

Raptor Release

Spring 2015

*Healthy raptors,
healthy world*



UNIVERSITY OF MINNESOTA

College of Veterinary Medicine

Driven to DiscoverSM

Raptor Release The Raptor Center

Spring 2015

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From the director

Dear Friends,

As this issue of *Raptor Release* goes to press, spring migration in the Mississippi flyway is in full swing. And with it comes a new challenge—H5N2, a novel strain of avian influenza that was confirmed in a Polk County, Minnesota, turkey farm in early March. Currently there are three strains of avian influenza in the United States, all of them highly pathogenic strains carried across the Pacific Ocean in migrating birds.



While this disease is devastating to the poultry industry, we are keenly aware of the wild bird component of this problem. In addition to wild birds being the source of the virus that is currently infecting turkeys, the strain of avian flu confirmed in Minnesota in March can be fatal to raptors. We are working with poultry producers, regulatory agencies, and colleagues throughout the College of Veterinary Medicine to better understand this outbreak and provide information to our colleagues to help mitigate the impacts of this disease.

In this issue of *Raptor Release*, you will read about our growing focus on Ecosystem Health, also referred to as One Health. Diseases like H5N2 and illness from environmental contaminants continue to increase, stretching our resources, not only through their impact on individual raptors but also by creating an urgency to delve deeper into the questions we have yet to answer. We need to think about how to build a better infrastructure, improve preparedness, and consult with other rehabilitation organizations and nature centers.

At the same time, we are in the midst of a major renovation and new construction project that will provide increased living and rehabilitation spaces for raptors in our care. In an effort to focus on our programs, use our resources wisely, and complete the transition to our new spaces, we will not hold a Spring Raptor Release. We will hold this year's Fall Raptor Release, and look forward to seeing you there.

As always, thank you for your much-needed and continued support. With your help, we continue to strive to improve the health of raptors and to make the world a healthier place where we can all thrive.

Sincerely,

Julia Ponder, D.V.M.
Executive Director

Healthy raptors, healthy world



By Fran Howard

In many ways, raptor populations and the world they live in are a lot healthier today than they were 40 years ago, when The Raptor Center was founded — but today's more complex challenges are proving harder to solve.

“We are living in a golden age of raptors in the United States, with more raptors than ever living in close proximity to people,” says Dr. Patrick Redig, co-founder of The Raptor Center (TRC). “Peregrine falcons, bald eagles, and ospreys are now back from the brink of extinction. Forty years ago, water and air pollution were major problems, and there were a lot of misinformed attitudes about the human impact on the environment.”

While environmental consciousness has blossomed since then, and federal laws have gone a long way toward improving air and water quality, the escalating human population, growing number of environmental contaminants, and emerging diseases are creating new challenges for wildlife veterinarians.

“Often, people think of the wildlife issue as black and white, dead or alive,” says Dr. Julia Ponder, executive director of TRC. “But there are subclinical stages of disease in which individual animals or animal populations fail to thrive.” For instance, reduced reproductive rates due to environmental stresses can devastate entire populations of animals and their ecosystems.

“While DDT is behind us, pesticides and contaminants are growing concerns for the health of ecosystems,” says Ponder. “And rodenticides and lead are ongoing, relentless problems in the birds that we see. The U.S. Environmental Protection Agency has made efforts to restrict the use of some of the worst rodenticides in an effort to protect nontarget species, but there is still broad exposure from rodenticides due to secondary impact when raptors prey on rodents that have been poisoned.”

Lead poisoning, a common problem in bald eagles, occurs when a bird ingests spent ammunition while feeding on carrion. For years, TRC has been at the forefront of far-reaching educational efforts to encourage hunters to use only environmentally safe ammunition. Still, change has proved daunting.

“It is discouraging to me that the message has not penetrated far enough or deep enough,” says Redig. “Each year in the United States, 8,000 to 10,000 tons of lead is still being released into the environment through spent ammunition.”

