Animal Wellbeing Newsletter

November 2025

The purpose of this document is to review the Columbus Zoo and Aquarium's ongoing animal wellbeing program, highlight the activity of various animal wellbeing ventures around the zoo, and provide opportunities for continuing education through discussion of animal welfare scientific literature.

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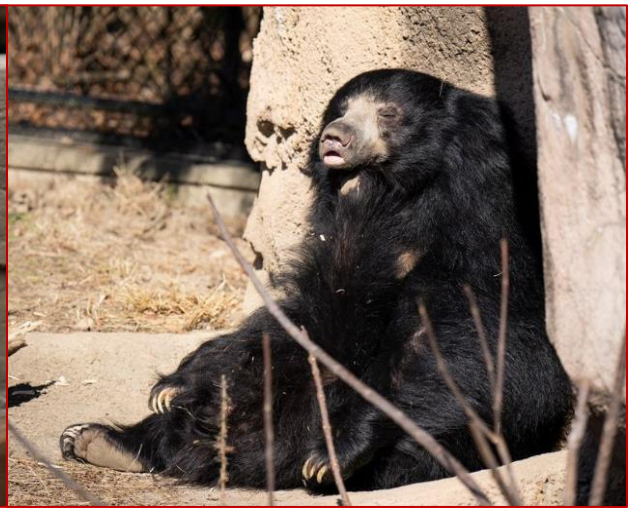


Mission

The Columbus Zoo and Aquarium's (CZA) wellbeing mission is to ensure best wellbeing of all animals in our care.

Vision

CZA's wellbeing vision is to be a recognized leader in zoo animal wellbeing.

Definition

CZA defines animal wellbeing as the state of being comfortable, healthy, and happy.

Approach

Regular wellbeing assessments, innovative enrichment, and both staff as well as animal training are used to proactively ensure all resident animals will thrive in their environments at CZA.

The 2025 Animal Wellbeing Education Series

In previous years, we offered a brown bag lunch and learn series focused on animal wellbeing. This year, we are rebranding and expanding your access to animal wellbeing information!

Wellbeing Webinar Watch

Join Zach England and other coworkers as we watch recorded webinars from esteemed animal welfare scientists. These meetings will not be recorded but will be offered on two separate days in order to accommodate your schedule!

~~**"The Five Domains Model"**~~
~~Dr. Ngaio Beausoleil~~
~~Jan. 13th & 15th @ 1pm in Lakeside~~

~~**"Welfare: Threat or Opportunity?"**~~
~~Dr. Jake Veasey~~
~~Mar. 14th & 17th @ 1pm in Lakeside~~

~~**"Deconstructing Choice and Control"**~~
~~Dr. Marieke Gartner~~
~~May 14th @ 1pm in Water's Edge~~
~~May 16th @ 1pm in Lakeside~~

~~**"Modern Zoo Animal Feeding"**~~
~~Dr. Marcus Clauss~~
~~Jul. 14th & 16th @ 1pm in Lakeside~~

~~**"Implementing Goal-Based Enrichment"**~~
~~Elly Neuman~~
~~Sept. 12th and 15th @ 1pm in Lakeside~~

"Training as Enrichment"
Dr. Eduardo Fernandez
Nov. 12th @ 1pm in Africa Event Space
Nov. 14th @ 1pm in Lakeside

Live Wellbeing Presentations

Prefer the classic live talks? Don't worry! We will again offer six live presentations, featuring Dr. Katie Seeley and Zach England, as well as a few committee presentations!

~~**"What is Animal Wellbeing"**~~
~~Dr. Katie Seeley & Zach England~~
~~Feb. 27th @ 1pm in Lakeside~~

~~**"Deep Dive into Wellbeing Assessment"**~~
~~Animal Wellbeing Zookeeper Committee~~
~~Apr. 27th @ 1pm in Lakeside~~

~~**"Animal Wellbeing & Evening Events"**~~
~~Zach England~~
~~Jun. 23rd @ 1pm in Lakeside~~

~~**"Conducting Behavioral Observations"**~~
~~Zach England~~
~~Aug. 19th @ 1pm in Lakeside~~

~~**"Scanimals: Data Collection & Utilization"**~~
~~Zach England~~
~~Oct. 13th @ 1pm in Lakeside~~

"Focusing on Focal Assessments"
Dr. Katie Seeley
Dec. 18th @ 1pm in Lakeside

AWES – Paraphrasing Previous Presentations!

