



Forest Preserves of Cook County

Review of the Ambassador Animal Program

Presented to the Board of Commissioners on July 26, 2022

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Executive Summary

For decades, the Forest Preserves of Cook County has maintained live animal exhibits as ambassador animals at five of its six nature centers. Each year, tens of thousands of Cook County residents learn about these native animals and their importance to the local ecosystems through visits and educational programming with these animals. The Forest Preserves is deeply committed to providing the highest possible standard of care for its animals and keeping pace with best practices. Understanding the needs, care and welfare of captive wild animals is a rapidly evolving field, as is evaluating how these animals help to advance education and conservation goals.

In 2022, the Forest Preserves Conservation and Experiential Programming Department began a strategic planning process to review its goals and operations. At the same time, concerned residents began questioning the welfare of the imprinted coyote living at River Trail Nature Center. Some in this group are calling for the coyote to be removed from River Trail Nature Center and transferred to the Wildlife Animal Sanctuary in Colorado. Experts who have examined the coyote have said it is well-cared for and healthy and that transfer to a new facility to live with other coyotes could possibly and even likely cause the coyote harm.

To discern what course to take, the Forest Preserves expanded its strategic planning initiative to include this report: a review asking what does science show about these issues, what do respected peers do, what are the best types of programs—not only for the coyote but holistically across the entire ambassador animal program. What can be done better to care for wild animals that cannot live in the wild? What does the next stage of ambassador animal care, habitat and programming look like and how can the Forest Preserves reach those evolving metrics?

Forest Preserves staff conducted more than a dozen interviews with experts in the care of captive wild animals and peer-agencies that have ambassador animals at their site for this report. These organizations were selected based on their expertise and excellent

reputation as leaders in the field of animal care and programming. In addition, a literature review of academic journals and other data-informed resources were consulted for science-based best practices in animal care and programs.

The coyote at River Trail Nature Center, its enclosure and care have been assessed by the United States Department of Agriculture, the Illinois Department of Natural Resources, the veterinarian in charge of its care, and investigators from the Cook County Sheriff's Police Department. All have said the care for the coyote meets their standards and that the coyote is healthy and well-cared for.

For this report, the Forest Preserves brought in two independent doctors of veterinary medicine for a more extensive assessment. Using the guidelines of the Large Canid Care Manual from the Association of Zoos and Aquariums (AZA) as their standard, they observed the coyote's behavior and interactions with visitors and staff and reviewed its medical records and interviewed key caretakers.

Neither of these experts indicated that the coyote paces in an unnatural pattern or indicates stressful behavior. Both agreed that the care currently provided to the coyote meets AZA guidelines around nutrition, animal training, safety and containment, appropriate protection from hot and cold weather, and sufficient water, air quality, and natural light.

One AZA-guided expert said the current enclosure is inadequate and must be larger; the other said there are advantages to a larger enclosure, but that it is not a necessity. The Large Canid Care Manual's general housing guidelines for an enclosure is 5,000 square feet in size. Two of the peer agencies that the Forest Preserves interviewed have coyote enclosures of 1,350 square feet or less, and one is AZA accredited. The manual also includes recommendations for elements in an enclosure such as the topography and plantings, and these type of factors have been cited as being as important as total square footage for an animal's wellbeing.

One AZA-guided expert noted that River Trail Nature Center staff are not sufficiently discerning of the behaviors and needs of the coyote as a habituated wild animal. She also called for the coyote at River Trail Nature Center to live with another coyote. The other expert said that living with an additional coyote could be beneficial to the coyote at River Trail, but could also be stressful. More than a third of the coyotes tracked over 22 years by the Urban Coyote Research Project have been solitary animals. Three of the peer agencies we interviewed have coyotes at their facility that live alone; two of these facilities are AZA accredited.

With the care, health and well-being of the coyote at River Trail Nature Center documented as meeting necessary standards, there are other factors that should be considered in decisions about the coyote's future:

- Moving the coyote to a new location and introducing it to other members of its species will cause some—perhaps a significant—amount of stress to the animal. As an imprinted animal that has become accustomed to being cared for and interacting with people, these stressors may be increased.
- The largest threat to coyotes in the wild is humans. Education and interpretation about the coyote at River Trail Nature Center can help visitors understand and appreciate the role coyotes play in our local environment and hopefully lead to fewer negative interactions that leads to the death of many of these wild animals.
- The Wildlife Animal Sanctuary has explained that it turns down as many animals as it agrees to take every year and focuses on animals that are identified by animal welfare organizations as suffering or that are wards of the court: “Since there are literally tens of thousands of exotic and native animals in need of permanent placement within the United States, there are more animals than openings.” If the coyote at River Trail Nature Center remains at its current location, the home that would be available at the Wildlife Animal Sanctuary can be taken by another healthy animal that will be euthanized if not afforded this option.

With all these factors in mind, the Forest Preserves will make the following plans for its coyote:

Enlarge and improve the coyote enclosure. The Forest Preserves will build a 2,000-2,500-square-foot enclosure for the coyote at River Trail Nature Center, likely built at the current location. The new enclosure will include elements that provide enrichment to the coyote, increased complexity, more and larger spaces for the coyote to be away from people, and a more naturalistic environment. This will be built in 2022.

Enhance enrichment opportunities for the coyote. Staff will expand and deepen current regular enrichment activities for the coyote to invite more natural behavior and to take advantage of the new features and elements inside an expanded enclosure. Working with peer agencies and other experts, staff will update and standardize the procedures for welfare and behavior monitoring and veterinarian check-ups and care for the coyote.

Improve interpretation and messaging about the coyote. The Forest Preserves will ensure all staff who work with the coyote are cognizant of the underlying natural behaviors and needs of the animal, in addition to its behaviors and needs as an individual animal that has been imprinted and habituated to be with humans. The Forest Preserves will create consistent messaging to the public about the coyote and its care, as well as about coyotes living in the wild in Cook County.

Establish a more robust monitoring protocol for the coyote's behavior

The Forest Preserves will expand its methods of monitoring the coyote, including the option of a camera that can add observation for when staff is not present. The Forest Preserves will systematize how behavior is interpreted and how it is recorded and analyzed.

These recommendations are also informed by an evolution in the conception and execution of how to best care for ambassador animals that has accelerated in the last five to ten years. At zoos, aquariums, nature centers and other facilities around the country, ambassador animals help educate the public about the species and issues that affect the species or its native habitat. The AZA supports the appropriate use of ambassador animals as an important and powerful educational tool.

Key philosophical and ethical guidelines that are ascendent in wild animal husbandry and that influenced this report include:

- The “five-domains” of an animal’s care and mental state;
- an animal-first paradigm that gives animals choice and control of elements of their daily lives;
- a more thoughtful approach to how animals can be educational to the public, considering mixed research on the hoped-for impact; and
- recognition that every animal is unique, and evaluation and care should take its unique needs and requirements into account.

The report covers insights and opportunities for new protocols across the Forest Preserves’ ambassador animal program in the following areas: accreditation, animal acquisition, monitoring health and behavior, stress, habitat and enclosure, enrichment, animal training, choice and control, and staffing and procedures. The care that the Forest Preserves provides is in line with what research has shown is needed to ensure animals are safe and healthy. In many cases, Forest Preserves procedures and standards are among best practices in the field. However, there are also opportunities to improve, add or modify current work.

For the ambassador animal program, the Forest Preserves will implement the following plans, beginning in the second half of 2022. The ten specific action items can be categorized as falling into three broad categories.

Reorient Framework of Thought

- Adopt “Animal First” approach to public programs.
- Focus the ambassador animal program’s educational goals.
- Modify the acquisition process to reflect changes to the ambassador animal program.

Modify Existing Practices

- Create individualized health and wellness plans for each ambassador animal.
- Review and modify enclosures to meet best practices.
- Expand and deepen enrichment activities.

Systematize Operations

- Review and formalize the ambassador animal program’s manual and systems.
- Obtain the American Humane Conservation Certification.
- Establish sufficient staffing to support modifications to the ambassador animal program.
- Conduct ongoing evaluation.

Note that these broader plans will also impact the coyote at River Trail Nature Center, informing the changes to its current care.

The Forest Preserves ambassador animal program provides a home for animals that cannot live in the wild and advances the Forest Preserves’ mission to educate the public about the importance of nature here in Cook County. By having animals in our care and on view for the public, residents can learn how the Forest Preserves’ restoration and stewardship efforts make the preserves a better home for these animals and how the public can best co-exist with them. With these changes, we are confident that the program will not only be at the forefront of ambassador animal best practices, it will have a system in place to remain among the best for decades to come.

Ambassador Animals at the Forest Preserves of Cook County

The Forest Preserves of Cook County, one of the nation's oldest and largest conservation districts, manages nearly 70,000 acres of public land. For more than 100 years, the Forest Preserves mission has been "To acquire, restore and manage lands for the purpose of protecting and preserving public open space with its natural wonders, significant prairies, forests, wetlands, rivers, streams, and other landscapes with all of its associated wildlife, in a natural state for the education, pleasure and recreation of the public now and in the future."

From salamanders to red-tailed hawks to white-tailed deer, all animals play an important role in keeping the ecosystems found in the Forest Preserves diverse and thriving. Healthy natural areas provide Cook County's residents with clean air and water, help to reduce flooding and soil erosion, provide shade and beauty, and allow people of all ages and abilities to explore nature and participate in outdoor recreation activities.

Animal exhibits and programs have long been a part of the Forest Preserves' education efforts. Trailside Museum of Natural History, one of the Forest Preserves' six nature centers, began taking in orphaned and injured animals in the 1940s, rehabilitating many and releasing them into the wild whenever possible. However, animals that were already imprinted on or habituated to humans or whose injuries prevented them from surviving in the wild were housed in enclosures at the nature center and programming was developed to educate visitors on native wildlife.

As new nature centers were added to the Forest Preserves over the decades, they were managed by what was then called the Conservation Department. In the 1990s, that department was merged with the Forestry Department to create the current Department of Resource Management, which continued to be in charge of the nature centers and the ambassador animal program. That changed in 2014, when the nature centers were incorporated into the new Department of Conservation and Experiential Programming (CEP).

Throughout this history, it has been a constant that the Forest Preserves holds the welfare of the animals in its care as the primary goal of the program and that the staff prioritizes caring for the animals. The ambassador animals have supported the mission of the Forest Preserves to teach the public about the native animals and habitat of Cook County and to foster an appreciation and respect for them.

Today the six Forest Preserves nature centers use animals in programming and five of the nature centers have ambassador animals on public display. These mammals, birds, reptiles, amphibians and fish help to celebrate the significance of the many diverse ecosystems that can be found within the Forest Preserves. Ambassador animal exhibits and programs:

- Teach people about wildlife native to Cook County
- Celebrate the Forest Preserves' remarkable fauna
- Promote co-existence between humans and wildlife
- Overcome people's fear or aversion to some animals (snakes, rodents, etc.)
- Inspire empathy for animals and nature
- Promote an interest in protecting wildlife and the natural lands that are their home

Tens of thousands of visitors interact with the nature centers' ambassador animal exhibits and programs each year. Forest Preserves staff also travel to off-site locations such as schools and libraries with ambassador animals, reaching thousands more Cook County residents each year. The Forest Preserves animal programs are some of its most popular programming and participants regularly report they appreciate the animal encounters and learn from them. The Forest Preserves has always ensured that none of the animals in its care are utilized for entertainment but solely to educate visitors. When an animal is in a scheduled event, a program plan is created by staff that includes goals and messages that anchor the presentation.

All bird and mammal ambassador animals at the Forest Preserves are either rehabilitated, habituated or imprinted animals that cannot be reintroduced to the wild. The reptiles, amphibians and fish were born in captivity, are former pets that were relinquished, or were collected from the wild with permission from the Illinois Department of Natural Resources.

The Forest Preserves is required to maintain a Scientific Permit with the Illinois Department of Natural Resources to display native fauna for educational purposes. Under the federal Animal Welfare Act (AWA), the Forest Preserves holds a Class C exhibitor license by the United States Department of Agriculture (USDA) for the mammals in its care (US Fish and Wildlife Service requires similar licenses for the ambassador animal birds at the Forest Preserves).

“Facilities using regulated animals for regulated purposes must provide their animals with adequate housing, sanitation, nutrition, water and veterinary care, and they must protect their animals from extreme weather and temperatures,” according to the USDA. The regulations are outlined in detail in the “Blue Book” of Animal Welfare Act and Animal Welfare Regulations.

The USDA inspects all permit holders regularly: “Highly trained USDA inspectors located throughout the United States conduct routine, unannounced inspections of all facilities licensed or registered under the AWA to assess these facilities’ compliance with AWA. Inspectors are classified as veterinary medical officers (VMOs) or Animal Care inspectors (ACIs). All VMOs have graduated from a veterinary medical college, and many have been private-practice veterinarians prior to joining USDA Animal Care. ACIs have education in the biological sciences and/or extensive experience in the care and handling of animals.” The last USDA inspection of River Trail Nature Center was in Spring 2022, which the site again passed without any violations.

The staff at the nature centers care deeply about the welfare of the ambassador animals. The Forest Preserves has health and monitoring processes in place for the animals in its care. Some of these processes are followed daily, such as visual health checks, cleaning and feeding, others are on a schedule, such weight monitoring and positive reinforcement training, while

others can vary in frequency dependent on the animal’s needs and staff time and capacity.

Most animals have the space and opportunity to be off view from the public in boxes, kennels and similar areas. Staff monitor animal use of the space and adjust enclosures so that all animals have places to hide, protection from weather and the elements and correct and varied enrichment that provides physical, mental and emotional stimulation. Nature center buildings are closed to the public every Friday, which allows staff to deep clean all animal enclosures. The welfare of the animal is the deciding factor in determining which animals to bring to off-site programming.

Nature center staff have years of experience taking care of the animals at the nature centers and are trained internally on animal care, including dietary needs, enrichment, training, enclosure adaptations and cleaning. Currently Forest Preserves staff are members of the International Association of Avian Trainers and Educators (IAATE), the Association of Zoos and Aquariums (AZA), and International Wildlife Rehabilitation Council.

New nature center staff are trained by existing staff who are most familiar with the animals and, in some circumstances, from advice from members of the Forest Preserves’ Wildlife Division who are experts in native animals. Many of the staff who are tasked with caring for the animals bring their own experience and training from outside of the Forest Preserves, or through research they have done on their own. Although nature center staff have been provided with some additional professional service related to animal care at specialized workshops and classes, professional training or certification is not required.

Medical care for the animals is provided by Niles Animal Hospital and Bird Medical Center, which has been the primary veterinarian service for the Forest Preserves for the past eight years. The staff at Niles Animal Hospital provide yearly exams and regularly checks on the animals, with both on-site care and at its facility in Niles, Illinois.

In 2013, the Forest Preserves developed an Animal Care Committee to prioritize animal care practices and develop protocols for animals in its care. Beginning in 2019, the committee reconvened to create a standard

of care policy. Comprised of a full-time staff member familiar with animal care from each of the six nature centers, the committee meets four to six times per year and discusses animal care, develops protocols and standards, including the creation of an acquisition protocol, and makes recommendations to CEP leadership.

Animal exhibits and programs are a relatively modest component of the Forest Preserves. Approximately 30 percent of staff time at the nature centers is currently spent on animal care, training and enrichment, and ambassador animal programming. In addition, the Forest Preserves currently commits about \$63,000 annually to animal care, including veterinary services, food, habitat maintenance and enrichment.