Disease events caused by emerging viruses, such as avian influenza and West Nile, are also increasing in number. Typically when an outbreak occurs, media attention focuses on whether the virus is a human pathogen and whether it creates a food-safety issue, but these human-centric issues should not be society's only concerns.

“If all we are interested in is whether the latest outbreak of avian influenza is also

a human pathogen, we are really missing the boat,” says Redig. “The H5 avian influenza viruses—three of which are now in the United States—are inextricably intertwined with the health of the ecosystem.”

Other top priorities in “One Health” or “Ecosystem Health” should be

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Scientific discovery and understanding lead to solutions

For the past few years, four teachers—Jennifer Clemmerson, Allison Fasking, Todd Kemper, and Keith Lillquist—have partnered with TRC on a educational program that has expanded to include partnerships with Hidden Oaks and Twin Oaks middle schools, where students have been studying the human impact on the food web.

TRC provides the classrooms with curriculum and real-life data on lead poisoning in bald eagles. The students then analyze the data to determine whether any patterns exist.

“The kids soon understand how these birds are litmus tests for what is being released into the environment and the impact that these contaminants can have on a living system,” says Fasking. “They also look at what, if anything, can be done to mitigate or solve the problem.”

biocontainment and biosecurity, understanding how ecosystem health impacts the severity of an outbreak, and discovering how to prevent and mitigate a disease's impact on animals and the environment.

One Health typically looks at how the health of humans, animals, and the environment are linked, but primarily from a human perspective, while veterinary medicine views it from the perspective of the ecosystem. A healthy ecosystem supports the health of all animals, including humans.

Over the past 40 years, TRC's focus has broadened significantly from the early days when it primarily focused on restoring endangered species by looking at individual impacts and situations. Over the past decade, its work in Ecosystem Health has mushroomed, and TRC has emerged as a leader in this area within the College of Veterinary Medicine, the University of Minnesota, and the United States.

"We have expanded our focus and perspective in the areas of research and education to understanding the bigger picture," says Ponder. "We need to be positioned at the interface where animal, human, and ecosystem health collide, so we can start to answer the steady stream of questions that arise. We are working at all levels, nationally and internationally, to address these complex issues, looking at raptors as sentinels."

Not knowing what disease event will occur next, TRC and others in veterinary and human medicine are forced into being reactive.

"There are not enough resources to answer the growing number of questions," says Ponder. "Humans have a never-ending footprint on the ecosystem, but we are working to better predict future disease events and challenges as well as at ways to mitigate their impact so that all animals can thrive in a healthy world."

Fran Howard is a St. Paul-based freelance writer specializing in veterinary medicine, wildlife, and conservation writing.

What does 'healthy raptors, healthy world' mean to you?

"To me, the phrase 'healthy raptors, healthy world' reflects the complexity and interrelatedness of Ecosystem Health. Raptors both depend on and reflect the health of the ecosystem in which they live. And they are a lens that we can look through to help us focus our work on the bigger picture and to increase the knowledge and understanding of what raptors—and other animals—need to thrive in a healthy world."



—Dr. Julia Ponder, TRC executive director



"Society has come a long way in protecting and appreciating raptors. However, we have a long way to go in making the world a healthier place for raptors and all animals. Climate change, emerging diseases, continued habitat loss, and environmental contaminants will continue to be problems until we are courageous enough to admit that our actions are having irreversible effects on the overall ecosystem and all living things that depend on it."

—Dr. Patrick Redig, TRC co-founder

"Raptors are indicators of the health of other living systems. In our classroom, the students are looking at the lead levels in the blood of eagles, but lead could be in the blood of other species as well."

—Allison Fasking, life sciences teacher

"Raptors are part of the ecosystem. They're in the food chain. They are a part of the world. If we have healthy raptors, the ecosystem is in good shape, and the energy in the food chain goes where it needs to go. But if we don't, and the raptors suffer, so does the ecosystem. It's a delicate balance."

—Seventh grader, Twin Oaks Middle School

"When raptors are healthy, everything is healthy. They reflect the health of the ecosystem as a whole. If they are dying, we will too."