Weren't able to attend the June, July, August, September, or October AWES presentations? No worries - Find the highlights below! Additionally, recordings of the previous presentations will be available on the O-drive as soon as possible.

"Animal Wellbeing & Evening Events"

By Zach England, 6/23/25

Science Summary: Evening Events can have an impact on wellbeing! During evening events at other institutions, these species showed…

-Increased resting and use of areas further from visitors

-Reduced feeding, locomotion, play

(Sunset Safari; Pastorino et al., 2017)

-Increased ARB

-Reduced resting

-No change in FGM

(ZooLights; Bastian et al, 2020)

-No behavioral change during concert

(Concert; Harley et al., 2022)

-Increased use of indoor space

-No changes

-Vigilant behavior only during event nights

-No changes

(Christmas Lights; Williams et al., 2023)

This aligns with data collected here at CZA during evening events in 2024. Some animals displayed signs of fear or stress during events, while others showed no changes. Some animals chose to interact with the new stimuli, while others chose to remove themselves.

Make sure to use CZA's Evening Event Assessment Tool during Wildlights! I have highlighted a few of my favorite questions from the assessment below:

Section 1: Building a Behavioral Profile	
What behaviors could represent the animal is comfortable with event stimuli?	What behaviors could represent the animal is experiencing stress or discomfort?
What behaviors could represent the animal is experiencing fear?	What behaviors could represent an immediate detriment to the animal's wellbeing?

Section 2: Pre-Event Questions		
Will the animal have access to a space absent of event stimuli?	How will we validate that this space is free of event stimuli?	Does this space offer the same opportunities as the rest of the habitat?

Animals should have the ability to remove themselves from event stimuli if they want! However, we can't just assume they have retreat spaces – we need to validate that they are actually a retreat and free of event stimuli.

What is the animal's normal morning routine?	Are there any changes that can be made to the animal's morning routine to accommodate possible behavior changes?

An animal may not be able to or choose to rest as much during evening events. Thus, they may want to rest longer during the morning after. We need to understand and record their baseline before the event in order to make sure we can detect and accommodate changes during event evenings and the mornings after!

Section 3: During Event Questions			
Performing blue behaviors?	Performing green behaviors?	Performing yellow behaviors?	Performing red behaviors?

During Event Evening:	Using retreat spaces?	Activity budget is normal?
During Morning After Event:	Demeanor is normal?	Activity budget is normal?

Basically, we want to know A) what behaviors the animal is performing and B) how does that compare to normal evenings? That information is vital when trying to understand how the animal is responding to its environment!

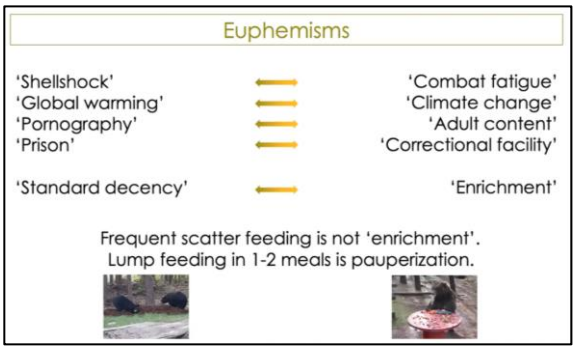
“Modern Zoo Animal Feeding”

By Dr. Marcus Clauss, Webinar Watch on 7/14/2025 & 7/16/2025

Link to Original Recording: https://www.youtube.com/watch?v=22eMtIgAX2I

Food For Thought!

Some presentation crumbs to get you thinking. Watch the full webinar via the link above to learn more!!



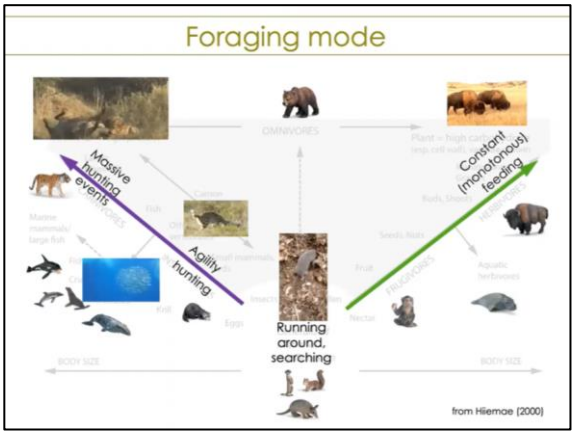
Words matter!