Report Goals and Research

The catalyst for this report is concern by members of the public about the enclosure and care of the ambassador animal coyote that lives at River Trail Nature Center. It is envisioned, though, as a tool to reach the next step in the evolution and improvement of the entire Forest Preserves' ambassador animal program. It has been created in conjunction with a strategic plan for the Conservation and Experiential Programming Department, and will help inform modifications to that department's goals, structure and programs. It also provides research and guidance on the best course of action for the coyote.

Through this review process, the Forest Preserves sought to accomplish the following goals:

1. To better understand the evolving field of animal care and welfare and its attendant philosophies and ethics.
2. To learn best practices and protocols in ambassador animal care so that the Forest Preserves can ensure it is providing the best lives for all its resident animals, including the coyote at River Trail Nature Center.
3. To recommend changes or improvements to existing Forest Preserves' procedures and programs for ambassador animals.
4. To determine if and how animal exhibits and programs with ambassador animals advance the Forest Preserves' mission to educate and inspire people to care about and for animals and nature.

Research Methodology

To ensure the best care and best possible outcome for the coyote and for all the animals in its care and to be responsive to public concerns, the Forest Preserves embarked on a rigorous review of its animal care and programming policies and protocols. This included:

- Interviews with experts, including representatives from national organizations, zoo leadership and academics

Organizational Interviews

EXPERTS IN CARE

Chicago Zoological Society

The Chicago Zoological Society (CZS) operates Brookfield Zoo, which houses more than 2,000 animals from around the world; manages an ambassador animal program; and is accredited by the Association of Zoos and Aquariums. CZS also operates Centers of Excellence on topics such as enriching animal welfare and conservation leadership.

Lincoln Park Zoo

Founded in 1868, Lincoln Park Zoo manages nearly 200 unique species from around the world. Lincoln Park Zoo's staff are leaders in local and global wildlife conservation, community engagement, and animal care and welfare systems that benefit zoo animals and wild ecosystems. Since 1989, Lincoln Park Zoo's scientific team has supported more than 500 zoo species with science-based management recommendations and published more than 275 scientific articles and chapters. Lincoln Park Zoo is accredited by the Association of Zoos and Aquariums.

Shedd Aquarium

Shedd Aquarium houses 32,000 animals and has a mission to spark compassion, curiosity and conservation for the aquatic animal world. Accredited by the Association of Zoos and Aquariums, Shedd Aquarium promotes compassion for animals, curiosity in its visitors, and conservation to protect wild species and wild spaces. In addition to Shedd Aquarium's contributions to local nature, Shedd's Animal Response Team works with conservation partners around the globe to rescue animals.

University of Wisconsin-Stevens Point-Captive Animal Program

Founded in 1894, University of Wisconsin-Stevens Point today offers more than 100 program options within 80 baccalaureate degree programs. Its College of Natural Resources offers courses in captive wildlife management, wildlife techniques and wildlife diseases and includes an environmental ethics program.

National Wildlife Rehabilitators Association

Since 1982, the National Wildlife Rehabilitators Association (NWRA) has been dedicated to improving and promoting the profession of wildlife rehabilitation and its contributions to preserving natural ecosystems. NWRA is a membership organization that offers education and training to practitioners and publishes Wildlife Rehabilitation Bulletin, a peer-reviewed, online, open access journal to support the science and practice of wildlife rehabilitation.

- Review and discussion with peer organizations to benchmark and evaluate their animal programming and care
- Review of relevant articles and research papers related to animal care and programming
- Assessing internal processes and protocols at the Forest Preserves related to animal care and welfare
- Engaging third-party experts to conduct a review of the coyote's enclosure, care and welfare

From March through June 2022, the Forest Preserves interviewed both experts in the care of captive wild animals and peer-agencies that have ambassador animals about science-based best practices in animal care and programs. These organizations were selected based on their expertise and excellent reputation as leaders in the field of animal care and programming (see *Appendix 2 for a list of individuals interviewed*).

Conversations with representatives from these institutions covered administering health care, monitoring animals' physical and emotional health, habitats and enclosures, diet, enrichment, training, staffing levels, staff trainings and certifications, equipment and software, acquisition process, how to select animals to become ambassadors and participate in programs, euthanizing animals that may be in pain, ethics and philosophies, positive reinforcement training techniques, accreditation programs, and more.

Niles Animal Hospital and Bird Medical Center

Niles Animal Hospital provides contracted veterinary care for the Forest Preserves of Cook County nature centers. Recognized as one of the foremost veterinary practices in the nation, Niles has an outstanding in-house laboratory with the capabilities to perform blood counts, blood chemistries, coagulation panels, certain endocrine tests, fecal examinations, urinalyses, certain serological tests and also utilize digital radiography.

PEER AGENCIES

Cascades Raptor Center

Founded in 1987, Cascades Raptor Center, located in Eugene, Oregon, includes a nature center with one of the largest collections of native species of raptors in the Pacific Northwest. These resident birds are housed in large outdoor aviaries on the wooded hillside property and are an integral part of the educational mission to create awareness and respect, and to foster care of the wild world. The Cascades Raptor Center, a wildlife hospital, receives more than 300 orphaned, sick and injured birds each year, primarily raptors.

Cosley Zoo

Located in Wheaton, Illinois, Cosley Zoo has 20 exhibits housing 200 animals, including a variety of domestic farm animals and Illinois native wildlife. Conservation initiatives at the zoo include partnerships with the Forest Preserve District of DuPage County and other agencies for repopulation of Blanding's turtles and the Illinois endangered barn owl. Cosley Zoo is accredited by the Association of Zoos and Aquariums.

Endangered Wolf Sanctuary

Accredited by the Association of Zoos and Aquariums, the Endangered Wolf Center is in Eureka, Missouri, on property owned by the Tyson Research Center, the environmental field station of Washington University in St. Louis. Its mission is to preserve and protect Mexican wolves, red wolves and other wild canid species through carefully managed breeding and reintroduction into the wild, as well as inspiring education programs. Ambassador animals at the sanctuary include wolves, foxes and turtles.

Howell Nature Center

In addition to summer camps, an adventure education center and recreation programs, Howell Nature Center in Livingston County, Michigan has a premier wildlife rehabilitation clinic, native Michigan wildlife in a teaching zoo and Wild Wonders Wildlife Park. Located on 230 acres of woods and wetlands, Howell Nature Center has ambassador animal programs—including off-site options—with raptors and other native animals. The nature center does not have resources to pursue AZA accreditation, but is permitted through the USDA, U.S. Fish and Wildlife Service and Michigan Department of Natural Resources.

Phillips Park Zoo

Located in Aurora, Illinois, Phillips Park Zoo houses more than 30 animal species, with a special focus on celebrating animals native to the Midwest, including elk, otters, bald eagles, owls and falcons. The zoo is housed in a city park and operated by the City of Aurora, which is pursuing accreditation for the facility.

Western North Carolina Nature Center

The Western North Carolina Nature Center is located in and managed by the City of Asheville, North Carolina and accredited by the Association of Zoos and Aquariums. The nature center is home to 60 species of wild and domestic animals that are representative of the Southern Appalachians, including a bobcat, corn snake, gray fox and two sibling coyotes that were orphaned and imprinted at two weeks old.

Wildlife Discovery Center

Located in Lake Forest, Illinois, the Wildlife Discovery Center (WDC) is a living museum and biological station at historic Elawa Farm, situated alongside the Middlefork Savanna, a 670-acre wildlife habitat. The WDC is managed by the Lake Forest Parks and Recreation Department and home to approximately 85 species of animals, including birds, reptiles and mammals. The Wildlife Discovery Center holds federal permits and licenses for its wild animals on display.

Willowbrook Wildlife Center

Run by the Forest Preserve District of DuPage County, Willowbrook Wildlife Center in Glen Ellyn, Illinois, is a native wildlife rehabilitation facility that provides care and medical treatment to an average of 10,000 injured and orphaned wild animals each year. The center currently has 40 resident animals in their care but have halted any future acquisitions to focus primarily on wildlife rehabilitation. Willowbrook Wildlife Center holds permits for its wildlife from the USDA and is in the process of building a new wildlife rehabilitation and viewing center.

OTHER FOREST PRESERVES

An effort was made for this report to also speak with other Illinois forest preserves districts to gauge their use of and programming with ambassador animals.

Lake County Forest Preserves has a small group of animals they use as teaching ambassadors, which includes two non-releasable raptors and a selection of native reptile and amphibians. Only one of these animals is on display to the public. They also have a small group of farm animals to pay homage to a gentleman farm that existed at Ryerson Woods.

The Forest Preserve District of Will County houses more than 30 native fish, reptile and amphibian species as ambassador animals at three visitor centers. They also

“inherited” several exotic rescues that are used for educational purposes—primarily educating the public on reasons not to purchase exotic herps as pets.

McHenry County Conservation District has fewer than a dozen live animals that are not on public display but are ambassador animals that participate in outreach programming to the public. Most of these animals—which includes native birds and reptiles—cannot be released into the wild and/or are captive reared.

Kendall County Forest Preserve District scaled back their live animal displays and programs primarily due to cost and staffing for proper care. They exhibit reptiles, amphibians and fish, and also a few small, domesticated mammals at their preschool, Natural Beginnings Early Learning Program.

Champaign County Forest Preserve District operates the Homer Lake Interpretive Center, which has a total of seven reptiles and amphibians in their animal program, the majority of which are on display and most are used in programming.

Ambassador Animals: Best Practices

The animals that live at Forest Preserves of Cook County nature centers are ambassador animals. The understanding and ethical considerations of what works best for wild animals that live in captivity has been undergoing rapid evolution over the last decade, leading to new best practices for care.

At zoos, aquariums, nature centers and other facilities around the country, ambassador animals help educate the public about the species and issues that affect the species or its native habitat. In some instances, ambassador animals are in direct contact with visitors as part of a program, or are brought to offsite locations for educational events. That is the case for some but not all the ambassador animals at the Forest Preserves.

The Conservation Education Committee of the Association of Zoos and Aquariums (AZA) notes in a position statement that it “supports the appropriate use of ambassador animals as an important and powerful educational tool that provides a variety of benefits to zoo and aquarium educators seeking to convey cognitive and affective (emotional) messages about conservation and wildlife.” The AZA has an ambassador animal scientific advisory group that provides guidance and training for these programs for its members.

The birds and mammals at Forest Preserves of Cook County nature centers are a subset of ambassador animals—they all are unable to survive without human care and come to the Forest Preserves from wildlife rehabilitators. These institutions and individuals take care of animals that have been injured, helping them return to health and, ideally, return to the wild.

In some instances, the harm done to an animal is not a physical injury, but imprinting. Birds and mammals have a pre-programmed drive to imprint onto their mothers during the early stages of their life. If a young animal is imprinted to humans instead, it depends on people for survival and socialization. Imprinted or habituated animals cannot be returned to the wild, as they lack the communication skills with other animals in their species and the behaviors they need to survive

and thrive. (Baby animals that are discovered in the wild are best left in the wild. If that is not an option, the animal should be brought to a wildlife rehabilitation facility where experienced staff can avoid imprinting and the animal has a better chance of being returned to the wild.)

The Forest Preserves' nature centers are among many organizations nationally that are connected to animal rehabilitators when an animal cannot return to the wild. These nature centers, colleges, rehab centers, museums and other institutions house and care for native wild animals for educational purposes.

Organizations such as these are an important resource for animal rehab agencies, serving as a home that provides food, enrichment, health care and other necessary care for animals that cannot live in the wild, but are capable of living a healthy life. It is important to note that these facilities cannot and should not take in more animals than they can safely support or that undermines their mission. That said, the safe havens provided by these institutions are a lifeline for many animals.

Pat Craig, the executive director of The Wild Animal Sanctuary, wrote to the Forest Preserves that “since there are literally tens of thousands of exotic and native animals in need of permanent placement within the United States, there are more animals than openings.” He notes that their facility must focus on “animals that are identified by animal welfare organizations as suffering or that are wards of the court,” and that they traditionally turn down as many animals as they agree to take each year.

“Many placeable, healthy, non-releasable animals are euthanized every year,” according to testimony to the Board of Commissioners at the Forest Preserves of Cook County by Dr. Jaime Abate, the veterinarian with Niles Animal Hospital and Bird Medical Center, who provides veterinarian care for the Forest Preserves ambassador animals. “Having to euthanize these beautiful animals that could live perfectly well in

captivity is heartbreaking for the rehabbers and veterinarians involved in their care.”

Evolving Thinking about Ambassador Animals

Through conversations with experts and peer agencies for this report, it is clear that people’s understanding of how to best care for wild, imprinted/habituated or injured animals in captivity has rapidly evolved over the last 10-20 years and continues to change. Dr. Lance Miller, the Chicago Zoological Society’s vice president of conservation science and animal welfare research, as well as previous chair of the Association of Zoos and Aquariums’ Animal Welfare Committee and an advisor for its Behavioral Scientific Advisory Group, noted that the field of animal welfare is always evolving as we gain a better understanding of animals through scientific advancements.

All the organizations interviewed for this report are making various changes and improvements to their ambassador animal programs based on the current science of animal care and behavior. In many or all cases, key ethical or practical schools of thought are informing these changes. These are informative and useful concepts to incorporate into modifications to the ambassador animal program at the Forest Preserves.

Five Domains

The American Zoological Society and others base their approach to animal well-being on a framework defined in academic research as the physical, mental and emotional health of an animal measured on a continuum. The dominant framework for animal welfare, employed internationally by zoos and the scientific community, is the Five Domains Model: (1) nutrition, (2) environment, (3) health, (4) behavior and (5) mental state. The first four domains constitute the animal’s various experiences, which make up the fifth domain, mental state (*Mellor 1*).

In a 2020 paper summarizing the 25-year history and evolution of the Five Domains Model, the authors write, “Situations where human–animal interactions may have negative welfare impacts include: when animals have had little or no prior human contact, when human presence adds to already threatening circumstances, when human actions are directly unpleasant, threatening and/or noxious, when humans’ prior actions are remembered as being aversive or

noxious and when the actions of bonded humans cause unintended harms.

“In contrast, situations where human–animal interactions may have positive welfare impacts include: when the companionable presence of humans provides company and feelings of safety; when humans provide preferred foods, tactile contacts and/or training reinforcements; when humans participate in enjoyable routine activities or in engaging variable activities; when the presence of familiar humans is calming in threatening circumstances; and when humans act to end periods of deprivation, inhibition or harm” (*Mellor 1*).

Animal First

In the animal-first paradigm, the focus shifts from what do humans want from the animal to what benefits the animal itself. Does the animal have choice? Does the animal have control? Can the animal choose to remain in the comfort of its habitat? Is the program to the animals’ benefit? If the answer is ‘yes’ to all these questions, that is an animal-first program.

Lincoln Park Zoo adopted an animal-first approach in the last five years, based on data-informed decision-making and putting animal welfare first. The Lincoln Park Zoo has committed to this approach for all its programs with ambassador animals and has phased out any program that does not meet these criteria. The guiding principles for this philosophy include:

- Each animal always has choice on whether to engage with the public at any given day or program.
- The animals remain in their primary habitats during a program with ambassador animals.
- Programs align with the animals’ natural behavior, history and routine (e.g., not taking nocturnal animals out during the day)
- Fewer encounters with animals include physically touching them and contact only happens in the context of care (rather than petting a goat, people now can brush it; rather than holding a chicken, people can now feed it approved food) (*Animal Care & Welfare*).