—Seventh grader, Twin Oaks Middle School

"This means if the world is full of pollution, the raptors will have a major health impact. If the raptors are healthy, the world is clean and healthy."

—Seventh grader, Twin Oaks Middle School

"Raptors are the eyes in the sky. If the eyes are well, all is well."

—Seventh grader, Twin Oaks Middle School

Tales from the trauma center

By Lori Arent

On a recent trip to Florida, I was reminded of how many of our daily activities affect wildlife. Within 10 minutes of arriving, I was amazed to see black vultures, red-shouldered hawks, ospreys, and a Cooper’s hawk sharing the extremely busy urban landscape with us.

The first osprey I sighted was perched on a pole along the turnpike. The second flew overhead carrying material for its nest. I was excited to see the nest-building activity until I realized what the osprey was carrying: a plastic six-pack holder. My excitement turned to sadness because I knew that the piece of plastic was a potential death sentence for one of the parents or a chick whose egg was not even laid yet—its future was already in danger.



This red-tailed hawk suffered from lead poisoning, starvation, and gunshot wounds. The shot can be seen as white dots in the X-ray at right. Photo by L. Carey



Later, a complete physical exam revealed that she was suffering from a gunshot injury that fractured her left ulna, as well as toxicity from ingesting lead. She was victimized not once, but twice. This hawk was given intense supportive care, treated to remove the lead circulating through her blood, and her fracture was stabilized with bandaging. After a couple of weeks, as she slowly regained strength and healing was underway, her spirit was revealed. She once again had a sparkle in her eye that held the mystery of her interpretation of the world.

It has been a long journey for this hawk. Although we still don’t know whether she will feel the magic of wind beneath her wings again, we do know that

we will continue to work hard to educate people on how to be better stewards of the environment to protect others of her kind, and in turn, ourselves.

Lori Arent is the clinic manager at TRC and author of *Raptors in Captivity, Guidelines for Care and Management*, available at www.TheRaptorCenter.org.

daily basis to prevent our activities from having a negative impact on wildlife.

As we have shared before, raptors are sentinels for what is happening in the environment. Last June, an adult male great horned owl told us that West Nile virus had arrived a bit earlier than expected. Throughout 2014, 27 bald eagles reminded us how important it is to educate people about the dangers of lead and alternatives to its use. One patient really stands out, though, and that’s an adult female red-tailed hawk that survived the odds and continues her fight to return to freedom.

A red-tailed’s fight for freedom

It was a crisp fall morning when we got the call about an injured red-tailed hawk in Belgrade, Minnesota. After one of our dedicated transport volunteers drove two hours each way to bring her to our clinic, an initial exam indicated that she had been unable to fly for some time. Her keel (breastbone) was prominent (she was in a state of starvation), and her complacency was a sign of her advanced weakened state.

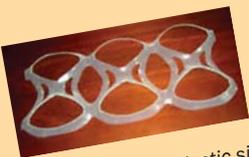
2014 clinic statistics

Total number of patients admitted: 752

Top five species admitted:

- Red-tailed hawk, 134
- Cooper’s hawk, 115
- Bald eagle, 114
- Great horned owl, 112
- Barred owl, 59

Average number of patients hoping for a spring release: 35



Cut apart these plastic six-pack holders to prevent them from strangling birds or other wildlife.

It takes a conscious and relatively small effort to make the earth a safer place to live. The plastic six-pack rings that make beverage cans or bottles easier to carry should be

cut so there are no closed rings that could trap an animal; copper can be chosen over lead when hunting to prevent nontarget animals (including humans) from ingesting the toxic metal; sport netting can be taken down when not in use; and we can use safer rodent-eradication techniques than setting out poisons that can kill nontarget animals. There are many actions we can take on a

It’s baby season

We are in the midst of the breeding season for Minnesota raptors, so please keep your eye out for active nests and let us know if you find one. The clinic works hard to keep raptor babies wild by placing “orphans” with suitable wild foster families. This is a team effort, and we value the information you share with us. Contact Lori Arent at arent@umn.edu.