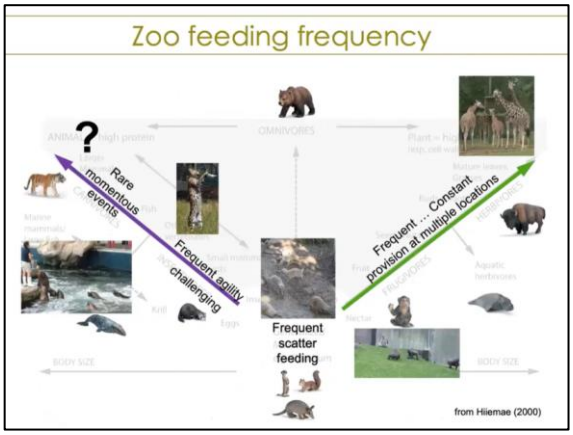
Calling scatter feeding “enrichment” or “something extra” for an animal who evolved to constantly search and find food says a lot about our attitude towards kind of standard husbandry that animal should have!

Whose wellbeing matters?

Just the carnivores in our care? Or do the lives of feeder animals matter too?

Do our feeding strategies = our animals’ foraging mode & feeding frequency?





"Conducting Behavioral Observations"

By Zach England, 8/19/25

How do we define behavior?

"The aggregate of the responses or reactions or movements made by an organism in any situation."

Can be as simple as "move" or "inactive," or as complex as "migration" or "mate"

Why do we care about studying behavior?

Best way for us to "hear" what our animals are saying about their mental state

Things to consider when designing a behavioral observation study:

Normal VS Abnormal Behavior

This applies to both the type of behavior as well as behavioral attributes!

What kind of behavioral data to collect?

Latency? Frequency?
Duration? Intensity?

What sampling rules should be used?

Ad libitum? Focal?
Scan? Behavior?

Don't forget about observation reliability testing!

Common questions we aim to answer:

Range of behaviors being performed?
How often are the behaviors performed?
Do they fluctuate over time?
What purpose does the behavior serve?

What types of behaviors are of interest?

Need to create an ethogram!

What recording rules should be used?

Continuous?
Instantaneous?
One-Zero?

Ok, so you've completed an observation study. Now what?

"Implementing Goal-Based Enrichment"

By Elly Neuman, Webinar Watch on 9/12/2025 & 9/15/2025

Link to Original Recording: https://www.youtube.com/watch?v=c89ZGeo2C4Y&t=2233s

Let's speak the same language – some good definitions of "enrichment" are:

"Environmental enrichment, also known as behavioral enrichment, provides species-appropriate challenges, opportunities, and stimulation. Environmental enrichment includes the regular provision of dynamic environments, cognitive challenges, and social opportunities." (Wild Welfare)

"…a process for improving or enhancing animal environments and care within the context of their inhabitants' behavioral biology and natural history. It is a dynamic process in which changes to structures and husbandry practices are made with the goal of increasing behavioral choices available to animals and drawing out their species-appropriate behaviors and abilities, thus enhancing animal welfare." (AZA)

As a field, we are heading towards enrichment programs that are…

-Evidence-based – evaluated and analyzed
-Focused on the individual
-Targeted to all taxa
-Replacing "getting from my keeper" with "getting from my habitat"
-Using goal-based enrichment

What behaviors should we focus on when designing enrichment opportunities?

Eat	Drink	Forage	Investigate	Play
Problem Solve	Nest	Groom	Bath	Sun
Explore	Tear	Hunt	Fly	Swim
Climb	Chase	Dig	Mark	Scratch

What are some examples of behavioral goals to set for our animals?

Increase arboreal activity levels		Increase foraging to 20% of day	
	Use sense of hearing to detect prey		Increase exploration of pool
Use vocal repertoire		Problem solve to access resources	
	Tool use during the day and night		Promote social cooperation