In her interview, Dr. Katherine A. Cronin, the director of the Animal Welfare Science Program at Lincoln Park Zoo, noted that similar shifts are being implemented at many other AZA-accredited institutions, but that many others

are continuing a focus on more traditional animal ambassador programs. Still, she added that among those that are not embracing a larger change, many are also making other modifications, such as improved enclosures and ensuring the animals always have a choice.

Animals as Educators

The Forest Preserves' animal exhibits and programs seek to help people better understand animals and to develop empathy for them. The AZA believes that providing people with the opportunity to see an animal up close and learn about its behavior helps “convey cognitive and affective (emotional) messages about conservation and wildlife” and “can provide the compelling experience necessary to attract and maintain personal connections with visitors of all motivations, thus preparing them for learning and reflection on their own relationships with nature” (AZA Conservation Education Committee).

Animal exhibits and programs at the Forest Preserves nature centers are popular with visitors of all ages and there are many anecdotal stories of how these animal encounters have inspired people. Nature center staff regularly receive letters from school children that attended a program, and typically most of the students say the animals they saw were their favorite part of the trip.

The academic research on if and how ambassador animals and related programs inspire visitors to care for nature is murky at best. A study in the *International Zoo Yearbook* compared an exhibit to an interpretive animal show in terms of the impact each had to teach the public about the issue of seals that become entangled in human debris. People who saw the animals live rather than the exhibit were more likely to report learning something new, to display a more positive attitude towards marine animals and their conservation, and reported both a higher willingness to change their future behavior to support marine conservation and a higher perception that their individual action could make a difference (Mellish 129).

Other studies do provide insights into the impact of specific aspects of animal encounters. One paper about chimpanzees in zoos found that when the animals were viewed with a human or in a human setting, respondents were more likely to consider

chimpanzees to be an appealing pet and to believe that chimpanzee populations were stable (Ross 1). Another found that when animals had free choice in a presentation, visitors had more empathy to the animal and also higher perception that the animal had positive welfare (Minarchek 38).

On the other hand, a 2021 paper published in the *Journal of Zoological and Botanical Gardens* used a systemic literature review to investigate visitor outcomes of one-to-one animal ambassador programs where a visitor physically handles or feeds an animal, concluding, “Currently, studies are so varied in species, methodology and rigor, that it is impossible to conclude whether a particular animal ambassador encounter has a positive or negative impact on either education or welfare. Without this evidence, the justification for using animal ambassador encounter within zoos remains questionable” (Spooner 61). The absence of data does not indicate that these programs don't work—studies that would track visitors for months or years after a visit to a nature center or zoo are expensive and complicated.

Individualization

Just as every human is an individual, each animal is unique. Species-specific, natural predilections are the clear and primary factors for any animal's behavior, needs, preferences, etc. However, within that range, any animal can be more or less curious, energetic, willing to be near humans, interested in certain foods, shy, and innumerable other factors. At the Endangered Wolf Sanctuary, one fennec fox was interested in and apparently enjoyed being an ambassador animal, while another did not. The sanctuary moved the second animal to a new facility, where the fox was more comfortable.

In the paper “The Visitor Effect on Zoo Animals: Implications and Opportunities for Zoo Animal Welfare” in the journal *Animals*, the authors examine factors that can cause visitors to have negative, neutral or positive impacts on the animals. “It is also important to note the contribution of individual differences within a species. An animal's response to humans will not only be influenced by life history characteristics of a species, but also by individual factors such as genetics (artificial and natural selection), temperament and past experience with humans,” they write. “Two individuals of the same

species housed in the same environment and provided with the same husbandry will not necessarily perceive the environment in the same way and, as a result, may have very different welfare outcomes” (Sherwen 11). For this reason, any specific behavior of an animal in captivity should be evaluated in full context. For example, research has shown that stereotypies (repetitive, unvarying and apparently functionless behavior patterns) “should always be taken seriously as a warning sign of potential suffering, but never used as the sole index of welfare” (Mason 57).

Although wild animals in human care will not have the same life experiences as wild animals living in their natural habitat, there is always more that can be done to ensure the best care possible, and continuously striving to improve the care of these animals’ lives is paramount. Willowbrook Wildlife Center and Howell Nature Center both emphasized the importance of understanding the individual nature of each animal and developing specific, individualized plans based on its unique behaviors and needs.

Ambassador Animal Operational Considerations

Through the research for this report, the Forest Preserves found ideas and examples of best practices for a number of facets of caring for ambassador animals.

In some instances, the Forest Preserves has been at the forefront of implementing these procedures. For others, modifications or additions to current operations are outlined in the Action Plan section, below.

Accreditation

There are many values to being accredited by a national organization dedicated to animal care and welfare, including staying abreast of developments in the field; access to trainings, workshops and network of peers; and helping to build public trust. Several organizations offer accreditation to organizations that house wild animals, most notably the Association of Zoos and Aquariums (See *Appendix 5*).

The AZA Accreditation Commission evaluates every member zoo or aquarium to make sure it meets AZA’s extensive standards for animal welfare, care and management, including living environments, social groupings, health, and nutrition. The Accreditation

Commission also evaluates the organization’s conservation and research involvement, education programs, safety policies and procedures, security, physical facilities, guest services, finances, governing authority, and support organization. Other organizations without a focus on protecting and breeding threatened and endangered species are options as well, including Humane Conservation, a certification program of American Humane.

Animal Acquisition

Placing a wild animal that has been deemed by an animal rehabilitator to be unable to live in the wild at a facility such as a Forest Preserves nature center is another aspect of ambassador animal care that has shifted in the last decade or more, according to Molly Gezella-Baranczyk, the executive director of the National Wildlife Rehabilitators Association. While having always ideally been done carefully, there is more awareness today that some individual animals may be ill-suited to being on display in front of people, or may have injuries or other factors that make their lives so difficult that euthanasia is a more humane option.

Like the Forest Preserves, all the agencies interviewed for this report said acquiring any new animal should be done thoughtfully and strategically and only after the organization has confirmed that it has the appropriate enclosure and resources, as well as trained staff to properly care for the animal. All the agencies have goals and missions that drive their acquisition plans and processes. Animals used in public programs should be evaluated for acquisition using a list of criteria to ensure they would be an appropriate fit, including whether they have the right temperament and ability to share their personal space with people.

Monitoring Health and Behavior

The ability to monitor an animal’s physical and emotional health—particularly their stress levels—continues to advance. With new understanding has come an evolution of how to provide optimal care, which can include nutrition and weight monitoring, daily wellness checks and ongoing veterinary exams, with any physical health issues addressed immediately. Animals live longer in captivity than in the wild, and animals with existing injuries can develop painful arthritis and other conditions over time, especially if they have limited movement. Many experts and peer agencies emphasized that animals are

good at hiding pain—an evolutionary behavior—and that addressing and medicating for pain, particularly birds with joint and wing injuries, is extremely important (*Lacy*).

Regularly assessing an animal's welfare is key to the success of providing captive animals with the best care possible. "Human-animal interactions in zoos may be acceptable in many circumstances and may be beneficial to both animal and human participants; however, they must be closely monitored through welfare tracking tools," concluded a paper in the journal *Animals* from 2020 (*Learmonth 1*).

All peer agencies interviewed had a process in place to assess and monitor their animals' welfare. The Chicago Zoological Society's Brookfield Zoo has an individual monitoring plan for each animal, including weekly weight checks and daily behavior checks. Howell Nature Center and the Wildlife Discovery Center use ethograms for monitoring their animals' welfare. In addition to daily monitoring, Lincoln Park Zoo has designed a "Welfare Discussion Tool," which is applied yearly to every animal at the zoo and looks at both the resources given to the animal (enrichment, outside space, enclosure, etc.) and how the animal utilizes those resources. Three people complete the tool for each animal, then discuss their findings and identify at least three action items that can improve the welfare of that animal.

Stress

Animals cannot tell us they are stressed, so it is imperative to look for behavior that indicates the animal is living in conditions that it finds stressful. Furthermore, animals in captivity can exhibit similar or the same type of behavioral and physiological responses to different stressors, and what may be a stressor to one individual member of species may not be stressful to another. That is why it is important to have an "understanding of species natural history and a fuller evaluation of all aspects of the captive setting when considering possible sources of stress in a given situation." (*Morgan 287*). Unwanted behavior—such as avoidance/hiding or excessive self-care—may be stress-related or could be a learned behavior in response to repetitive stimuli. For example, Dr. Abete notes that pacing is often in anticipation and eagerness for something, such as feeding time.

For these reasons, organizations caring for animals should assess behavior and health in full when

considering stress. The peer agencies and experts that were interviewed all specified that any indications of stress behavior in an individual should be addressed immediately. Options could include changes to the environment, routines or staffing procedures—it is important to modify the response to the expected source of the stress, the species and the specific animal.

Habitat and Enclosure

The design and construction of animal habitat and enclosures have significantly advanced over the years. Corncrib enclosures, such as the Forest Preserves has, were familiar to all of the experts interviewed. Although some of the peer organizations interviewed continue to use corncribs, they are no longer the standard in housing animals. For example, the Cascades Raptor Center designs all of their bird enclosures to be as large and tall as possible and include perches on a variety of levels to give the birds choice and views of their surroundings.

Research shows that animals benefit from more naturalistic habitats and that visitors also respond more positively to enclosures that mimic an animal's species-specific habitat. Studies show that people not only prefer this type of habitat to one that is non-naturalistic, but also consider them better for the welfare of the animal being housed (*Melfi 99*). Enclosures should be designed to meet the animal's particular need and give the animal ability to express natural movements and provide a secondary space outside of public view in case the animal does not want to be visible. Naturalistic enclosures, if designed properly, typically provide the animals they house with the environmental resources for them to satisfy some of their main biological requirements (*Fàbregas 363*).

Enrichment

Behavioral or environmental enrichment is a means "to enhance animal well-being by providing animals with sensory and motor stimulation, through structures and resources that facilitate the expression of species typical behaviors and promote psychological well-being through physical exercise, manipulative activities, and cognitive challenges according to species-specific characteristics," according to the National Research Council (*Garber 52*). There are five types of environmental enrichment: social, cognitive, physical/habitat, sensory and food/nutrition. Enrichment to provide the animal with a variety of new smells, textures and experiences is critical.

Current best practices are focused on a behavior-based approach, which uses environmental enrichment to promote naturalistic behaviors such as stalking, digging and foraging. This approach looks at the motivation for animals to perform those natural activities and what can be done to encourage those behaviors (*Fernandez 531*). Planning and scheduling enrichment in advance and using a monitoring process or application like Zoo Monitor (developed by Lincoln Park Zoo) can help determine if the enrichment activities are successfully eliciting those behaviors.

The importance of enrichment was stressed by all experts and peer agencies interviewed. Howell Nature Center and Willowbrook Wildlife Center have tools used by the staff to develop a plan around enrichment and developing good behaviors in the animals. It was recommended by several experts that enrichment activities be approved by a veterinarian to determine if the activity has any potential drawback to the animal's physical health.

Animal Training

Training animals in zoos and other facilities is used for husbandry procedures, physical exercise, management and enrichment. Training has also been shown to reduce stereotypies in captive wild animals, improve the human-animal relationship and create an environment that allows for behavioral choices (*Aspenström 5*). The most modern and progressive methods are positive re-enforcement trainings, which motivate an animal through rewards rather than with force or coercion. With rewards and consistent signals, animal caretakers can prepare animals for important routines like being weighed, preventative medical care, or being transported from their enclosure. Studies have shown that this type of training shows a significant decrease in “abnormal and stress-related behaviors and a significant rise in prosocial affiliative behaviors” (*Pomerantz 687*).

Most experts and peer agencies interviewed for this report emphasized the importance of positive reinforcement training, which should be conducted regularly to provide an ambassador animal with structure, consistency and relationship building with caretakers. Most peer agencies had established training programs for each individual animal and had standard procedures documented. Cosley Zoo, for example, has a

“shaping plan” that guides how the staff will help train an animal for new behavior.

Choice and Control

All of the peer organizations that were interviewed have incorporated choice and control into their animal care operations. The degree to which an animal can exercise control over their environment or a situation they are exposed to has a strong impact on their behavior and physiology. When an animal is largely in situations that are beyond its control, it comes to understand that its actions have no effect on its environment, what is known as “learned helplessness” (*Maier 1*). To alleviate the effects of this lack of control, animal caretakers have prioritized how to give animals the ability to make increased choices about certain aspects of their daily lives (*Schapiro 1*). If the animal makes the choice not to participate, they are not forced in any way.

At Willowbrook Wildlife Center, for example, animals have opportunities to decide if and how they can move outside of their enclosure, to participate in programs, to hide and get away from the public. Shedd Aquarium and Howell Nature Center have clear standards on what staff would do if an animal chose not to participate in a program, as well as how they communicate to the public about these options and why they are important.

Staffing and Procedures

All organizations interviewed discussed the importance of providing training and mentoring to staff charged with caring for animals and the importance of having a clearly defined “chain of command,” with most citing veterinarians as the final decision-maker in an animal's care, including if euthanasia should be considered. Several of the organizations were accredited or members of professional organizations and were able to take advantage of the training opportunities afforded to them through these associations. Organizations also discussed incorporating trained volunteers, interns and students into their animal care programs to provide additional staff support.

Coyote at River Trail Nature Center

This review was inspired by questions raised by a group of concerned residents regarding the welfare of the coyote living at River Trail Nature Center as an ambassador animal. This group is calling for the coyote to be removed from River Trail Nature Center and transferred to the Wildlife Animal Sanctuary, which has indicated it can transport to its facility in Colorado and house the coyote there.

To gauge the current health and wellbeing of the coyote at River Trail and to assess the best option(s) for its future, the Forest Preserves brought in third-party evaluators to augment assessments that have found the coyote to be healthy and well-cared for. This section includes an outline of the coyote's current living conditions and a summary of the assessments of conditions using Association of Zoos and Aquariums standards.

Coyote History and Care at River Trail Nature Center

In Tennessee in 2018, the coyote was taken as a pup in a litter in the wild that were mistaken for dog puppies and spent three weeks in an animal shelter for cats and dogs. The coyote was so young its eyes were not even open yet and spent three weeks in an animal shelter for cats and dogs. Not recognizing it was a coyote, the staff socialized it and trained it to be adopted like a pet. Once the situation was recognized, an animal rehabilitator in Tennessee worked with the coyote over the course of several weeks to see if it could be released. According to the official assessment of the rehabilitator and a veterinarian, the coyote has been imprinted. The rehabilitator searched for a home for the animal, and when River Trail Nature Center applied, it was considered a fit. The coyote arrived at the nature center in August 2018.

The River Trail Nature Center team that is responsible for the welfare of the coyote has been trained in its care and includes a staff member who was a licensed animal rehabilitator. Training and regular consultation to the staff is provided by the Forest Preserves' senior wildlife

biologist, who is a co-founder of the Urban Coyote Research Project, a published researcher and has more than 30 years' experience working with animals that live in the wild in Cook County. Regular medical care includes physical exams, bloodwork and collecting fecal samples.

