no processing of cassettes is required. This is a more efficient system that provides higher quality images. Not only will this allow us to provide even better care to our raptor patients, but it will also enhance our teaching efforts.

Additional radiographs can be viewed online at z.umn.edu/RaptorRadiograph.



Fishhook in the gastrointestinal tract of a bald eagle | Photos by TRC

Clinic stays busy

The clinic was bustling with raptor admissions over the spring and summer, with more great horned owls seen than in the previous few years. With an early furlough of our rescue/transport volunteers followed by a slow restoration of service, the public really stepped up to transport injured or ill raptors to our clinic doors.

Admissions

January 1 - September 30, 2020: **709** (compared to **686** in 2019)

Top 5 species:

Bald eagle - 139 19.6% Red-tailed hawk - 108 15.2% Great horned owl - 96 Broad-winged hawk - 72 10.1% Barred owl - 60 8.5%

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Dr. Victoria Hall with Maxime the eagle. Hall begins as director of TRC at the start of 2021. "Victoria is a big-picture thinker and innovative and creative problem solver," says Julia Ponder.



Dr. Julia Ponder with Maxime the eagle in 2007, when Ponder fully stepped into TRC's director role. "Juli's excellence in strategic vision setting, fine tuned skills in navigating both the nonprofit and university world, and so much more is beyond invaluable to The Raptor Center," says Victoria Hall.

Victoria Hall to assume leadership of The Raptor Center

by Martin Moen

n January 1st, The Raptor Center will enter a new era as it welcomes Victoria Hall, DVM, MS. DACVPM as the third director in its almost 50-year history. Hall joined the staff in June as the first holder of the Redig Endowed Chair in Raptor and Ecosystem Health. Current director Julia Ponder, DVM, MPH, whose visionary leadership has taken the organization to new heights, will pass the torch as she takes on an expanded leadership role with the College of Veterinary Medicine. In addition, she will stay intimately involved with TRC, leading special projects such as the Partners for Wildlife program and helping Hall with the transition.

"I am so thrilled to have Dr. Ponder as a mentor and resource during and beyond this leadership transition," Hall says.

Hall's impressive background in management, veterinary practice, and global public health ensures TRC's sustainability and strengthens its credibility on One Health issues. Ponder couldn't be happier. "We are all in this together—raptors, humans,

environment," Ponder says. "It is a system that we are all integrally part of and dependent on. And TRC is an amazing tool for getting this message

That One Health message was gaining traction in 2007 as Ponder inherited the leadership role from Dr. Patrick Redig. She quickly applied her strong skills in fundraising and communications to strengthen TRC's position. "I capitalized on every opportunity, shared my vision, and was able to connect with the amazing community that makes our work possible."

One of those early opportunities was conversations about the potential to create a permanently funded, raptororiented chair. Strong support from generous donors made the Redig Endowed Chair a reality in 2019. Hall was recruited via an international search.

With a few months of experience at TRC. Hall is even more excited for the future. "After these stressful, challenging times of COVID-19 restrictions. I am even more

impressed. I believe that there is nothing better than to help lead and enable a passionate, driven team to do really important work that matters."

One of Hall's early projects was to guide TRC's transition to virtual programming. "The education team has taken the challenges of COVID-19 and turned them into opportunities as they rapidly create, test, and launch new virtual offerings to help support our community and schools," Hall explains. "The dedication of the staff, expertise in education development and delivery, and passion for education and outreach makes TRC an unstoppable force for good in the world."

With the leadership transition, Hall and Ponder look forward to continuing the mission and impact of TRC for many years to come. "Over fifteen years ago, I was given the gift of having Dr. Redig as a mentor and resource when I took over leadership of TRC," says Ponder. "Giving TRC the gift of deliberate leadership transition will ensure continuity and strength as it moves into the future."



weight, hydration status, and gastrointestinal tract (GIT) function to build a nutritional plan. Some admittees are a healthy weight. Others are starving.