TRC salutes Xcel Energy for years of support

By Ellen Orndorf

In 1962, Rachel Carson wrote *Silent Spring*, which highlighted the dangers of the chemical DDT. Ten years later, DDT was banned in the United States. The chemical, a biomagnifier, made the eggshells of peregrine falcons so weak that when the female sat on her eggs, she crushed them. As a result, peregrine falcons virtually disappeared from Minnesota and other Midwestern states.

Years of hard work and the commitment of the Midwest Peregrine Society, a group of private citizens and individuals from universities, colleges, state conservation departments, corporations, and conservation organizations in 13 U.S. states and two Canadian provinces, brought peregrines back to grace our skies.

Xcel Energy and a falcon named Mae also played a role. According to the Raptor Resource Project (RRP), a nonprofit organization that directly maintains more than 40 nests and nest sites in Minnesota, Wisconsin, and Iowa, a peregrine was seen flying around Xcel Energy's plant in Oak Park Heights in 1990. A plant employee who was also a falconer noticed the bird and asked company officials for permission to construct and mount a nest box high on a smoke stack for the bird to lay her eggs.

The first occupant of the next box was Mae, according to RRP. Mae raised young at the plant for many years, and her dozens of offspring helped restore the peregrine population in Minnesota. Today, Xcel Energy has nest boxes at nearly all of its plants in Minnesota, some equipped with cameras so the public can view live streaming videos at <http://birdcam.xcelenergy.com>.

Xcel Energy Regional Vice President Laura McCarten says that protecting wildlife and volunteering at TRC is one way the company shows its commitment to the environment.



During Xcel Energy's Day of Service, Kerry Klemm, Xcel Energy program manager, and her children, Kiera and Matthew, condition gloves for the staff and volunteers who handle raptors at TRC. Conditioning makes the heavy leather gloves more pliable.

"We are proud of our partnership with The Raptor Center, which provides opportunities for our employees, such as volunteering to clean mews on our annual Day of Service and serving on TRC's advisory board," she says. "We also appreciate the opportunity for our foundation to invest in TRC's hands-on K-12 environmental education experiences for the next generation of wildlife stewards."

Xcel Energy has been investing in TRC's educational programs, helping to develop and deliver STEM educational programming to public school students using raptors to dramatize environmental issues. Studies have shown that children are becoming increasingly disconnected from nature, removed from the outdoors, and disengaged from science at a time when complex environmental issues require an environmentally educated public.

For more information about making a gift of appreciated securities, or to learn about other ways to support TRC, please contact Ellen Orndorf, TRC's development officer, at 612-624-8457 or eorndorf@umn.edu.

Some of the information in this article was gathered from the RRP blog at <http://raptorresource.blogspot.com/2013/04/peregrine-falcon-nest-box-program.html>.



When Cindy Kleven recently retired from her career with 3M, another longtime supporter of TRC, she celebrated with the release of a young bald eagle along the river in Red Wing, Minnesota. Way to go! Photo by Sue Kirchoff

Education department expands programming

By Amber Burnette and Gail Buhl

In addition to the variety of programs offered by TRC's education department, the education staff has been busy awarding scholarships made possible by generous donations from TRC supporters grieving the death of a favorite ambassador bird; expanding the ACES (Athletes Committed to Educated Students) program; and developing the curriculum for a pilot program that will launch this summer.

Scholarships

Through the generous support of two groups, the Donald Weesner Foundation and the Geek Partnership Society's Project Lighthouse, TRC has been able to offer bus transportation to TRC for on-site programs and to off-site programs at local schools and organizations. Project Lighthouse also awarded a \$3,000 grant, its largest ever, to Murray Middle School in St. Paul for TRC programs to be given throughout the 2014-15 school year.



Taiga Photo by Jeff Fischer

Farewell, Taiga

We are sad to report that Taiga, TRC's merlin ambassador, is no longer with us. She had become unsteady on her feet, both in her living area and on the glove. She had a thorough exam and workup, and we immediately started treatment. This included management changes and moving her to a free-loft environment, with lots of easy-to-hang-onto perches and a thick layer of towels.