The coyote's current enclosure at River Trail Nature Center is approximately 266 square feet, a size that meets or exceeds USDA regulations. Size standards for an enclosure of a coyote in captivity vary. Illinois does not have a size requirement. Like the USDA, Indiana doesn't have a size requirement but requires each animal to have the capacity for normal movements. Wisconsin's requirement is 144 square feet; Colorado requires a 150-square-foot enclosure; and Michigan requires an enclosure to be at least 10 foot by 8 foot, with a 6-foot-high fence.

The River Trail coyote enclosure is designed to meet the coyote's physical needs, provide for mental stimulation and give the animal the opportunity to engage in natural behaviors. There is space for running, jumping, digging and playing. The floor substrate is sand which allows for natural digging behavior. Features include an outdoor kennel that functions as the main sleeping space and a secondary kennel that allows the coyote to hide and retreat from public view. Other elements include two hollow logs, two tree stumps, two wooden shelves and a hammock. These allow the coyote to climb, gain a higher view of its surroundings and explore.

Daily care of the coyote by nature center staff begins with a visual health inspection assessing the coyote's temperament, physical appearance, condition of the enclosure and anything else pertinent to the animal's care. A staff member then enters and cleans the enclosure and provides fresh water in a 5-gallon container that is replaced throughout the day if it becomes soiled or as needed depending on the weather. During the day, staff provide a positive reinforcement training session and two feedings.

The coyote is weighed at least once a month, and the enclosure is disinfected and cleaned monthly depending

on the season. Medications to prevent heartworm and to repel fleas and ticks are given monthly in food. The enclosure is inspected and evaluated seasonally to determine if there are any changes or modifications to be made. Additional towels and straw bedding are provided in the winter when temperatures drop below freezing. In the summer, larger pools of water are provided during periods of excessive heat.

Annually, the coyote receives a visit from a veterinarian. This includes a physical examination, bloodwork, a fecal test for parasites, and an overall observation of the coyote's behavior. The coyote is also given a series of vaccinations as recommended by the veterinarian. The coyote's veterinarian prescribed medications (trazodone and gabapentin) to be administered strictly when the coyote might feel anxious, such as visiting the vet or expected loud noises like fireworks on the Fourth of July. These medications are the same that are commonly given to domestic dogs for the same purposes.

Assessment of the Coyote's Wellbeing

The veterinarian for the coyote, Dr. Jamie Abete, has provided testimony that the coyote has had excellent care and training since arriving at River Trail Nature Center. "The River Trail Nature Center's Coyote is in excellent health both mentally and physically. As a captive animal that cannot be released his quality of life at the nature center is exemplary," she said. In her medical reports, she has said that the coyote is healthy and happy.

In addition, the coyote's enclosure and care is assessed regularly by the USDA. A representative of the Illinois Department of Natural Resources, in response to a resident concerned about the coyote's care, conveyed that their conservation police officers have found that "the coyote is healthy, there was no witnessed 'inhumane treatment,' and that the pen is adequate" and that "moving wildlife (including this coyote) is not recommended by me, nor the department..." The Cook County Sheriff's Police Department was also called about alleged inhumane treatment. Investigators found these allegations to be unfounded and noted the coyote "appeared to be in excellent condition." (See *Appendix 8 for a copy of the Cook County Sheriff's Police Department report.*)

To ensure that the coyote is not only surviving, but thriving, the Forest Preserves brought in two independent veterinary experts for this report to observe the animal and its enclosure and care, and provide an assessment of their findings and any suggestions for improvement:

- Alisa E. Kubala is a doctor of veterinary medicine and a PhD candidate in conservation medicine. She works at the Veterinary Emergency Group in Chicago and has both local and international experience working with wild animals including gorillas, elephants and large carnivores.
- Edgar F. Garrett is a doctor of veterinary medicine, a clinician and a professor at the University of Illinois Veterinary Teacher Hospital in Urbana, Illinois. He specializes in large animals and practices, as well as provides training for staff on large animal husbandry.

Both Dr. Kubala and Dr. Garrett observed the coyote's behavior and interactions with visitors and staff over time. They reviewed its medical records and interviewed key caretakers at River Trail Nature Center. Both experts used the Association of Zoos and Aquariums' Large Canid Care Manual as the standard for their review, which includes guidance for housing, behavior, nutrition, veterinary care, record keeping and more (see *Appendix 6 for Dr. Kubala's report, and Appendix 7 for Dr. Garrett's report.*)

Consensus on Care and Wellbeing

Neither expert indicated that the coyote paces in an unnatural pattern or indicates stressful behavior. "I have no concerns about the mental status of the coyote," Dr. Garrett wrote. Both experts agreed that the care currently provided to the coyote meets AZA guidelines around nutrition, animal training, safety and containment, appropriate protection from hot and cold weather, and sufficient water, air quality, and natural light.

"In my opinion RTNC has provided good veterinary care, good nutrition, and good training for their ambassador coyote. It is also clear how much the coyote's keepers care for him and how comfortable the coyote is with them," Dr. Kubala wrote. Dr. Garrett summarized: "The coyote at the River Trail Nature Center is well adapted to his surroundings, is healthy and well cared for."

Enclosure

The two experts' opinions did diverge on other aspects of the coyote's current conditions. Dr. Kubala calls for the creation of "an adequate enclosure" for the coyote, writing "RTNC must improve with addition of much larger enclosure/environment including holding areas." The AZA Large Canid Care Manual's general housing guidelines for the size of an enclosure for the long-term holding of a large canid is 5,000 square feet, with two holding pens of 200 square feet each. It also recommends complex outdoor spaces that consider shape, topography, substrate, plantings and proximity to the public in the design (AZA *Canid 11*).

Dr. Garrett writes in his report that there are no absolute standards for the size of an enclosure for a captive coyote and that the AZA guideline of 5,000 square feet is "for two animals and animals that are not imprinted on people and thus in need of more space to move away from people to reduce stress." He says the current enclosure is adequate, and while he does write that there are advantages to increasing the enclosure's size and adding new structures, he says this expansion is not a necessity for the well-being of the coyote and not an urgent need.

Other experts have noted that other aspects of an enclosure are also key to an animal's wellbeing in addition to consideration of size. "Of central importance is ensuring that animals are able to use the space available to them. Quantity of space is generally less important for animal welfare than the complexity and usability of the space" noted a 2019 paper in the journal *Frontiers in Psychology* on developing a metric of usable space for zoo exhibits (*Browning 2*).

Two of the peer organizations we interviewed have enclosures for coyotes that were less than 5,000 square feet: Wildlife Discovery Center has a 1,350-square-foot enclosure for two imprinted, sibling coyotes, and the AZA-accredited Cosley Zoo has an enclosure of approximately 1,020 square feet for its solitary coyote.

Living with Other Coyotes

Dr. Kubala also calls for the coyote to live with another coyote (conspecifics), ideally a single female or less ideally a single male. "While free-ranging canids may live as singles, this is generally considered a temporary situation in short-lived free-ranging animals, while

veterinarians who manage these species in captivity advise they do not choose to be single for the entirety of their much longer life-spans (up to 15 years in some cases)," she writes. She cites examples of hand-reared coyote pups that were able to integrate with other members of their species despite being imprinted.

In his report, Dr. Garrett does not discuss or provide an opinion about the need for a companion coyote to live with the current resident coyote at River Trail Nature Center. When asked his thoughts in a subsequent interview, he said that introducing the coyote to one or more other coyotes could be beneficial but also could be stressful and in the end, not work out. He added that some coyotes live in packs, some are solitary.

A 2004 conservation action plan for canids explains that the basic social unit for coyotes is the adult, heterosexual pair, and that "other coyotes exist outside of the resident packs as transient or nomadic individuals" (*Sillero-Zubiri 84*). Over 22 years, the Urban Coyote Research Project has monitored coyotes with a radio collar to track their movements and habits. For more than two decades, more than a third of coyotes they have tracked—36 percent—have lived alone.

In addition, the individual characteristics of the coyote at River Trail Nature Center—including being imprinted to humans from soon after birth and its habituation of living among humans since—and its behavior and demeanor, seem to indicate that it is comfortable as a solitary coyote. "If an animal perceives humans as an enemy (predator or competition), this could lead to fear responses being frequently evoked and, as a result, poor welfare outcomes. However, if humans are perceived as a symbiont, this could potentially be a source of enrichment and produce positive welfare outcomes," according to a 2019 paper in the journal *Animals* (*Sherwen 4*).

Dr. Abete, the other veterinarian expert who has observed and examined the coyote at River Trail Nature Center, is concerned about having other members of its species introduced to this individual animal. She has testified, "This coyote has reached social maturity as an imprinted animal in captivity with his human caretakers being his surrogate conspecifics. He is ill-equipped to interact with other coyotes and would likely be a social outcast, which would jeopardize both his safety and his welfare. It would

be detrimental for this coyote’s health to be placed with other coyotes and taken away from his caretakers.”

Of the peer organizations we interviewed, four have coyotes in their care. Wildlife Discovery Center has two sibling coyotes. Western North Carolina Nature Center had two sibling coyotes until one died in 2021. Cosley Zoo, and Howell Nature Center each have one coyote. Western North Carolina Nature Center and Cosley Zoo are AZA accredited.

Limits of Habituation

In terms of care, Dr. Kubala wrote that River Trail Nature Center staff are not sufficiently discerning of the difference between the behaviors and needs of the coyote as a habituated wild animal compared to a domesticated canine. Because the wild nature of the coyote still exists at a genetic level—despite the animal being imprinted on humans as a pup—behaviors and drives (e.g. to hunt, explore, protect itself) should be taken into account in its care. She particularly noted that this misapprehension can impact the messaging to the public about the animal and its care.

Dr. Garrett wrote, “The staff at the Nature Center are very knowledgeable about the appropriate care of the coyote and attentive and responsive to his needs.” Dr. Kubala did also write, “It is also clear how much the coyote’s keepers care for him and how comfortable the coyote is with them.” Research has shown that human-animal interactions can provide positive welfare impacts, including enjoyable routine activities, the presence of familiar humans as a calming influence, and company and feelings of safety (*Mellor 1*).

Education, Ethics and Options

During interviews, experts on animal care introduced several other issues that can or should be considered in making decisions about the future of the coyote at River Trail Nature Center.

Dr. Chris Diehm, Professor of Philosophy at University of Wisconsin-Stevens Point, has served as the coordinator for the university’s Environmental Ethics program for more than 15 years. He noted that transporting an animal long distances, changing its existing environment and introducing it to other members of its species will all cause some—perhaps a significant—amount of stress. Because there is no way of knowing exactly how

stressful those factors will be for this individual coyote, he suggested that the Forest Preserves could use an ethical lens to weigh these unknown factors against what is known about its current situation and possible improvements.

Several interviewees noted that wild coyotes are often feared or misunderstood by members of the public, and consequently can be harmed directly (e.g. by coyote hunting contests) or indirectly (e.g. by feeding them, which leads to becoming “nuisance animals” that are killed because they do not avoid humans). Because of the prevalence of coyotes in our urban environment, Dr. Tom Meehan, the vice president of veterinary services for the Chicago Zoological Society, said that ambassador coyotes at the Forest Preserves can help prevent the deaths of many others in the wild by helping people learn to not fear the animals and to understand how to keep them safe.

Finally, if the Forest Preserves were to end its animal ambassador program for mammals, there would be the loss of placement options for a native animal that cannot live in the wild. The Wildlife Animal Sanctuary has indicated that it turns down as many animals as they agree to take every year and focuses on animals that are identified by animal welfare organizations as suffering or that are wards of the court. The coyote at River Trail Nature Center does not fall into either of those categories. If the coyote remains at its current location, the home that would be available at the Wildlife Animal Sanctuary can be taken by another animal that will be euthanized if not afforded this option.

To be clear, none of these factors would be consequential if the coyote’s care, health and wellbeing were demonstrably substandard while living at the River Trail Nature Center. However, assessments by the USDA, veterinarian staff, the Cook County Sheriff’s Police Department and AZA-guided experts all indicate that the current conditions for the coyote meet benchmark standards—including most AZA guidelines. With modifications or improvements incorporated as well to address information learned during the research for this report, these issues should be part of the decision-making process about moving the coyote.

Improvement Action Plan

In the process of researching leading peer agencies and national experts around ambassador animal welfare and practices, it is clear that the care that the Forest Preserves provides is in line with what is needed to ensure animals are safe and healthy. In many cases, Forest Preserves procedures and standards are among best practices in the field. However, there are also opportunities to improve, add or modify current work.

While some of these action steps can begin being implemented in the upcoming months, others will take more time (in some cases, because these changes are contingent on other program modifications). A starting point and/or expected time of completion is provided for each item. In many cases, the work being done does not have a final destination—the Forest Preserves has a commitment to continue to follow advancements and new opportunities in these areas.

Create individualized health and wellness plans for each ambassador animal.

Adopt an animal welfare assessment tool or process like Lincoln Park Zoo's free Zoo Monitor application or an ethogram to develop a health and wellness plan for each animal in the Forest Preserves' care. Individualized welfare indicators will be identified for each individual animal for physical and mental health—including any signs of pain, distress or suffering—for staff to effectively assess the animal during regular examinations. This work will begin in the third quarter of 2022.

The Forest Preserves will also invest in record-keeping software or an application to track the health and wellness of the animals in its care, including the notes on nutrition, weight, medical records and daily reports, which will facilitate greater ease and transparency in monitoring and if necessary addressing an animal's health and wellness.

Review and modify enclosures to meet best practices.

The ambassador animal enclosures at nature centers, while safe for the animal residents and consistent with applicable federal and state requirements, will be re-evaluated to meet best practices in the field. In some

instances, enclosures can be augmented to include a more natural environment, more locations where the animal can hide from the public, and/or more physical elements that provide enrichment. For example, Dr. Abate suggested installing a variety of different perches for birds, especially perches that are unstable/ that move, which allows birds to use different muscles. These changes will begin in 2023 and be informed by information garnered from peer agencies, academic research and leading organizations in care for wild animals in captivity.

Expand and deepen enrichment activities.

Forest Preserves' staff provide enrichment opportunities to the birds and mammals that are in its care, but typically do not have the time or capacity to provide daily activities or enrichment to animals like reptiles and amphibians. Improvements will include more regular enrichment, activities that encourage species-specific behavior, and activities specifically created for each individual animal. This could include the introduction of new objects for the animals to interact with, incorporating more naturalized features and materials, and self-guided enrichment. Expanded enrichment programming will begin the third quarter of 2022.

Adopt "Animal First" approach to public programs.

Through the twin lens of the individual nature of each animal and providing animals with choice and agency, the Forest Preserves will adopt an Animal First approach to its ambassador animals, for both onsite and offsite programming. Programming with ambassador animals will be re-evaluated by the Forest Preserves to eliminate or significantly reduce possible stress for each animal and allow them choice and control in their participation. For offsite locations, guidelines will ensure the individual animal's safety and comfort are paramount. The assessment will begin in 2022.

Modify the acquisition process to reflect changes to the program.

The Forest Preserves currently has acquisition guidelines and a process to follow when acquiring a new ambassador animal, but changes to the program as outlined in the action items in this report may impact

the types of animals that are added at each nature center and other changes. The Forest Preserves will temporarily halt the acquisition of new animals until evaluation of programs is completed and any necessary modifications to the acquisition process are made, expected in early 2023.