"There's definitely some general protocols that we follow, so it's not like creating the wheel every time." Pellet egestion, for instance, influences every raptor's diet. This process takes place inside the gizzard. It grinds indigestible matter into a compact pellet that is then regurgitated.

Gavaging, or "tube feeding," is crucial for severely dehydrated raptors and those with beak or mandible damage. Staff administer the nutrient-rich formula via a lubricated tube, which passes down the esophagus and directly to the

Soon, patients graduate to clean meat: breast meat, liver, and organs. This mixture is free of fur, feathers, and bone, making it easy to digest. Those who respond well move on to skinned meat. The gradual reintroduction of bone helps staff

"We try to get them onto whole food as soon as we can," Arent says, "because that's really where they will gain weight." But proceeding to whole food too quickly can overload the system. Staff look out for excessive weight gain and problematic behavior, like food begging in hungry young raptors. "If the bird isn't responding well or processing the type of nutrition we're giving him, we recognize that pretty quickly."

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WHAT'S ON THE MENU?

Both TRC's patients and resident educational ambassadors receive items that reflect their natural diet. This includes a wide variety of responsibly-sourced poultry, rodents, and

That fish? Locally caught. "We have a handful of people that we know and trust," Arent explains. These donors deliver fresh sunfish, bluegills, and other panfish to the Center. A special permit allows TRC's freezers to exceed more than the legal fishing limit, allowing for multiple same-day drop-offs.

Some donations, like wild game, are off limits. Lead poisoning and bacterial contamination are just too risky. "The birds in our care are already suffering from some type of ailment, and they have added stress in their systems," explains Arent.

Instead, TRC sources poultry and rodents from dedicated, quality-assured breeding operations. Bird-eaters dine on quail from "down in Owatonna" and "day-old chicks from a hatchery in Iowa." Sometimes adult poultry comes right from the University of Minnesota campus, courtesy of the Department of Animal Science and its Poultry Teaching and Research facility. Rodent-eaters enjoy rats and mice provided by RodentPro in Indiana.

Occasionally, circumstances require live feeding: when testing a patient's vision and foot function, for instance. But live prey is mostly reserved for birds that have never hunted before.

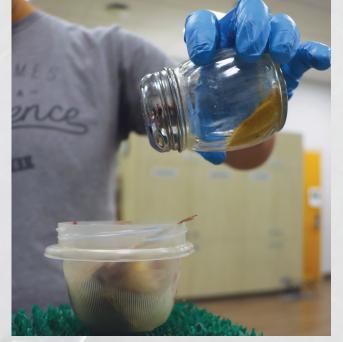
TRC treats around 120 young raptors each year. A handful of them, Arent says, "are starving for no physical reason." These raptors were likely separated from their parents too early. They're in a crucial formative period—a strong drive to always search for prey will be necessary for their survival. "It's tough being a young raptor."

Between 60 and 70 percent of young raptors don't survive their first year, largely because they fail to thrive after leaving the nest. TRC staff can't teach them all the basics. "But what we can do," explains Arent, "is make sure that when they see something appropriate, they go after it quickly."

At mealtime, staff place a black pan containing one or two mice in the enclosure. The raptor has 10 minutes at most before the pan's removed.

"We want those birds to be quick," Arent says. "Our belief is you really want to give them short windows of opportunity, which is what they'll be faced with in the wild."





Vitamins, like Vitahawk, are periodically added to raptor meals | Photo by Nathan Pasch



For some raptor patients in rehabilitation, we need to provide food or medications directly to the stomach. We do this through a process called gavaging, as seen with this red-tailed hawk | Photo by TRC

We precisely weigh all of our food before mealtime. It's a messy but important part of the job | Photo by Steve Turnbull



PICKY PALATES

Most birds transition well to TRC's standard menu. "But there are certainly individuals that don't," says Arent. We try many things to encourage them to eat."