With medication and time, her balance improved for a few days. But it soon became apparent that Taiga's ability to



Naturalist Dan Hnilicka introduces Nero, a turkey vulture, at an ACES session.

stand, balance, and move normally had deteriorated and was irreversible.

The best course of action was to humanely euthanize Taiga. We give the birds in our care every opportunity to heal and recover from disease, but we also believe that their quality of life must be a top priority. Taiga's quality of life had deteriorated to the point that euthanasia was an act of compassion.

ACES

TRC has expanded its ACES after-school program. For many years, TRC has enjoyed teaching local fourth graders about raptors, focusing mainly on owl adaptations. Within the past year, TRC has expanded its ACES programming to include summer camps and local fifth-grade classrooms. In the fall, the program focuses on migration; in winter, it highlights grossology (the study of everything gross and cool in nature); and in spring, the focus is on eagles and lead poisoning.

Raptor Lab

Curriculum for Raptor Lab, which is currently being designed and developed, will focus on using technology to bring students into TRC's rehabilitation clinic



ACES participants meet Artemis, a peregrine falcon, who is introduced by Lily Carey, animal care technician.

to learn alongside veterinarians working on real cases. Students will learn about science and its real-world application as TRC veterinarians go through the scientific process of rehabilitation. The Raptor Lab pilot program is slated to be up and running in July 2015. Thanks to the Minnesota Environment and Natural Resources Trust Fund for supporting development of The Raptor Lab.

Amber Burnette is TRC's program associate and blog master, and Gail Buhl is education program manager.

Starting young: TRC engages youth as volunteers

By Dan Hnilicka

Every year, 15-20 young people commit their time to volunteer with The Raptor Center in a program called Youth RaptorCorps. This unique, age-appropriate youth program was launched because students who attended education programs would often ask how they could volunteer and help The Raptor Center. TRC's main volunteer program is for people age 18 or older.

Youth RaptorCorps meets once a month after school, and volunteers are between the ages of 9 and 14. This service-learning program is designed to get youth engaged in conservation by learning about raptors and ecosystem health, raptor husbandry, and citizen science. Youth RaptorCorps is a volunteer-run program, and the best teachers, of course, are TRC's winged ambassadors.

Each year, Youth RaptorCorps has a slightly different curriculum. In previous years, conservation service projects included building nesting boxes for kestrels. This spring, Youth RaptorCorps volunteers are increasing their citizen science efforts by taking observational data they make while birding and inputting it into the ebird.org online database. Volunteers are empowered to know that the data they collect on bird species in their neighborhoods will go into a larger research database used by the Cornell Lab of Ornithology and the National Audubon Society, two of the nation's most respected avian conservation organizations.

Each Youth RaptorCorps session has a different theme. Topics include migration, basic raptor rehabilitation, animal training, and environmental issues. In addition, volunteers are exposed to various career opportunities in conservation science.

Throughout the year, Youth RaptorCorps volunteers are encouraged to be citizen scientists by taking observational notes on phenology, the study of changing seasons. Volunteers learn how to gauge raptor and ecosystem health through citizen science

observations, diseases occurring in wild birds, and common injuries seen at the clinic.

Youth RaptorCorps is only one of many ways to engage youth in conservation efforts. Regardless of which method we use, the goal is always to reinforce the understanding that human actions truly affect ecosystems near and far. The more we know about raptors, the better stewards we can be of the habitats and world we share with these amazing animals.

Dan Hnilicka, an interpretive naturalist at TRC, is in charge of Youth RaptorCorps.



Education volunteer Sarah Conway shows Youth RaptorCorps volunteers how to gut and prepare food for raptors. Youth RaptorCorps is a service-learning program for students ages 9 through 14.

What does 'healthy raptors, healthy world' mean to you?

Interpretive naturalist Dan Hnilicka interviewed Kyra, an 11-year-old Youth RaptorCorps volunteer, and her mother, Gerilyn, about "healthy raptors, healthy world."