Focus the program's educational goals.

The Forest Preserves protects and cares for ambassador animals to teach about the wonder of the wild spaces of Cook County and to promote the protection of these native species and their habitats. These ideas should be central to how the animals are presented and explained to the public. Programming with the ambassador animals and interpretive signage onsite should emphasize these goals, implicitly and explicitly, and be consistent across each nature center. Plans will be prepared in the first half of 2023, followed by rolling implementation.

Review and formalize the ambassador animal manual and systems.

Formalize standards and policies for health, welfare, feeding and other aspects of animal care and wellness into a single manual that is clear, readily accessible and followed by all staff responsible for any aspect of ambassador animal care. These procedures will include but not be limited to wellness monitoring, welfare assessments, medical care and evaluation, diet and nutrition, enrichment, training (both staff and animal training programs), animal handling and future acquisition. Review will begin in 2022, with systems and official procedures in place in mid-2023.

Obtain the American Humane Conservation Certification.

The Forest Preserves will determine which membership organizations that address care for wild animals provide the best fit for the nature centers and ensure staff have the opportunity and encouragement to take advantage of trainings and other resources from these organizations. In addition, the Forest Preserves will pursue accreditation with the American Humane Conservation Certification, offered by American Humane. This certification is animal-centric and focused on the well-being of each individual animal. The standards and independent audit verify more than 25 factors, from appropriate activity levels and uses of space to record-keeping practices, from animal choice to environmental, behavioral and cognitive enrichment.

The process to achieve this certification will begin in the third quarter of 2022.

Establish sufficient staffing to support modifications to the Ambassador Animal Program.

Caring for the Forest Preserves' ambassador animals requires time, expertise and resources. The Conservation and Experiential Programming Department will re-evaluate staffing levels and training in light of the recommendations for changes in this report. That can include a dedicated animal care coordinator across the Forest Preserves and increased staff capacity and resources as necessary at each nature center for training, husbandry and continuing education opportunities. The staffing reorganization will be completed in 2023.

Conduct ongoing evaluation.

As documented in this report, the field of ambassador animal care and wellness practices is rapidly evolving and developing. The Forest Preserves should have procedures in place to continue to keep pace with the latest in scientific research and best practices to ensure its programs remain at the forefront of the field. In addition, while animals have long been a beloved part of nature center exhibits, it is less understood whether and how these programs are having the desired effect on visitors to learn about wildlife and to inspire empathy for animals and the natural world. Beginning in 2023, the Forest Preserves will conduct evaluation of the effectiveness of these exhibits and programs, particularly of which programs and messages best resonate with the public.

Action Steps for the Coyote at River Trail Nature Center

Care for the coyote at River Trail Nature Center will be impacted by the 10 action steps implemented by the Forest Preserves across the ambassador animal program at all nature centers, outlined above. Specific goals for the coyote's enclosure and care are planned, as well.

Enlarge and improve the coyote enclosure.

The Forest Preserves will build a larger enclosure for the coyote at River Trail Nature Center and add elements to the space that provide enrichment and a more naturalistic habitat. The current location can allow for

an enclosure of 2,000 to 2,500 square feet, which could house the existing enclosure as a holding area within this larger space to be used for veterinarian visits, welfare checks and other needs.

The AZA Large Canid Care Manual provides guidelines on designing elements within an enclosure, which are as important in many ways as the square footage itself. The new enclosure will include elements that provide enrichment to the coyote such as increased complexity for exploration, and more and larger spaces for the coyote to be away from people than it currently has. A more naturalistic environment in the new enclosure can include trees, grass, dirt and boulders, as well as elements that provide for tunneling and climbing, all of which provide enrichment opportunities and more opportunities to engage in natural behaviors.

The Forest Preserves will reference research on the impact of enclosures on large canids' well-being, reference materials such as AZA guidelines and peer-agency best practices to design the enclosure. Consultants from the field and/or design firm contractors should be involved as well. The new enclosure at River Trail Nature Center is planned to be ready for the coyote in 2022.

Enhance enrichment opportunities for the coyote.

The coyote currently receives regular enrichment activities daily. However, there is an opportunity to expand and deepen the types of activities. Staff will create an enrichment plan that includes naturalistic activities such as food puzzles and foraging and that takes advantage of the new features and elements inside an expanded enclosure. Staff will also update and standardize the procedures for welfare and behavior monitoring and veterinarian check-ups and care. Experts and peer agencies interviewed for this report, including Willowbrook Wildlife Center and Howell Nature Center, have indicated they can provide information on their enrichment to augment literature on the subject. This expanded enrichment plan should be in place in 2022.

Improve interpretation and messaging about the coyote.

Staff can be clearer and more precise in their own conception of the coyote's nature, as well as in the messaging to the public, about the coyote as a habituated wild animal (as opposed to a domesticated animal). The Forest Preserves will ensure all staff that

work with the coyote are cognizant of the underlying natural behaviors and needs of the animal, in addition to its behaviors and needs as an individual animal that has been imprinted and habituated to be with humans.

In 2022, the Forest Preserves will create messaging about the coyote that consistently informs presentations, programs and other communications with visitors to River Trail Nature Center. This will help ensure that members of the public have accurate and clear information about why the coyote lives at River Trail Nature Center and its activities, behavior and its care. These core messages will also prioritize educational information to the public on coyotes living in the wild in Cook County, their role in our local ecosystems, and why and how humans and can best co-exist, particularly the importance of not engaging with a wild coyote for its safety and health.

Establish a more robust monitoring protocol for the coyote's behavior.

Every expert who has observed the coyote in person over some period of time and who has had access to the coyote's medical records has agreed that it is well-cared for and does not exhibit stress-induced or other problematic behaviors. These conclusions mirror what has been observed by River Trail Nature Center staff who monitor the coyote on a daily basis.

However, with suggested changes such as a new enclosure and expanded enrichment activities, in the first half of 2023, the Forest Preserves will expand its methods of monitoring the coyote and systematize how behavior is interpreted and how records are kept with a behavior monitoring tool such as Zoo Monitor or an ethogram. A camera can be added to the coyote's enclosure for observation when members of the public and staff are not present, with a standard protocol in place for regular review of the footage. Other options also include community science opportunities for volunteers to support monitoring and analysis.

Review

This review was developed by a working group of staff from the Forest Preserves of Cook County: Nina Baki, Ryan DePauw, Melina Frezados, Cathy Geraghty, Arthur Matthews, Lydia Uhlir, Jacqui Ulrich Michelle Uting and Carl Vogel, with assistance from the Forest Preserves' Resource Management Department.

Appendices

Appendix 1

Glossary of Terms

Accreditation-the external recognition of adherence to a set of standards to perform an activity or hold a certain status.

Animal welfare-How animals experience their quality of life. Animal welfare includes animal care, but also takes an animal's mental and emotional well-being into consideration. Animal welfare guiding principles include the 'Five Freedoms' as defined by the World Organization for Animal Health. The five freedoms describe society's expectations for the conditions animals should experience when under human control, namely:

- Freedom from hunger, malnutrition and thirst
- Freedom from fear and distress
- Freedom from heat stress or physical discomfort
- Freedom from pain, injury, and disease
- Freedom to express normal patterns of behavior

Animal care-What humans can provide to the animals including the management and treatment that an animal receives, the environment that is provided for the animal, and factors such as diet, attention and enrichment.

Animal First-An approach that asks if an animal ambassador has choice and control? Can the animal remain in the comfort of its habitat if it chooses? Is a program to the animals' benefit? If the answer is 'yes' to all these questions, that is an animal first program.

Animal Choice-Offering animals choice, and the ability to direct their own actions (also known as agency). For example, offering an animal a choice on whether to participate in a public program or ensuring that animals have somewhere to hide or be off view if they choose. Animal choice is a component of the "Animal First" approach.

Enrichment-Often referred to as environmental enrichment or behavioral enrichment, these activities provide species-appropriate challenges, opportunities and stimulation that promote a range of normal behaviors that animals find rewarding.

Habituated- When an animal becomes tame or habituated to humans, after a period of repeated exposure.

Imprinting- A critical period of time early in an animal's life when it forms attachments and develops a concept of its own identity. Birds visually imprint upon their parents when they hatch and during the first critical period of development, and a comparable form of learning can occur in the young of many mammals, particularly those with a prolonged juvenile period, such as coyote pups and white-tailed deer fawns.

Positive-reinforcement training-The introduction of a desirable outcome to an animal by a trainer after a behavior is performed, which reinforces that behavior.

Wildlife rehabilitation-The process of providing aid to injured, orphaned, displaced or distressed wild animals in such a way that they may survive when released back to their native habitats.

Appendix 2

Interviews

- Lance J. Miller, Ph.D., Vice President of Conservation Science and Animal Welfare Research, Chicago Zoological Society
- Katherine A. Cronin, Ph.D., Director, Animal Welfare Science Program, Lincoln Park Zoo
- Charles Jacobsma, Animal Ambassador Lead and Senior Trainer and Erica Hornbrook Senior Director of Animal Care and Sustainability, Shedd Aquarium
- Shelli Dubay, Professor of Wildlife in the College of Natural Resources, Kendra Liddicoat, Associate Professor of Environmental Education, and Chris Diehm, Professor, Environmental Ethics and Animal ethics Instructor, University of Wisconsin-Stevens Point
- Molly Gezella-Baranczyk, Executive Director, National Wildlife Rehabilitators Association
- Alicia Biewer, Resident Wildlife Specialist, and Sarah Reich, DVM, Head Veterinarian and Manager of Rehabilitation and Research, Willowbrook Wildlife Center
- Tami Romejko, Education and Guest Experiences Manager, and Angie Musselman, Animal Curator, Cosely Zoo
- Sarah Holaday, Animal Curator, Endangered Wolf Center
- Robert Carmichael, Curator/Director, Wildlife Discovery Center
- Kit Lacy, Bird Curator, Cascades Raptor Center
- Dan Powell, Zoo Manager, Phillips Park Zoo
- Erin Oldread, Animal Curator and Registrar, Western North Carolina Nature Center
- Laura Butler, Director of Wildlife and Education, Howell Nature Center

Appendix 3

Bibliography of Research and Other Resources

Much has been written about captive animal care and science and the Review group took advantage of many of these resources in the development of this report.

“Animal Ambassador Policy.” Association of Zoos and Aquariums. aza.org. n.d. Web. June 2011.

“Animal Care & Welfare.” *Lincoln Park Zoo*, 8 July 2020, <https://www.lpzoo.org/animals-gardens/animal-welfare-care/>.

AZA Conservation Education Committee. *Ambassador Animal Position Statement*. Maryland: Silver Spring, 2015.

Aspenström, Sarah. “Zoo Animal Training – Implications for the Human-Animal Relationship, Control and Motivation.” *Swedish University of Agricultural Sciences*, 2018.

AZA Canid Taxon Advisory Group 2012. *Large Canid (Canidae) Care Manual*. Association of Zoos and Aquariums, Silver Spring, MD.

Browning, Heather, and Terry L. Maple. “Developing a Metric of Usable Space for Zoo Exhibits.” *Frontiers in Psychology*, vol. 10, 2019.

Fernandez, Eduardo J., and Allison L. Martin. “Animal Training, Environmental Enrichment, and Animal Welfare: A History of Behavior Analysis in Zoos.” *Journal of Zoological and Botanical Gardens*, vol. 2, no. 4, 2021, pp. 531–543.

Fàbregas, María C., et al. “Do Naturalistic Enclosures Provide Suitable Environments for Zoo Animals?” *Zoo Biology*, vol. 31, no. 3, 2011, pp. 362–373.

Garber, Janet C., et al. *Guide for the Care and Use of Laboratory Animals*. National Academy Press, 2011.

Huijser, Marcel, et al. 2015, *Construction Guidelines for Wildlife Fencing and Associated Escape and Lateral Access Control Measures*, [https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25\(84\)_FR.pdf](https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25(84)_FR.pdf).

Lacy, Kit. “Selection Process for Non–Releasable Birds: The First Step in Bird Welfare.” *Wildlife Rehabilitation Bulletin*, vol. 36, no. 1, 2021, pp. 36–40.

Learmonth, Mark James. “Human–Animal Interactions in Zoos: What Can Compassionate Conservation, Conservation Welfare and Duty of Care Tell Us about the Ethics of Interacting, and Avoiding Unintended Consequences?” *Animals*, vol. 10, no. 11, 2020.

Maier, Steven F. “Learned Helplessness and Animal Models of Depression.” *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, vol. 8, no. 3, 1984, pp. 435–446.

Mason, G. J., & Latham, N. R. (2004). Can’t stop, won’t stop: is stereotypy a reliable animal welfare indicator? *Animal Welfare*, 13(Suppl), pp. 57–69.

Melfi, V.A., et al. "A Preliminary Assessment of How Zoo Visitors Evaluate Animal Welfare According to Enclosure Style and the Expression of Behavior." *Anthrozoös*, vol. 17, no. 2, 2004, pp. 98–108.

Mellish, S., et al. "Marine Wildlife Entanglement and the Seal the Loop Initiative: A Comparison of Two Free-Choice Learning Approaches on Visitor Knowledge, Attitudes and Conservation Behaviour." *International Zoo Yearbook*, vol. 50, no. 1, 2016, pp. 129–154.

Mellor, David J., et al. "The 2020 Five Domains Model: Including Human–Animal Interactions in Assessments of Animal Welfare." *Animals*, vol. 10, no. 10, 2020.

Minarchek, Matthew J., et al. "The Impact of Interpretive Messaging and Animal Handling on Visitors' Perceptions of Animal Welfare and Empathic Reactions." *Journal of Interpretation Research*, vol. 26, no. 1, 2021, pp. 24–42.

Morgan, Kathleen N., and Chris T. Tromborg. "Sources of Stress in Captivity." *Applied Animal Behaviour Science*, vol. 102, no. 3-4, 2007, pp. 262–302.

Pomerantz, Ori, and Joseph Terkel. "Effects of Positive Reinforcement Training Techniques on the Psychological Welfare of Zoo-Housed Chimpanzees (*Pan Troglodytes*)." *American Journal of Primatology*, vol. 71, no. 8, 2009, pp. 687–695.

Ross, Stephen R., et al. "Specific Image Characteristics Influence Attitudes about Chimpanzee Conservation and Use as Pets." *PLoS ONE*, vol. 6, no. 7, 2011.

Schapiro, Steven J., and Susan P. Lambeth. "Control, Choice, and Assessments of the Value of Behavioral Management to Nonhuman Primates in Captivity." *Journal of Applied Animal Welfare Science*, vol. 10, no. 1, 2007, pp. 39–47.

Schultz, Jeffrey T., and Julie K. Young. "Enclosure Utilization and Enrichment Structure Preferences of Captive Coyotes." *Journal of Zoo Biology*, vol. 2, no. 1, 2019.

Sherwen, Sally L., and Paul H. Hemsworth. "The Visitor Effect on Zoo Animals: Implications and Opportunities for Zoo Animal Welfare." *Animals*, vol. 9, no. 6, 2019.

Sillero, Claudio-Zubiri, et al. "Canids: Foxes, Wolves, Jackals and Dogs. Status Survey and Conservation Action Plan." IUCN, Gland, Switzerland and Cambridge, UK, 2004.