First, staff rule out medical causation. "Sometimes it's just that they're very scared or uncomfortable in their housing. So then we look at the management aspect: 'What can we do to make you feel better?" Long-eared owls and northern harriers can take a week or more to start self-feeding. To help picky patients, staff try out different food items and feeding

"One species which is notorious for not eating in captivity is osprey," Arent says. In the wild, these fish-eaters follow a specific hunting pattern. That routine is crucial for stoking their appetite, so TRC must go the extra mile to get them eating in captivity. The key, Arent explains, is operant conditioning.

She begins the process by hand-feeding the osprey in a dark, calm environment. Each time Arent pops a piece of fish in the bird's mouth, she'll whistle. With enough repetition, the osprey begins to swallow whenever it hears that sound. After a few days, Arent transitions to whole fish. "The fish has to have big lips," she emphasizes. "For some reason, the osprey go right for the lips."

She'll place the fish between the bird's legs and leave the room. Then she'll whistle. The bird will swallow and look down at the fish, anticipating some tasty hand-fed morsels. Eventually, it will "resume" eating. "They usually pick up on it in a few days. And then once they're eating, they're eating." No whistling necessary.

Meals are custom-made and labeled for each individual bird's needs | Photo by Nathan Pasch





Hand-feeding a great horned owl a small piece of rodent meat I Photo by Nathan Pasch

COMPLIMENTS TO THE CHEFS!

There is no one "master chef" running TRC's kitchen. "It's a team effort," says Arent. Each patient under active medical care is assigned to a clinician responsible for its diet. Upon transitioning to rehabilitative care, a new clinician takes over. Volunteers help prep food and provide medications.

Meals are an important vehicle for medication and nutritional supplements, most of which come in flavorless powder form. "Raptors really don't have a good sense of taste anyway," says Arent. "We put medications in gel caps so the bird gets the full dose and just sprinkle special raptor vitamins on their food every other day."

Juicy meat is great for hiding pills—rat belly is a favorite but wiser birds force staff to get creative. One method involves hand-feeding the concealed pill in between bites of something extra irresistible, like liver.

Clinicians use creative problem-solving at every stage of a patient's journey. In rehab, for example, multiple birds of the same species are often housed together. This can make mealtime challenging among more aggressive raptors. Arent cites red-tailed hawks as an example. "Every now and then, we'll get a bird who is just so food aggressive that we have to house it separately."

Housing arrangements can grow complicated. Depending on the season, TRC may have anywhere from 40 to 100 birds at any given time. "It's staggering how much money we pay to feed not just our rehab birds but the education collection as well," Arent says. "TRC spends about \$35,000 on food every year. It is a basic need."

There are a lot of beaks to feed—and TRC is hungry to help.



Orton on his way to TRC after being rescued. | Photo by Foxfeather Zenkova

Celebrity rehab, The Raptor Center style

by Lori Arent

In late July, a little "stardust" settled on the clinic as a celebrity made a visit. His name? Orton, the male breeding peregrine falcon from Rochester, Minnesota. Orton and his companion, Hattie, have graced the skies of the Mayo Clinic campus for the past six years, raising young from their nest box atop the Mayo building.

In mid-June, four chicks left their nest, ready to face the challenges that awaited them. Young peregrines are supported by their parents for several weeks once they take to the air. What these chicks did not know is that their father would soon need support himself, but of a different kind.

Orton, identified by the leg bands he wore, was found on the ground in the shade of a parked car, taking respite from the hot sun. The Raptor Center (TRC) got the call that a peregrine was down and immediately contacted Foxfeather Zenkova, a Rochester wildlife rehabilitator we network with. When she arrived on the scene and slowly approached Orton, he tried to evade her.