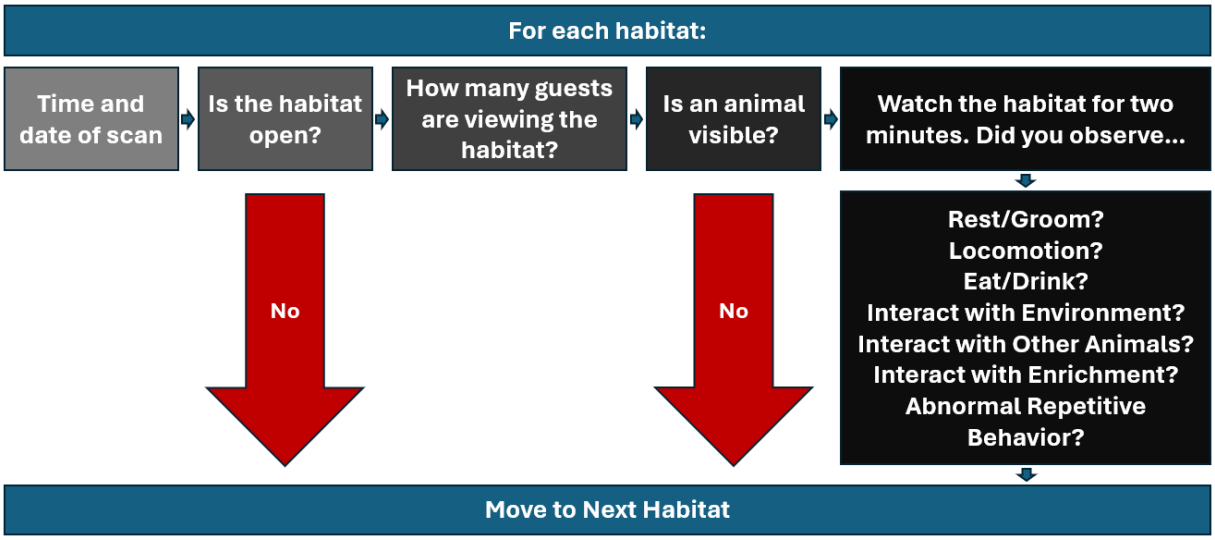
“Scanimals: Data Collection & Data Utilization”

By Zach England, 10/13/25

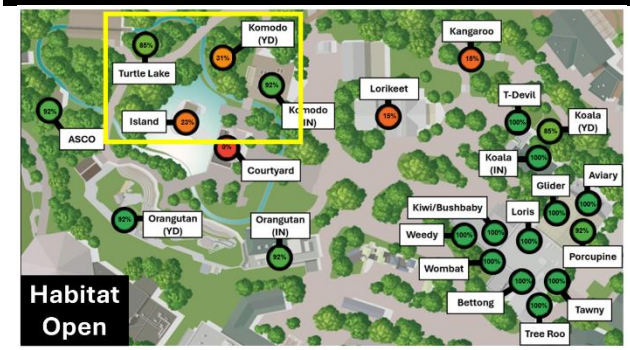
Scanimals is an animal observation program that, for all public-facing habitats, answers:

How often is the habitat open?
How often are animals visible?
What behaviors are guests seeing?

How data is collected for each habitat:



How can we use Scanimals data to set goals for 2026?



-Provide clear communication to guests when habitats are closed?

-Increase animal visibility for some habitats & decrease for others?

-Increase behavioral diversity for some habitats (but not necessarily all!)?

All Eyes on Asia Quest!

Caring for langurs, tigers, & bears – and more! Our AQ keepers have been working hard monitoring, maintaining, and making improvements to the wellbeing of the animals in their care. Read their stories below to learn more!!

Where in the World is Diesel?! The Journey of Our Amur Tiger

By Sarah Kirkman and Christy Nuss, Asia Quest Keepers

Diesel is our 8-year-old Amur tiger who arrived at Asia Quest in November 2023 with his companion Vera, both from Lee Simmons Wildlife Safari Park in Ashland, Nebraska. Diesel was originally born at a breeding center in Moscow to wild-caught parents considered "problem tigers," and brought into captivity for breeding. After spending time at the Moscow Zoo, Diesel made the long journey across the sea to Nebraska, where he lived for about four years before he and female tiger, Vera, came to Asia Quest.

Diesel's adjustment to Asia Quest was far more difficult than expected. While Vera acclimated quickly, Diesel exhibited extreme fear and anxiety—more than any tiger we had previously seen. These negative mental states manifest in abnormal repetitive behaviors (ARB) of pacing and wall climbing (where he stretches up on a wall, standing just on his back feet, and then turns and comes back down on all four feet). His ARB was intense and persistent, accounting for about 25% of his activity budget. Interestingly, these behaviors would stop entirely when Vera was in estrus.