Spooner, Sarah L., et al. "Conservation Education: Are Zoo Animals Effective Ambassadors and Is There Any Cost to Their Welfare?" *Journal of Zoological and Botanical Gardens*, vol. 2, no. 1, 2021, pp. 41–65.

United States Department of Agriculture. "Animal Welfare Act and Animal Welfare Regulations." Animal and Plant Health Inspection Service, 2022.

Appendix 4

Questions to Benchmark Agencies

The following questions were covered during the interviews:

Animal Care & Wellness

- What kinds of animals (mammals, fish, reptiles, amphibians, birds) do you have at your facility and approximately how many animals are in your care?
- How do you monitor for health and wellbeing of the animals in your care?
- How do you monitor for stress or determine if an animal is experiencing stress? What do you do to lessen the stress of the animals in your care?
- Do you have a vet on staff? If you do not, how do you administer veterinary care?
- How often do you evaluate or make new investments in animal infrastructure?

Animal Training & Enrichment

- Can you provide some examples of the types of enrichment activities you provide to the animals in your care? How and from where are you getting ideas for physical and mental enrichment?
- What type of training do you do with your animals?
- Do you have a training program for each of your animals?
- Are there specific staff assigned to each animal?
- How do you know your animals are thriving?

Standards, Policies & Staff training

- Do you have an animal acquisition policy or process? Would you be able to share this with us?
- Do you have any animal care guidelines that you'd be willing to share with us?
- What certifications/licenses does your animal care staff have? What type of animal care/animal program training does your staff receive and how often? Are there certificates or licenses that staff must maintain?
- The Forest Preserves of Cook County abides by USDA standards and is certified to exhibit animals. What standards and/or certifications does your facility maintain? Have you adopted any policies regarding the animals or animal programming in your care?

Animal Programming

- Do your animals participate in public programs? Onsite and offsite? How do you determine whether to incorporate a live animal into a public program either on or offsite?
- Do you provide your animals choice when it comes to programs or interacting with staff?
- What types of educational programs do you offer that incorporate your live animals?
- Do you use signage and interpretation for your animal exhibits and/or public programs? What key messages are you trying to convey through your interpretation or signage? Do you have any examples you could share with us?

- What are the goals for your animal program? How many years have you had your animal program?
 - How are these animals helping you meet your mission?
 - Is there anyone else you would suggest we talk to regarding animal ambassador programs and efforts? (academic, researcher, practitioner)?
-

Appendix 5

Professional and Accrediting Organizations

For the animal ambassador field, a number of national and international organizations provide guidance, expertise and in some instances accreditation certification to local institutions that have wild animals in captivity.

Association of Zoos and Aquariums

The Association of Zoos and Aquariums is considered the “gold standard” of zoo membership organizations: Less than 10 percent of the 2,800 wildlife exhibitors licensed by the United States Department of Agriculture under the Animal Welfare Act meet the more comprehensive standards of AZA accreditation. AZA Animal Care Manuals are developed by teams of animal care professionals at various zoos and aquariums to provide recommendations based in the latest science, practice and technology of animal management, in some cases include the conservation of endangered species or “Species Survival Plan” programs and standards for care of breeding animals.

International Wildlife Rehabilitation Council (IWRC)

Founded in 1972, the IWRC provides evidence-based education and resources to move the field of wildlife rehabilitation forward; to promote wildlife conservation and welfare; and to mitigate human-wildlife conflicts worldwide, through better understanding of wild animal ecology, behavior, and welfare. The organization offers classroom and online training, holds an annual international symposium and published the peer-reviewed *Journal of Wildlife Rehabilitation*.

American Humane

American Humane is the first national humane organization in America and the world’s largest certifier of the welfare and humane treatment of animals in working and other environments. In 2016, American Humane launched a certification program dedicated solely to the welfare of animals in zoological institutions, focused on the humane treatment of animals in human care. American Humane’s Humane Certified program has 65 certified facilities, including one nature center. Brookfield Zoo, the Pittsburgh Zoo and Aquarium and the Denver Zoo are among the many Humane Certified zoos and aquariums in the United States.

International Association of Avian Trainers and Educators (IAATE)

The International Association of Avian Trainers and Educators is an organization for individuals who are active in the field of avian training and who are involved in environmental education programs. IAATE was founded to foster communication, professionalism, and cooperation among those individuals who serve avian science through training, public display, research, husbandry, conservation, and education.

Appendix 6

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

Date: June 6th, 2022

From:

Alisa E. Kubala DVM, MVS (Conservation Medicine), MRCVS
PhD Candidate (Conservation Medicine)

[REDACTED]

To:

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CC :

Mr. Scott Britton
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Dear Ms. Ulrich,

The following is a written review of the Forest Preserve of Cook County's (FPCC) River Trail Nature Center (RTNC) Coyote Animal Ambassador processes and procedures. This review is based on on-site reviews conducted over two afternoons including interviews of staff interacting with the coyote, review of record keeping, health records, enrichment and health and wellness management using the Large Canid Animal Care Manual (ACM) of the American Association of Zoos and Aquariums (AZA) as a guide.

As part of the review process, consideration must first be given to the history of the individual coyote being used in the program. The individual at RTNC is a habituated, wild coyote. It is important to point out that he is *not* a domesticated canine. This clarification is important because it has affected the care he is receiving, which, while acceptable for a domesticated canine (with the exception of the lack of exercise), is not acceptable for a wild coyote. While making observations at RTNC over two afternoons, multiple members of the public inquired about his small enclosure. In response, keepers made statements such as "because he is habituated, he sees people as his family," "he cannot hunt," "he sees his enclosure as his home and he does not feel safe outside of it so we give him mental exercise instead of physical exercise". I will explain below why these statements are incorrect and should not be used to direct the care of this wild coyote or be taught to the public of cook county.

In simplified terms, habituation is *experiential*, domestication is *genetic*. Habituation is defined as "the diminishing of a physiological or emotional response to a frequently repeated stimulus". For this coyote, it means *only* that as a result of being hand-reared by humans, he has lost his fear of humans. Therefore, he can never be released into the wild because he will not fear approach and could be injured or killed, or he could injure a human. Habituation does *not* mean *anything* beyond this, and certainly does not in any way affect what he is (i.e., his genes). It is very important to not confuse habituation with domestication, which is a genetic process.

Domesticated dogs who live in houses and see humans as their family are the result of 10,000 years of selective breeding on the part of humans to bring forth recessive genes which make them express these behaviors. The coyote at RTNC, on the other hand, is of a wild genotype and must be treated as such. He is a social animal (single situations are generally transient, not life-long), he sees coyotes as his conspecifics (family), he has hunting instincts and is naturally cursorial, and he must be allowed to express these and all of his other natural behaviors, which are the result of his wild genes, while he is living in captivity.

Natural, wild genotype behaviors which were observed during my visits included his natural neophobia, expressed as fear of/aggression towards new people (snarling and growling when I approached), his strong prey drive when he saw children running by his enclosure and his food aggression towards his keeper. The tendency of his keeper was to "play-down" the natural wild behaviors of the coyote. When the coyote showed aggression toward me as a new human near his enclosure, his keeper advised that "he just needs some time and prefers certain types of people". When the coyote showed a strong prey drive his keeper suggested that if he caught a child he would just lick and play with him/her, and when the coyote showed sudden food aggression towards his keeper during a training session at which he was otherwise calm, his keeper referred to this as his "weird Jeckyl and Hyde" moments. This confusion between habituated-wild and domesticated has led to keepers and volunteers being severely injured in sanctuaries where I have worked with much larger animals. It is easy to be lulled into the feeling that one is working with a domesticated dog, cat, primate or other wild animal when they are habituated and in many ways behaving and receiving training as a domesticated pet would, and then be suddenly surprised when they express their natural, wild behaviors.

Appendix 6 (Continued)

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

It is also important to address the social nature of canids. While free-ranging canids may live as singles, this is generally considered a temporary situation in short-lived free-ranging animals, while veterinarians who manage these species in captivity advise they do not choose to be single for the entirety of their much longer life-spans (up to 15 years in some cases). I have worked in sanctuaries throughout Africa with many species of habituated (and sterilized) wildlife hand-raised by humans, including primates and carnivores, which were able to be integrated into social situations and thrive. In some cases, sterilization improved social integration. While I have not worked specifically with coyotes in a sanctuary setting, a cursory online review of coyote sanctuaries in the US reveals the same is true of coyotes, including many neutered males. See the following pages for examples of hand-reared coyote pups, including neutered males, living with their conspecifics today:

<https://wildspiritwolfsanctuary.org/rescues/coyotes/jasa/>
<https://wildspiritwolfsanctuary.org/rescues/coyotes/maine/>
<https://projectcoyote.org/adventures-young-coyote-pup/>
<https://safehavenwildlife.com/animals/marabelle/>
<https://yellowriverwildlifesanctuary.com/northeastern-coyote/>

I am very grateful to RTNC for initiating this review as it shows a sincere good will to provide the best care for their ambassador coyote. In my opinion RTNC has provided good veterinary care, good nutrition, and good training for their ambassador coyote. It is also clear how much the coyote's keepers care for him and how comfortable the coyote is with them. It is my sincere hope that after this review, the county will provide an adequate enclosure and conspecific(s) for their ambassador coyote in order that he live a life suitable to a wild coyote and in order that the Cook County public learn how to care properly for such a special wild animal.

The following is a summary of AZA guidelines which pertain to the keeping of coyotes in captivity and where RTNC should improve in order to meet these guidelines. They are arranged in chapter format similar to that of the guidelines themselves. Statements in bold indicate AZA accreditation standards.

GENERAL INFORMATION

- 1) ***The institution must comply with all relevant local, state, and federal wildlife laws – AZA criteria have been met**
- 2) Natural history and behavioral repertoire (p. 6):
 - a) The coyote may live **in pairs, in small generational packs or transiently as singles**. Short-term groupings of large canids in the wild that are outside of the typical "territorial alpha pair/pack" paradigm are often seen, but appear to be temporary situations; a reflection of the affiliative nature of these species.
 - b) Large canids are **cursorial animals**. Some species can travel long distances (>16km/10 mi) on a daily basis, or disperse over longer distances (>805km/500m) during seasonal movements
 - c) Large canids are defined as species in the family Canidae that weigh over 22lb (10kg) as adults

CHAPTER 1. AMBIENT ENVIRONMENT

- 1) Temperature and Humidity (p. 8)
 - a) Cold Weather – **AZA criteria have been met**
 - i) ***The animal collection must be protected from weather detrimental to their health**
 - ii) The coyote tolerates cold weather, but should be provided with a dry den structure, with dry bedding such as straw for shelter from rainy or windy conditions. They do not require supplemental heating in their dens, and do not generally require specific access to an enclosed, climate-controlled environment.
 - b) Hot Weather – **AZA criteria have been met**
 - i) Large canids adapt effectively to high environmental temperatures if they have the opportunity to rest in shaded areas. Sufficient shade should be provided. Consider underground dens, water features.
 - c) Humidity – **RTNC must improve**
 - i) Canids cool primarily through panting, which is more effective when humidity is low so animals should be monitored closely when temperature and humidity reach extreme highs. An outdoor enclosure with a variety of microclimates will allow individuals to choose the most comfortable local environment within their enclosures.
- 2) Light (p. 9) – **AZA criteria have been met**
 - a) For coyotes...it is generally recommended that large canids be kept under natural light with a natural diurnal cycle; this is best accomplished by housing them in outdoor enclosures.
- 3) Water and Air Quality (p. 9) – **AZA criteria have been met**
 - a) As the primary enclosures provided to large canids are typically outdoor areas with constant fresh air, normal air quality considerations are generally not applicable. Veterinary or temporary husbandry holding buildings should have at least 15-20 fresh air changes per hour, and sufficient ventilation to allow wet surfaces to dry quickly
- 4) Sound and Vibration (p. 10) – **RTNC must improve**
 - a) Large enclosures and multiple hiding places within enclosures provide large canids with some opportunities to escape or cope with any unexpected loud noises. Features such as plantings and hedgerows inside or outside of an enclosure may also help muffle undesirable noises. Excessive sound stimuli can result in behavioral and physiological responses in animals and in extreme cases can be a contributing factor to immunosuppression, intestinal problems, and other veterinary health disorders relating to glucocorticoid responses.

Appendix 6 (Continued)

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

CHAPTER 2. HABITAT DESIGN AND CONTAINMENT

***All animal enclosures (exhibits, holding areas, hospital and quarantine/isolation) must be of a size and complexity sufficient to provide for the animal's physical well-being; and exhibit enclosures must include provisions for the behavioral enrichment of the animals.**

- 1) Space and Complexity – **RTNC must improve**
 - a) Careful consideration should be given to exhibit design so that all areas meet the physical, social, behavioral and psychological needs of the species. ****Animals should be displayed in exhibits replicating their wild habitat and in numbers sufficient to meet their social and behavioral needs. Display of single specimens should be avoided unless biologically correct for the species involved.***
 - b) Enclosure Size – **RTNC must improve**
 - i) Large canids should be provided with large, complex outdoor spaces. Enclosure shape, topography, substrate, plantings, and proximity to the public should all be considered in the design process. A large and varied enclosure will provide greater opportunity for canids to express their full range of natural species-appropriate behaviors, and eliminate the associated stress and unnatural behaviors associated with housing in low quality environments.
 - ii) The size of a primary enclosure for the long-term holding of a large canid should be at least 465m² (5000ft²) with 2 holding/shift pens of 19m² (200ft²) each. Canids kept in undersized areas may show diminished well-being as evidenced by pacing, aggression, nervousness, poor reproduction, and poor care of offspring.
 - iii) Providing minimal safe distances for individuals to move within social groups, as well as around humans entering enclosures with the animals should be carefully considered for these social but competitively aggressive predatory species.
 - iv) The shape of the enclosure is an important factor. Round or oval is best. Avoid tight corners.
 - v) Multiple visual barriers will decrease the stress associated with proximity to an aggressive competitor.
 - c) Enclosure Design – **RTNC must improve**
 - i) Large canids are cursorial animals, and should be provided with "flat, smooth (run-able) ground" so that they can walk, trot or run. Earthen berms or long slopes are desirable topographical features. Enclosures should not be barren. Many plants, furniture of varying sizes, and a variety of walk-able surfaces are highly recommended. Enclosures should be furnished with hollow logs, fallen trees, trees, bushes, artificial den boxes, etc.
 - ii) Large canids should be housed on natural substrates such as grass, dirt, sand or forest litter.
 - iii) Enclosures should be large enough and contain sufficient visual barriers to provide the occupants with a degree of privacy and ability to avoid the public, staff, and each other when desired. When large canids do not have sufficient visual privacy or feeling of security, they are more likely to show stereotypic abnormal behavior including pacing, spinning or twirling, excessive self-grooming as well as other abnormal or inappropriate behaviors and conditions such as increased agonistic interactions, diarrhea, hair loss, decreased appetite, weight loss, etc. Public viewing access should be limited to no more than 50% of the circumference.
 - iv) Animals should be provided with options for choosing to hide or to spot danger coming from a distance. They seek out opportunities for long view of their surroundings
 - v) Care should be taken to avoid tight corners (<90°) because large canids climb or jump or trap subordinates in tight corners
 - d) Enclosure Cleaning – **AZA criteria have been met**
 - i) Removal of fecal material from natural substrate should happen daily
 - ii) Food containers should be cleaned and disinfected daily
 - iii) Hard surface holding areas should be cleaned daily and disinfected weekly
 - e) Holding Areas – **RTNC must improve**
 - i) An ideal holding facility consists of a primary outdoor enclosure with an adjacent secondary enclosure and three shift pens (one indoors) adjacent to the primary enclosure
 - ii) Holding pens should be easily accessible from the main enclosure and animals should be made familiar with them through feeding or continuous access.
- 2) Safety and Containment (p. 14) – **AZA criteria have been met**