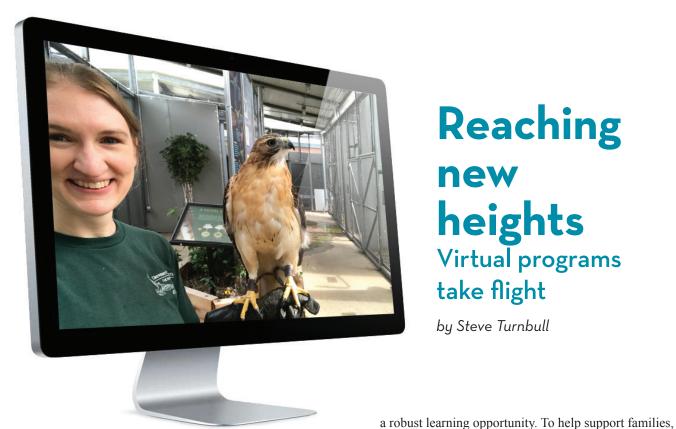
Orton in a body wrap while being weighed in our clinic | Photo by Dana-Franzen-Klein, DVM



"He gave me quite the chase," said Zenova "I could tell he was injured because of the way he was flying, skimming the ground and unable to get any height." Once she contained the feisty falcon, one of TRCs transport volunteers brought the famous falcon to TRC. He was greeted by Dana-Franzen-Klein, DVM. "This bird was amazing", reflected Franzen-Klein. "Gorgeous feather condition, exceptional body condition, compact and powerful."

A physical exam revealed that Orton had a crack in his keel bone. This bone is like our breastbone. In birds, it anchors the wing's large flight muscles. When it is damaged, a bird is unable to gain lift. Radiographs (x-rays) also indicated he had internal trauma, a very common result of collisions. "While his injuries were significant, they could have been much more severe," said Franzen-Klein.

For the next four weeks, Orton was a guest in our clinic. His treatment consisted of supportive care and rest. He healed without incident, flew long and strong during his flight evaluations, and was transported back to Rochester. When given his freedom, Orton flew to the nearby Gonda Building and surveyed his territory. Two of his fledglings entered the scene, and then Hattie returned too. What followed was truly a gift to his caring community—an amazing array of aerial displays as Orton and Hattie reestablished their pair bond. Beloved by many, this falcon family was together again.



Reaching heights Virtual programs take flight

by Steve Turnbull

A critical mission of The Raptor Center (TRC) is educating others about raptors and inspiring stewardship of our natural world. Previously, much of this was done in person, but in the age of COVID-19, we have had to innovate new solutions to engage with the public. Now we have several exciting new ways you can connect with TRC and see our birds like never before!

The first virtual program rolled out was Raptor Zoomies. This 15-minute program has a raptor and TRC naturalist "crash" online gatherings and surprise guests. Raptor Zoomies have been scheduled for kids' online parties, for team-building exercises, and as a break from the monotony of virtual business meetings — anytime you need to add excitement and joy to your virtual world!

With changing school models and the challenges of teaching due to COVID-19, we rolled out a virtual field trip program that includes never-before-seen views of our center, along with interactive time with our experts and birds. We've coupled the tour with downloads and offline activities to reinforce key lessons and make this



educators, and students, we created this program so people could donate a field trip to a specific school, classroom, or learning group. Or donate to a general fund to deliver this program to underserved youth who might otherwise not be able to afford it.

We also created a virtual classroom experience that combines our expertise and the thrill of live raptors with everyday classroom instruction. We can take over and lead a science class, teach math through raptors, or inspire creative writing and art activities.

Along with our virtual work, we are still able to safely do select in-person programs at your location by following public health protocols. For example, we have had the pleasure of surprising frontline workers at hospitals with live birds as a way to bring joy and levity, and to thank these heroes for their crucial service.

Thanks to the power of technology, we are able to bring our birds directly to you wherever you are—you can get closer to our raptors and see behind the scenes like never before! Furthermore, these new programs improve accessibility and can reach classrooms and participants well beyond our usual range. We've had people join us to learn about raptors from around the country, and we have even reached international audiences with our critical mission of conservation. You can learn more about these and other new, memorable virtual offerings and schedule one for you or your favorite organization at raptor.umn.edu/programsand-events/digital-programs.