Dan: What does "healthy raptors, healthy world" mean to you?

Kyra: If there's a lot of healthy raptors, there will be less mice and less fish. They help with the balance of nature.

Dan: How do you help to make sure there are healthy raptors and a healthy world?

Kyra: Don't use a lot of pesticides or go hunting raptors.

Dan: What is your favorite part of volunteering with Youth RaptorCorps?

Kyra: I get to see raptors and it's really cool. It's more fun than seeing them on TV.

Dan: Gerilyn, what does healthy raptors, healthy world mean to you?

Gerilyn: Like Kyra said, balance of nature. You can learn a lot about what's going on from bird and other animal populations. Decreases might mean a larger environmental issue.

Dan: Why do you support your daughter being in Youth RaptorCorps?

Gerilyn: I grew up in the middle of the woods and learned so much in childhood about nature and the environment. Living in the city, I wanted Kyra to get that too. She also loves science.

New books feature true stories from The Raptor Center

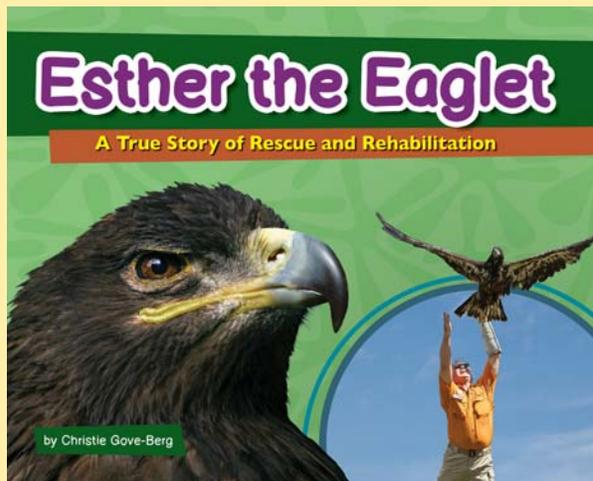
By Sue McCarthy

Esther the Eaglet, a True Story of Rescue and Rehabilitation

by Christie Gove-Berg
Adventure Publications,
2015, \$12.95

The first page of *Esther the Eaglet*, a picture book for preschool and early elementary-grade children, shows photos of the pine tree where Esther's parents built their home. You meet Esther and learn what she likes to eat and what her favorite weather is. The photos teach you as much as the text does about young eagles and their nests. Where is the nest in the tree? What does the nest look like? Does a baby eagle look like her parents?

Beautiful photos accompany the text that tells the story of Esther's accident and her journey to The Raptor Center. The story



also explains the procedures that were done to help Esther regain her health.

Animal Helpers: Raptor Centers

by Jennifer Keats Curtis
Arbordale Publishing, 2015, \$17.95

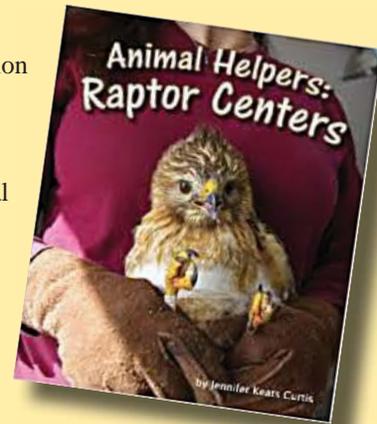
Animal Helpers: Raptor Centers is part of a series of children's books about zoos, sanctuaries, aquariums, and wildlife rehabilitators, and The Raptor Center at the University of Minnesota is featured in the book.

This book will appeal to preschoolers and early elementary-grade readers because of the large, clear text and photos that show veterinarians and others who participate in the rehabilitation process. One of my favorite photos is of a newly hatched great horned owl being weighed in a small cup on a scale.

The book devotes a section to helping young readers understand what an animal helper job would be like. The book's Creative Minds section contains

learning activities, additional information, and a segment on what to do if you find a raptor in need.