***Animals housed in free-ranging environments should be carefully selected, monitored and treated humanely so that the safety of these animals and persons viewing them is ensured**

***All animal exhibits and holding areas must be secured to prevent unintentional animal egress.**

***Exhibits in which visiting public may have contact with animals must have a guardrail/barrier that separates the two.**

 - a) Pests and Predators
 - i) The containment features described in this section should deter entry into the enclosures by feral dogs and cats, skunks, raccoons, bobcats, coyotes, pumas, and foxes.
 - b) The containment of large canids in an enclosure should have a dig barrier, a perimeter wall or a moat, and a climbing barrier if walls can be climbed. A double-door enclosure access system leading to all areas containing large canids his highly desirable and a secondary perimeter fence is strongly recommended to surround all holdings of large canids.
 - i) Dig barrier: 90cm (3ft) wide section of chain link fencing laced to base of vertical fencing with hog rings, at 90° angle to vertical fence and buried 15-30cm (6-12in) below ground.
 - ii) Mesh walls: vertical height of at least 2.5m (8.2ft) plus a section of 1m (39in) overhanging climb barrier extending into the enclosure at 45° angle
 - iii) Solid walls: not less than 2.5m (8.2ft)
 - iv) Moats: horizontal jumping distance of at least 5.5m (18ft)
 - v) Other types of containment: metal bars spaced closer than 5cm (2in) apart
 - vi) Small holding pens or shift pens: 46.5cm (500ft) of galvanized chain-link mesh should be buried under dirt floor holding pens
 - vii) Doors: see AZA manual p. 15 for details
 - viii) Secondary perimeter fencing: should be 2.5m (8ft) high

Appendix 6 (Continued)

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

- c) Safety
 - i) Maintenance checks on perimeter fence should be part of the keeper's daily routine
 - ii) ***All emergency safety procedures must be clearly written, provided to staff and volunteers and readily available to reference. Four basic types of emergencies fire, weather/environment, injury to staff or visitor, animal escape.**
 - iii) ***Security personnel, whether staff of the institution, or a provided and/or contracted service, must be trained to handle all emergencies in full accordance with the policies and procedures of the institution. In some cases, it is recognized that security personnel may be in charge of the respective emergency (i.e., shooting teams).**
 - iv) ***The institution must have a communication system that can be quickly accessed in case of an emergency.**
 - v) ***A written protocol should be developed involving local police or other emergency agencies and include response times to emergencies.**
 - vi) ***Institutions maintaining potentially dangerous animals must have appropriate safety procedures in place to prevent attacks and injuries by these animals. Appropriate response procedures must also be in place to deal with an attack resulting in an injury. The procedures must be practiced routinely per the emergency drill requirements contained in these standards. Whenever injures results from the incidents, a written account outlining the cause of the incident, how the injury was handled and a description of any resulting changes to either the safety procedures or the physical facility must be prepared and maintained for five years from the date of the incident.**

CHAPTER 3. TRANSPORT (p. 19)

Not part of this urgent review as not immediately applicable.

CHAPTER 4. GROUP STRUCTURE AND SIZE (p. 23) – RTNC must improve with addition of conspecifics (ideally a single female or less ideally a single male)

- 1) Careful consideration should be given to ensure that animal group structures and sizes meet the social, physical and psychological well-being of those animals and facilitate species-appropriate behaviors. Coyotes exhibit social structures ranging from single transients to pairs, to small generational packs. Short-term groupings of large canids in the wild that are outside of the typical "territorial alpha pair/pack" paradigm are often seen, but appear to be temporary situations: a reflection of the affiliative nature of these species. Besides the basic social unit described above, these species of large canids may be managed as contracepted pairs, contracepted pairs with non-breeding age young, post-reproductive pairs, same-sex groupings, as individuals or in some other grouping.
- 2) Coyotes are rarely bred in North American zoos and aquariums. They are usually non-releasable animals acquired from wildlife rehabilitation centers. It is not recommended to breed coyotes as this will utilize space needed for AZA SSP Program canid species. Contracepted pair or male groupings of coyotes are the normal in zoos and aquariums. Same-sex groupings are typically small' two or three individuals. Sibling groups work better than trying to assemble a group of unrelated individuals.

CHAPTER 5. NUTRITION (p. 28) – AZA criteria have been met

***Animal food preparations must meet all local, state/provincial and federal regulations.**

- 1) Nutritional Requirements
 - a) Free-ranging large canids can consume a variety of animals and plants depending upon species, location, habitat, season, and prey availability. Prey species range from large ungulates to medium and smaller prey such as raccoon, nutria, rabbits, birds, eggs, fish reptiles, and insects.
 - b) Generally, the nutritional requirements of non-domestic large canids can be met by feeding a nutritionally complete, commercial dog food. There have been reports of individual large canids exhibiting diarrhea, poor condition, or allergies when fed high cereal dog foods of low to medium energy levels. A nutritionally complete, high-energy extruded dog food based on animal protein is less likely to result in these problems, and will maintain most large canids in good condition and with good fecal quality.
- 2) Diets
- 3) Seasonal Changes
 - a) The natural diets of the omnivorous and opportunistic coyote are highly variable depending on region, season, and food availability. It is not typically considered a predator of large animals, although both occasionally kill deer. Coyotes are avid scavengers, but will routinely take small rodents, rabbits, reptiles, birds, bird eggs and a variety of invertebrates. They also eat all kinds of fruits.
 - b) Diets fed to coyotes in zoos should consist of a nutritionally complete, dry dog food, with supplemental fruits, vegetables, and whole prey items such as mice, small rats, quail or chicks. Dry dog food can be offered freely to these animals, as they will not spoil readily and over-consumption is generally not a concern. All food offered should be completely changes out on a daily basis.
- 4) Seasonal Changes
 - a) During colder months, especially in areas that experience sustained cold weather, food intake should be monitored and adjusted/increased if necessary. Similarly, hotter temperatures can actually increase caloric needs more than colder temperatures. This coupled with the fact that animals tend to reduce feed intake during hot temperature complicates the delivery of required nutrients and energy. In the wild, large canids may adjust food sources seasonally. Coyotes are highly carnivorous during cooler seasons and more omnivorous in warmer seasons.
- 5) Water
 - a) Fresh, clean drinking water should be available at all times for large canids. All water containers should be cleaned daily and disinfected weekly.
- 6) Food Variability
 - a) Supplements beyond the principal diet are nutritionally unnecessary for large canids, but will provide opportunities for animals to perform species-appropriate foraging and feeding behaviors. Providing additional food items for enrichment on a periodic and/or random basis is very desirable as long as certain precautions are met

Appendix 6 (Continued)

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

- 7) Promoting hunting and foraging
 - a) Several different approaches to presenting food items in a way that promotes species-appropriate foraging and feeding behaviors have been used with large canids. See AZA Care of Large Canids Manual p 35.
- 8) Nutritional evaluations
 - a) Direct inspection of weight and body condition, coat condition, eating habits, stool quality, and standard veterinary measures should be included in gauging an individual's nutritional health. Overall activity levels should be monitored daily to note any changes in behavior or temperament. Any deviation from normal stool quality should be noted.

CHAPTER 6. VETERINARY CARE – RTNC must provide quarantine, hospital, and isolation areas and must improve rabies prophylaxis for staff

***A full-time staff veterinarian is recommended. However, the Commission realizes that in some cases such is not practical. In those cases, a consulting/part-time veterinarian must be under contract to make at least twice monthly inspections of the animal collection and respond as soon as possible to any emergencies. The commission also recognizes that certain collections, because of their size and/or nature, may require different considerations in veterinary care.**

***So that indications of disease, injury, or stress may be dealt with promptly, veterinary coverage must be available to the animal collection 24 hours a day, 7 days a week.**

***Written, formal procedures must be available to the animal care staff for the use of animal drugs for veterinary purposes and appropriate security of the drugs must be provided.**

***A staff member must be designated as being responsible for the institution's animal record-keeping system. That person must be charged with establishing and maintaining the institutions animal records, as well as with keeping all animal care staff members apprised of relevant laws and regulations regarding the institution's animal collection.**

***Record keeping must be accurate and documented on a daily basis.**

***Complete and up to date animal records must be retained in a fireproof container within the institution as well as be duplicated and stored at a separate location.**

- 1) Veterinary Services
 - a) Health, medical, dietary, reproductive, and mortality records for each animal should be kept in accordance with each institution's record keeping system. Written daily reports should be maintained indicating significant events regarding the animals' general condition, food consumption, bowel habits, social interactions, etc.
- 2) Identification Methods
 - a) ***Animals must be identifiable and have corresponding ID numbers whenever practical, or a means for accurately maintaining animal records must be identified if individual identifications are not practical.**
 - b) ***An animal inventory must be compiled at least once a year and include data regarding acquisitions and dispositions in the animal collection.**
 - c) ***All species owned by the institution must be listed on the inventory, including those animals on loan to and from the institution. In both cases notations should be made on the inventory.**
- 3) Transfer Examination and Diagnostic Testing Recommendations
 - a) ***The institution must have holding facilities or procedures for the quarantine of newly arrived animals and isolation facilities or procedures for the treatment of sick/injured animals.**
 - b) ***Quarantine, hospital, and isolation areas should be in compliance with standards or guidelines adopted by the AZA.**
- 4) Quarantine
 - a) ***AZA institutions must have holding facilities or procedures for the quarantine of newly arrived animals, and isolation facilities or procedures for the treatment of sick/injured animals.**
 - b) ***All quarantine, hospital, and isolation areas should be in compliance with AZA standards/guidelines**
 - c) ***All quarantine procedures should be supervised by a veterinarian, formally written and available to staff working with quarantined animals.**
 - d) ***Training and procedures must be in place regarding zoonotic diseases.**
- 5) Rabies
 - a) **Rabies pre-exposure prophylaxis with human diploid cell culture vaccine should be provided to staff handling non-domestic large canids in outdoor open zoo enclosures.** The initial rabies prophylaxis series consists of three vaccinations given at 0, 7, and 21 or 28 days. Vaccinated staff should have a serum sample tested for rabies virus neutralizing antibody at least every two years. If the titer is less than complete neutralization at a 1:5 dilution, the person also should receive a single booster dose of vaccine.
 - b) Many counties require that all bites from large canids be reported. Facilities should be familiar with their public health department's requirements and be prepared to respond to a bite at their facility.
 - c) Public health departments may not be aware that large canids in zoos are vaccinated off-label with domestic dog, killed-virus rabies vaccine and that animals can be quarantined for observation by a veterinarian after a bite incident.
- 6) Preventative Medicine
 - a) ***The veterinary care program must emphasize disease prevention**
 - a) Daily Visual Assessments
 - b) Annual Physical Exams
 - c) Parasite Control
 - i) Daily removal of feces and old food from enclosures and removal of standing water
 - ii) Monthly treatment with selamectin, ivermectin or milbemycin during mosquito season
 - iii) Flea and tick prevention
 - d) Vaccinations (Rabies, Distemper, Parvo, Corona, Lepto)
- 7) Capture, Restraint and Immobilization

***Capture equipment must be in good working order and available to authorized, trained personnel at all times.**

Appendix 6 (Continued)

Dr. Alisa Kubala Evaluation of Coyote at River Trail Nature Center

8) Management of Diseases, Disorders, Injuries and/or Isolation

***Keepers should be trained to recognize abnormal behavior and clinical symptoms of illness and have knowledge of the diets, husbandry (including enrichment items and strategies), and restraint procedures required for the animals under their care. However, keepers should not evaluate illnesses nor prescribe treatment.**

***Deceased animals should be necropsied to determine the cause of death. Disposal after necropsy must be done in accordance with local/federal laws.**

CHAPTER 7. REPRODUCTION

- a) Not part of this urgent review as not immediately applicable.

CHAPTER 8. BEHAVIOR MANAGEMENT (p. 62)

1) Animal Training -**AZA criteria have been met**

- a) Classical and operant conditioning techniques have been used to train animals for over a century. AZA accredited institutions are expected to utilize reinforcing conditioning techniques to facilitate husbandry procedure and behavioral research investigations.

2) Environmental Enrichment – **RTNC must improve with addition of much larger enclosure/environment and conspecifics**

***The institution must have a formal written enrichment program that promotes species-appropriate behavioral opportunities.**

***The institution must have a specific staff member or committee assigned for enrichment program oversight, implementation, training, and interdepartmental coordination of enrichment efforts.**

- a) Environmental enrichment, also called behavioral enrichment, refers to the practice of providing a variety of stimuli to the animal's environment, or changing the environment itself to increase physical activity, stimulate cognition, and promote natural behaviors.
- b) Large canid enrichment programs should be integrated with veterinary care, nutrition, and animal training programs to maximize the effectiveness and quality of animal care provided.
- c) A variety of approaches to promote species-appropriate behaviors in large canids (and provide them with choice and control over their environment) have been provided throughout this manual (p. 63-64)
- d) Some large canids (e.g. gray wolves and coyotes) can be naturally frightened by new objects and situation (neophobic). Exposing animals from a young age to a complex varied environment and making exhibit modifications in small steps may help minimize neophobic responses in sensitive species.
- 3) Staff and Animal Interactions – **RTNC must improve with addition of much larger enclosure/environment including holding areas**
- a) Large canids are managed in one of two styles. Either their keepers never enter the same space with the animals (i.e. protected contact), and the animals are trained to shift between enclosures; or the animals are not trained and the keepers enter enclosures with the canids to shift them or perform other husbandry procedures. All training should occur in protected contact situations to ensure the safety of the keeper staff. Large canid should be trained to shift into holding areas while the main enclosure is serviced and cleaned by animal caretakers. All enclosures should have easily accessible holding area that permit this to occur. Positive reinforcement (providing food rewards) has proven to be an effective training technique for large canids, however, hand-feeding in free contact situations is not recommended.
- 4) Staff Skills and Training – **RTNC must improve with an understanding of the wild nature and behavior of the species**
- a) Large canid staff members should be trained in all areas of large canid behavior management. Funding should be provided for AZA continuing education courses, related meetings, conference participation and other professional opportunities. A reference library appropriate to the size and complexity of the institution should be available to all staff and volunteers to provide them with accurate information on the behavioral needs of the animals with which they work.
- b) A thorough knowledge of the natural history of the species is essential to understanding an individual animal's behavior.