> Watch our program sampler videos online at z.umn.edu/RaptorVirtualPrograms



Outdoor Investigations in the STEM Classroom

by Michael Billington

Outdoor Investigations in the STEM Classroom (OISC) is a professional development program for teachers in grades 6–12. Funded by a \$315,000 grant from the Cargill Foundation, OISC is a collaboration between The Raptor Center and University of Minnesota Extension aimed at bringing a STEMbased curriculum, Raptor Lab, into classrooms in underserved communities in Minneapolis, its northern and western suburbs, and St. Paul. OISC is a two-year grant that will reach 40 teachers and an estimated 3,000 to 4,000 students.

Raptor Lab engages students directly in the process of scientific investigation using real-world scenarios, interactive role-play, and technology. It promotes higher-level thinking through evidence gathering as well as data analysis and interpretation, and it fosters skills development in critical thinking and collaboration. Development of this successful curriculum was funded by the Minnesota Environment and Natural Resources Trust Fund.

Outdoor Investigator, a learning module within Raptor Lab, was developed in partnership with the University of Minnesota Extension and is based on Driven to Discover, a curriculum funded by the National Science Foundation (NSF). Professional development workshops were integral to the NSF grant and will be the model for OISC.

OISC will provide teachers with all the curriculum materials needed to implement Raptor Lab and will directly support teachers in its implementation. OISC will help teachers improve student persistence in STEM, as it provides equitable access to STEM programming for low-income students. Teachers will be able to provide their students with positive role models of people working in STEM, particularly women in science and leadership positions, and expose students to a variety of STEM careers and highlight higher education.

Raptor Lab is a free curriculum available online at raptorlab. umn.edu. If you are interested in participating in OISC and are a teacher in Minneapolis, its western and northern suburbs, or in St. Paul, contact Lisa Curtis at curtisl@umn. edu for more information about the 2021–22 school year.



Allison Gurney, an a Minneapolis Public School teacher teacher participating in OISC, is joined by her 2nd- and 6th-grade daughters as they learn more about raptors with a visit from Maxime and Mike Billington, program manager of OISC.

A pillar to our community

by Steve Turnbull

The Raptor Center (TRC) remembers the legacy of Paul Verret, longtime supporter and friend who recently passed.

Verret was a driving force for good in our community and was loved by many. With nearly three decades as the



Verret with TRC director Julia Ponder during the release of a rehabilitated great gray owl, April 9, 2005 | Photos by TRC

leader of the St. Paul Foundation, Verret advocated for such projects as the Mississippi Riverfront restoration, the Friends of the St. Paul Public Library, and the Diversity Endowment Fund.

From TRC's beginning, Verret was a champion, trusted advisor, and friend. "Without Paul's guidance and insight, it is doubtful that TRC would have been able to spread its wings. He will be deeply missed," said Julia Ponder, DVM, MPH, TRC's executive director.

Paul Verret's impact on The Raptor Center is undeniable. As a trustee of the Katherine B. Andersen Fund of the St. Paul Foundation, Paul helped support many projects at The Raptor Center. We mourn his passing and are immensely grateful that he is part of our story and that we had the honor to know him.

Take a bite out of our food costs

by Lori Arent

Food is a necessity for the nearly 1,000 wild raptors coming through our clinic each year and for the 30 educational ambassador raptors doing public outreach. From quail and chicks to rats and mice, our food budget each year is roughly \$35,000.

You can help us feed these hungry mouths by making a gift to The Raptor Center. Every amount makes an impact and ensures no one misses a meal.

- \$25 feeds an eastern screech owl for a month.
- \$50 provides a month of food for a red-tailed hawk or great horned owl.
- \$100 provides a month of food for a bald eagle.
- \$500 feeds an ambassador peregrine falcon for a year.

Our raptor experts design nutrition plans that meet the varying needs of the birds under our care. For raptor ambassadors, it is a lifetime plan that keeps them healthy. For raptor patients, the plan helps get them back to the wild as quickly as possible. We could not provide this high-quality care without your generous support. If you'd like to make a gift, use this link today!

raptor.umn.edu/give/giving-raptor-center

Contact us

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THE RAPTOR CENTER

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