Sue McCarthy is an avid reader and longtime volunteer at TRC.



Where did the education birds go?

By Kelly Scott

Anyone who has had major remodeling done on their home knows how disruptive housing changes can be. Our education raptors can't check into a motel when their housing is disrupted, so where did they go during construction of the new mews (bird housing)?

During construction, we were able to house more than half of the birds at TRC, but some birds had to be moved to an unused building on the St. Paul Campus, which TRC outfitted with perches, bath pans, and other "furniture" that the birds needed. We were fortunate to find temporary housing on campus that provided

running water, a cleaning area, storage space, and a kitchen, and it was large enough for all the birds we couldn't house on-site.

Determining which birds would stay and which would go was a challenge. Not only did we have to consider which birds needed to be most accessible for education programs and their daily care requirements, but there are also considerations when housing multiple raptors in close proximity.

Over time, we developed a daily rhythm that helped us manage the birds at both locations. Our education birds received a respite from Minnesota's winter: The temporary housing was heated to 55°F, allowing the birds access to water pans the

entire winter. Anyone who's watched an eagle take a bath will realize how enriching this can be for a raptor!

Some birds went from our old outdoor courtyard, a noisy and stimulating environment with lots of foot traffic, to a fairly quiet indoor space. To ease this sudden change, we offered special food items or food hidden in "toys."

Going to off-site programs, being fed on the glove, or starting a new training program are all stimulating to the birds. Even changing locations can provide raptors with a new and interesting perspective.

Kelly Scott is an interpretive naturalist at TRC.

Around The Raptor Center



Dr. Ling-Min Wang

Staff news

Dr. Ling-Min Wang finished her clinical internship at TRC in January, returning to Taiwan to help raptors in her home country.

On the road

Dr. Julia Ponder gave several presentations at the North American Veterinary Community conference, including “Avian Fractures: Addressing and Understanding the Puzzle Pieces,” “Treating Common Avian Fractures,” “Advanced Treatments for Avian Fractures,” “Clinical Brief—Distraction Osteogenesis in Two Species of Raptors,” and “Clinical Brief—What Went Wrong?” She also spoke on the health impacts of spent lead ammunition at the Minnesota Environmental Health Association’s annual conference and participated in a two-day workshop to kick off a collaborative partnership between the Ecosystem Health group at the College of Veterinary Medicine and the Grand Portage Indian Reservation. The goals of this project are to design a preliminary monitoring system and identify key metrics of wildlife health by looking at mining impacts and subsistence communities.



Dr. Julia Ponder

Dr. Michelle Willette attended the National Alliance of State Animal and Agricultural Emergency Programs, followed by a One Medicine Symposium on Disasters and Diseases. She is leading a TRC initiative on emergency/disaster preparedness for rehabilitation organizations managing wildlife in captivity.



Dr. Michelle Willette

Gail Buhl, education program manager, and **Jamie Karlin**, veterinary technician, made presentations at the National Wildlife Rehabilitators Association’s 2015 Symposium in Princeton, New Jersey, in March. Karlin presented “The Basics of Avian Hematology” and “Therapy Updates from The Raptor Center.” Buhl presented “Training Small Owls for Education” and “Telling Your Wildlife Story.” She also moderated a training Q&A panel.

Events and workshops

Lori Arent, clinic manager, **Amber Burnette**, program associate and blog master, and **Buhl** co-taught “Raptors—Diversity, Anatomy, and Flight” for the University’s College of Continuing Education in November.

Generous donors helped TRC raise \$75,000 during 2014’s **Give to the Max Day**, in addition to \$50,000 in matching funds from **Rachel Hollstadt**, the **Sarah J. Andersen Fund of the Hugh J. Andersen Foundation**, and the **WM Foundation**.

Publications

Ponder coauthored “The Next Generation of Rodent Eradications: Innovative Technologies and Tools to Improve Species Specificity and Increase Their Feasibility on Islands,” published in the *Journal of Biological Conservation*.