CHAPTER 9. PROGRAM ANIMALS (p. 39)

5) Program Animal Policy – **RTNC must improve with addition of much larger enclosure/environment and conspecifics**

- a) A program animal is described as an animal presented wither within or outside of its normal exhibit or holding area that is intended to have regular proximity to or physical contact with trainers, handlers, the public, or will be part of an ongoing conservation education/outreach program.
- b) ***A written policy on the use of live animals in programs should be on file. Animals in education programs must be maintained and cared for by trained staff, and housing conditions must meet standards set for the remainder of the animal collection, including species-appropriate shelter, exercise, social and environmental enrichment, access to veterinary care, nutrition, etc. In addition, providing program animals with options to choose among a variety of conditions within their environment is essential to ensuring effective care, welfare, and management.**
- 6) Institutional Program Animal Plans – **RTNC must improve with addition of much larger enclosure/environment and conspecifics**
- c) AZA's policy on the presentation of animals is as follows: AZA is dedicated to excellence in animal care and welfare, conservation, education, research, and the presentation of animals in ways that inspire respect for wildlife and nature. AZA's position is that animals should always be presented in adherence to the following core principles:
- Animal and human health, safety, and welfare are never compromised
 - Education and a meaningful conservation message are integral components of the presentation
 - The individual animals involved are consistently maintained in a manner that meets their social, physical, behavioral and nutritional needs.

CHAPTER 10. RESEARCH

- a) Not part of this urgent review as not immediately applicable.

Appendix 7

Dr. Edgar Garret Evaluation of Coyote at River Trail Nature Center

Jacqui Ulrich
Director Conservation & Experiential Learning
Forest Preserve District of Cook County
536 North Harlem Ave.
River Forest IL 60305

Ms. Ulrich,

On Monday, 6 June 2022, I visited the River Trail Nature Center to evaluate the large canid program at the facility. The large canid population is one neutered male coyote that is approximately 4 years old. The coyote was reared in captivity in close association with people and transferred to the Nature Center as a juvenile that was imprinted on people. My critique of the care and management for the coyote is largely based on the Large Canid Care Manual available through the Association of Zoos and Aquariums and covered housing, behavior, nutrition, veterinary care and record keeping.

Housing

The coyote is housed in an outdoor enclosure located under the canopy of mature trees. The enclosure has a solid roof that is approximately 18 feet high, a dirt floor (sand) and heavy-gauge wire mesh for walls. The base of the pen is a concrete berm that extends from about 6 inches above the ground to 5 feet below ground to prevent escape by digging. The enclosure is oval with approximately 260 ft² of floor space. The enclosure had 2 fixed, solid, elevated platforms, 1 suspended, slightly moveable, elevated platform with a fabric surface (re-purposed fire hose), an igloo-style hut/den, a hollow log, and an animal transport crate suitable for a medium to large dog. Water was available in a bucket inside the pen.

Since the pen is outdoors, the coyote will experience normal variations in day length over the course of the year. The pen is well shaded and open to allow good air flow, so the structure is well suited for warm seasons. The den is bedded with straw in the cold season and this, coupled with the sheltered nature of the area in the trees makes the structure well suited for the cold season. The sand surface provides good drainage, allows for easy waste removal and will not injure the coyote's feet.

There are no absolute standards for the size of pen for a captive coyote. The Guide for Care and Use of Laboratory Animals suggests 24 ft² as the minimum for medium to large dogs. However, the The Guide also notes there is no precise formula for housing area based on body size and that characteristics other than body size must be considered when defining housing area. The Large Canids Care Manual suggests 5,000 ft². However, this for 2 animals and animals that are not imprinted on people and thus in need of more space to move away from people to reduce

Appendix 7 (Continued)

Dr. Edgar Garret Evaluation of Coyote at River Trail Nature Center

stress. Given the furniture in the pen, the excellent maintenance of the pen and the fantastic efforts of the staff to provide multiple forms of enrichment multiple times per day, the pen is of adequate size for this single, human-adapted coyote.

While the enclosure is adequate, in my opinion, there would be advantages to increasing the size of the enclosure. Additional space would allow the coyote more room to move about and for installation of additional structures to provide visual barriers for a sense of privacy for the coyote. The additional space could be constructed such that the coyote could be confined to a section of the enclosure while work is done to the other part of the enclosure. This latter design characteristic would alleviate the need to move the coyote indoors when more intensive work is done in the pen.

There are many demands for financial resources in a large organization such as the Forest Preserve. The current enclosure is adequate, so expansion of the enclosure is not an urgent need. I will not presume to be able to rank the expansion of the enclosure on the Forest Preserve's capital projects list; however, including expansion of the enclosure as a potential future project would be reasonable.

Behavior

I have no concerns about the mental status of the coyote. The coyote's mental well-being is a high priority among the staff. The two feeding periods each day are coupled with interactions with the keepers. During my observations, the coyote responded to the keepers in a positive manner and seemed to thoroughly enjoy interacting with the keepers. The basic structure of the enclosure includes platforms and logs to provide a source of enrichment by allowing expression of natural behaviors. The staff introduce smaller items such as ropes and balls into the pen on a rotating basis to maintain interest. The staff create very interesting treats for the coyote by hiding mice inside a cardboard tube or inside a bag that has some novel scents added or small fish and mice frozen in ice.

Purpose-driven training is incorporated into the keeper's time in the enclosure with the coyote. The training serves as a source of mental stimulation for the coyote and facilitates common, necessary activities the keepers need to perform. Basic commands like sit and stay reduce the risk of escape as keepers enter and exit the pen; entering a den/crate provides a method to move the coyote out of the pen when necessary; extending a forelimb while sitting allows examination of the limbs. The coyote responded positively to the training routine. The combination of training and frequent low-stress contact allows the keepers to examine the coyote closely and touch him over all over his body so that changes can be recognized promptly.

The staff have observed that the coyote becomes temporarily agitated by the presence of certain types of vehicles, primarily snowplows, and by some maintenance equipment like mowers. The size of the space and location of the enclosure does not lend itself to the installation of structures to ameliorate noise. The disruptive noise events occur infrequently and I don't consider this a concern for the well-being of the coyote. In addition, the staff have

Appendix 7 *(Continued)*

Dr. Edgar Garret Evaluation of Coyote at River Trail Nature Center

the capacity to administer gabapentin and trasadone, using a dosing regimen developed by their veterinary team, to help reduce the short-term stress associated with the noise events. The medications are safe with no significant side effects and are effective at reducing anxiety in companion animals. This is a very reasonable approach to managing the stress associated with the noise events.

I observed the coyote while visitors stopped at the enclosure and simply walked by the enclosure. The coyote was more active when people were in the area but his activity was a metered pace and by no means frantic. He seemed genuinely curious about two small children that paused and were making noise. His activity returned to what seemed to be a baseline level soon after the visitors left. With only me present and holding still he moved about in a slow steady manner and periodically sat or stood still while listening and sniffing the air. He did not lie down to rest during my observation time but I consider that normal. I expect him to be curious and vigilant when there is activity close by. The extended period of quiet when the center is closed is a more appropriate time for him to rest and sleep.

Periodic evaluation of the coyote's activity when the Nature Center is closed to the public would augment evaluation of the coyote's daily activity budget. Trail cameras that are modestly priced will record short segments of video in response to motion and would likely supply as much detail as necessary to evaluate the coyote's activities in the evening.

Nutrition

I have no concerns about the nutritional management for the coyote. His diet is based on diet recommendations by the staff at the Brookfield Zoo and modified based on the coyote's response to the diet. The diet uses a commercial dry food as the core ingredient and that is supplemented with mice, rats, fish, cheese and vegetables. The additional ingredients are in keeping with recommendations for the feeding of large canids and simulate the natural diet. The additions are also a source of enrichment for the coyote. The ingredients are purchased from Brookfield Zoo so the mice, etc. are known to be safe for the coyote. The coyotes is evaluated daily for body condition and stool consistency. His weight has remained stable at approximately 35 – 37 lbs.

Veterinary Care

I have no concerns about the veterinary care program for the coyote. The Nature Center coordinates regular veterinary care with a local veterinary clinic that has veterinarians on staff with an interest in zoo and exotic animals. The coyote is seen on site once a year by the veterinary team. The veterinarians are available for phone consultations as needed and will provide emergency care as needed either at the veterinary clinic or at the Nature Center.

Written notes are kept regarding the health of the coyote. He has had only minor problems since arriving at the Nature Center. He had a broken nail in the first year and developed a focal skin lesion in 2020. Both issues were resolved. The coyote is given Heartgard and NexGard once a month to control heartworm disease and fleas/ticks, respectively. The coyote is observed very

Appendix 7 *(Continued)*

Dr. Edgar Garret Evaluation of Coyote at River Trail Nature Center

closely three times a day during training sessions and the keepers are very attuned to his condition and behavior which allows for early detection of problems.

The coyote appears to be healthy. He is examined yearly and vaccinated against rabies and Distemper-adenovirus-parvovirus-parainfluenza virus, leptospria (combination vaccine). He is tested for heartworm, Lyme disease, Ehrlichia, and Anaplasma. A fecal floatation, CBC and serum chemistry all also done yearly. His CBC and serum chemistry panel had no significant abnormalities for the past 2 years and has been negative for parasites on fecal floatation for the past two years. The last veterinary exam was performed in December 2021.

Records

I have no concerns about records related to the care of the coyote. Notes are made daily about what is fed with a section available below the feeding chart to note any abnormalities observed. Active concerns are also denoted on a large, easily visible white board so that all staff members are aware of the concerns. Medical records are kept in a folder and are of sufficient detail to provide a good medical history for someone that is not familiar with the coyote.

The staff expressed interest in exploring other record keeping systems. This effort should be supported. Record keeping systems should be selected or designed to fulfill specific needs. Records necessary to meet regulatory requirements should be the highest priority. Sufficient details to evaluate and track health and well-being are also very important and not as easily defined. Items to be monitored and the frequency of monitoring must balance the additional time required to keep the records and the benefit of the records. Additionally, for electronic records, the format of the records will affect the ability to search and analyze the records for trends. Thus, the structure of a database records system is critical to its utility.

Conclusion

The coyote at the River Trail Nature Center is well adapted to his surroundings, is healthy and well cared for. The staff at the Nature Center are very knowledgeable about the appropriate care of the coyote and attentive and responsive to his needs. I have no concerns about the health and well-being of the coyote. If it is financially feasible, the coyote's enclosure should be expanded; however, this is not a necessity for the well-being of the coyote given the exemplary management of the coyote by the staff at the Nature Center.

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Appendix 8

Cook County Sheriff's Police Department Incident Report



COOK COUNTY SHERIFF'S POLICE DEPARTMENT INCIDENT REPORT

1401 S. Maybrook Drive, Maywood, Illinois 60153

SH-22-00010279

I-UCR Offense Code: Primary and Secondary Classification

Classifications
7386 - ANIMAL PROBLEMS

Address of Occurrence

Location Code - Primary
270 - FOREST PRESERVE

Location Code - Secondary

Address
3120 MILWAUKEE AVE

Beat of Occurrence

Is this Location a Licensed Premise? NO

Date and Time of Occurrence

Is Date Range? NO

Occurrence Date	Occurrence Time	R.O. Arrival Date	R.O. Arrival Time
11-JAN-2022	0948	11-JAN-2022	0948

Case Report Number (CR Number)
SH-22-00010279

Unit
1004A / SPECIAL VICTIMS UNIT

NO	Was this Domestic Related?	NO	Was this Incident Fire Related?
NO	Was this Incident a result of a Chicago Initiative Detail?	NO	Was a Victim Information Notice Given?
NO	Was this Incident Mental Health related?	NO	Was this Incident a result of a Hireback Detail?
NO	Use of Force Involved?	NO	Preliminary Investigation Recorded on Body-Worn Camera?
NO	Was a DIN (Domestic Information Notice) Given?	NO	Body-worn Camera Recording(s) Reviewed?
NO	Was a Victim/Complainant Signature Form Completed?	NO	Was a SAIN (Sexual Assault Incident Notice) Given?

Related Phone Number Information

Phone Type	Phone Number	Ext	Description
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People Specific Information

Non-Offender Details

(INTERVIEWED - WINTERS, Brian)

Demographics

Role	Type		
INTERVIEWED	INDIVIDUAL		
Information Refused? NO	Injured? NO	Police Officer? NO	Sheriff's Employee? NO
Last Name	First Name	Middle Name	Name Suffix
WINTERS	BRIAN		

Printed on: 01-FEB-2022 12:03:57 Created by: Police Officer Michael Kizaric #353 Status: Approved

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Appendix 8 (Continued)

Cook County Sheriff's Police Department Incident Report

COOK COUNTY SHERIFF'S POLICE DEPARTMENT - INCIDENT REPORT

SH-22-00010279

People Specific Information

Demographics

Alias Last Name	Alias First Name	Maiden Name	Nickname			
Sobriety SOBER	Birthdate	Place of Birth				
Sex MALE	Race WHITE	Age (From)	Age (To)	Age Units	Age Estimated? NO	
Height (From)	Height (To)	Weight (From)	Weight (To)	Complexion		
Eye Color	Hair Color	Hair Style	Build	Facial Hair		

Contact Information

Contact Type	Phone Number / Email	Contact Hour (From)	Contact Hour (To)	Available Anytime
PHONE - BUSINESS	847-824-8360	0900	1700	NO

Mental Health Information

Is individual related to mental health aspect of incident? NO

Court Information

Incident Administrative Information

Associated Report Numbers

Associated Records Case Number

Associated Central Booking Numbers

Associated Central Booking Number

Report Involvements

Officer	Role	Attested?	Attested Date	Date
Police Officer Michael Kizaric #353	REPORTING OFFICER	NO		13-JAN-2022

Incident Notification Details

Unit / Agency Notified	Last Name	First Name	Star # / ID #	Employee #	Beat / Position	LEADS # / NCIC #	Date / Time Notified	Notification Type
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Incident Specific Information

Property Information

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Appendix 8 (Continued)

Cook County Sheriff's Police Department Incident Report

COOK COUNTY SHERIFF'S POLICE DEPARTMENT - INCIDENT REPORT

SH-22-00010279

Property Information

Currency Details

Explosive Details

Firearm Details

Narcotic Details

Other Property Details

Narrative

Do not duplicate or repeat information located elsewhere in this report, narratives are for explanation or additional information only. If there is an arrest include a full description of events leading to the arrest.

Narrative

In summary, on 10 Jan 22, the Cook County Sheriff's Office received an email claiming that a coyote in the possession of the Cook County Forest Preserve and located at the River Trails Nature Center (3120 Milwaukee Ave, Northbrook, IL,) was being neglected. On 11 Jan 22 at approximately 0945 hours, Inv. Kizaric #353 and Inv. Bonarek #303 of the CCSPD Special Victims Unit arrived at above address and made contact with Winters, Brian, the Assistant Director of the River Trails Nature Center. Winters was cooperative and escorted investigators to the enclosure where the coyote is kept. Investigators observed that the coyote appeared to be in excellent condition. Investigators also observed that the coyote had access to liquid water (not frozen), adequate insulated shelter from the elements, and that its enclosure was clean and provided ample space for the animal. Winters related that the coyote has been in the possession of the Cook County Forest Preserve for approximately four years, that it was brought to them as a pup after significant interaction with humans, and that the coyote could not survive if released into the wild. Winters related that the coyote is well cared for, and is provided several enrichment activities each day by Forest Preserve staff. These activities include problem solving puzzles and click training, among others. Winters related that possession of the coyote by the Cook County Forest Preserve is regulated by the US Department of Agriculture (Class C Exhibitor License #33-C-0410, Expiration 25 May 22) and that regular inspections are conducted. Winters further related that the coyote enclosure exceeds the size requirements set forth by the US Department of Agriculture. Investigators observed no violations of the Illinois Humane Care for Animals Act. Nothing further.

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