Dr. Pat Redig

Dr. Pat Redig coauthored “Are There Legitimate Reasons to Retain Lead Ammunition and Fishing Gear?” The commentary was published in the *Journal of Avian Medicine and Surgery*.

Drs. K. Le, Willette, and Ponder coauthored “What’s your Diagnosis?” accepted for publication in the *Journal of Avian Medicine and Surgery*.

Redig and Ponder coauthored chapters on avian orthopedics in two textbooks, *Avian Medicine* and *Current Veterinary Therapy*.

The year in numbers: 2014



TRC treated **753** sick and injured wild raptor patients.



Nearly **7,000** people visited TRC.

More than **150,000** people were served through **959** educational programs and events.



TRC volunteers donated **23,900** hours—the equivalent of **11.5** full-time employees.



Upcoming events

Basic Raptor Rehabilitation

May 5–8, 2015

This annual four-day intensive workshop provides practical knowledge of the steps involved in raptor rehabilitation. Participants must be licensed rehabilitators with two years of experience or licensed veterinarians with a strong interest in rehabilitation. The workshop is limited to 20 participants. More information can be found at TheRaptorCenter.org.

Summer camps

Enraptured with Raptors

June 8–12, two age groups: ages 6–7 and 8–9

July 20–24, two age groups: ages 6–7 and 8–9

Wizarding World of Wildlife

June 15–19, two age groups: 8–9 and 12–15

June 22–26, two age groups: 8–9 and 10–12

Raptor Vet

July 6–10, two age groups: 9–11 and 12–15

Raptor Biomimicry and Engineering

July 13–17, two age groups: 10–12 and 13–15

Grossology

July 27–31, two age groups: 8–9 and 10–11

Birds of Prey Camp

August 10–12, Ages 9–13

Fantastic Flight Camp

August 13–14, Ages 9–13

Learn more about summer camps and register online at www.raptor.cvm.umn.edu/EducateandLearn/Programs/SummerCamps/home.html.

Care and Management of Captive Raptors



October 6–9, 2015

This four-day intensive workshop orients both novice and expert bird managers to the finer points of caring for and maintaining captive raptors for educational purposes. Highlights include hands-on learning in TRC's clinic

and working and meeting with TRC veterinarians and staff. More information can be found at TheRaptorCenter.org.

The Raptor Center directory

Donations

Gifts, endowments, estate gifts, and grants:
Ellen Orndorf, 612-624-8457
or eorndorf@umn.edu

Adopt-a-Raptor program:
Amber Burnette, 612-624-3391
or burne018@umn.edu

Educational programs

Field trips, outreach programs, and events
612-624-2756
raptored@umn.edu

E-communications

Want to receive e-communications? Go to www.TheRaptorCenter.org and click Connect with Us.

E-mail

raptor@umn.edu

Events calendar

TRC public events calendar
<http://tinyurl.com/TheRaptorCenterCalendar>

Fax

612-624-8740

Front desk

Injured raptors; general information
612-624-4745

Gift shop

TRC's online gift shop offers raptor-themed items such as clothing, books, toys, and jewelry. Go to www.TheRaptorCenter.org and click Shop.

Mailing address

1920 Fitch Ave.
St. Paul, MN 55108

Recycling for Raptors

To learn about drop-off locations, e-mail trcink@umn.edu.

Social media

Facebook: www.facebook.com/TheRaptorCenter

Blog:

www.TheRaptorCenterNews.blogspot.com

Volunteer opportunities

Volunteer positions and upcoming training sessions
Nancie Klebba,
nklebba@umn.edu,
612-624-3928, or
trcvol@umn.edu

Website

www.TheRaptorCenter.org

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The Raptor Release

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Celebrating four decades of dedication to raptors

Update: Douglas Dayton Education Wing and new raptor housing

As we go to press, we are very close to completing the construction of the new Douglas Dayton Education Wing and new indoor and outdoor raptor housing areas. Soon, visitors will be able to view the birds in every season, and the raptors in our care will have enhanced living and rehabilitation spaces. Watch our website, TheRaptorCenter.org, and social media for updates.