During their first winter, Diesel and Vera had some promising interactions, and although breeding was unsuccessful, Vera's companionship helped Diesel build confidence in his new environment. By early spring, we began introducing Diesel to the yard, hoping it would ease his anxiety. Unfortunately, our habitat's setup—requiring him to climb a staircase to access the outdoor space—proved to be a major hurdle. Though he could see the open door at the top, he was too fearful to approach.

We began feeding him snacks and portions of his diet in the staircase to build trust. Eventually, Diesel learned the staircase was safe and ventured to the doorway, but he wouldn't go further. In April 2024, he started on anti-anxiety medication, and we began giving him overnight access to the yard. The medication helped somewhat—he was seen outside at night—but his pacing continued, now extending to the staircase and yard walls.
By July, Diesel was on a new medication combo that reduced his pacing and helped him explore the front part of the yard. With guidance from HOA keepers, we focused on getting him comfortable near the training door and paired his bone with a lemon scent to encourage exploration. Despite these efforts, Diesel remained hesitant, often grabbing his bone and retreating indoors.

To further support his wellbeing, we modified the tiger holding spaces—adding benches, D-rings for enrichment, and hiding spots. We also adjusted his feeding schedule to include gorge feeding twice a week, mimicking wild tiger eating patterns. Tigers in the wild generally don't eat 10lbs of meat every day but will eat 50-75lbs in a day with a large prey item. Diesel started with 25lbs of Nebraska meat and eventually increased to 32lbs, including a rabbit and bone. Gorge feeding significantly reduced his pacing, especially the day after a large meal.

In early spring 2025, the Asia Quest team, our wellbeing scientist, and some of the vet staff consulted veterinary behaviorists about Diesel. It was very helpful to hear their explanations of his fearful, anxious, and repetitive behaviors. They explained anxiety as dysfunction in the brain, mostly in the serotonin and dopamine pathways that make an animal not able to differentiate real threats and something normal in the environment. Some examples are when Diesel flinches at birds, hisses at the wall in the yard and large rocks, or sprints through the doorway to go back inside. Often it comes from early development in life, even a mother stressed during pregnancy can affect brain development. With animals like Diesel, sometimes there isn't a lot of improvement with different strategies, wonderful environments, lots of enrichment, etc. because the brain is not functioning normally. His ARB became a coping mechanism, offering comfort in uncertain situations. The behaviorist recommended fluoxetine, a medication that could help rewire his brain over time.

Diesel began fluoxetine in May 2025, and by June, he was seen exploring the far end of the yard, including the moat and pools. Although he regressed shortly after, his fluoxetine dose was increased, and he's since shown improvement—finding his meat daily, eagerly searching for his bone, and engaging with food-based enrichment like baby food, gravy, whipped cream, goat's milk, and even a cow leg. He once impressively carried a 75lb cow leg from the cave to the door and back inside!

It continues to be a work in progress with tweaking his medications, encouraging him to spend more time in the yard and decrease his ARB. Starting September 1st, the animal wellbeing intern has been reviewing Diesel's camera footage and calculating his activity budget daily which has been extremely helpful. His ARB has been as high as 25% during previous studies and these last few weeks his ARB was just under 10% which is the lowest it has been for a study since he arrived.

We hold regular "Diesel Meetings" with Asia Quest, Dr. Katie, and wellbeing staff to share updates, brainstorm strategies, and align on goals. We continue to try new ideas like hanging enrichment inside, adding new benches and resting locations, offering cow legs and gorge feeding him. We started chaining his bone in the yard once a week since he always takes his bone inside to enjoy and plan on chaining his next cow leg in the yard the first week of November! With continued medication, enrichment, and support, we hope Diesel will grow more comfortable in all his living spaces.

If you'd like to see Diesel, your best chance is in the morning, especially Sundays, Tuesdays, and Fridays, when he receives about 30lbs of his diet in the yard. Every step forward is a testament to the dedication of his care team and the resilience of this remarkable tiger. His journey is ongoing and has had support from all of the Asia Quest keepers, keepers from other regions, vet staff, our wellbeing scientist, and more – truly a zoo-wide effort to help Diesel feel at home!

Weight, What? Scale Training Our Markhor To Improve Animal Wellbeing

By Sarah Bush, Asia Quest Keeper

You might think markhor, the largest goat species in the world, would be super easy to scale train. You would be wrong! Currently, we have 1.1 markhor, Gambit and Rosalyn. Every four months, they should be anesthetized for hoof trims. During these procedures, we typically weigh them as well. This is not an easy task as they are pretty heavy and Asia Quest keepers aren't as spry as we used to be! But seriously, this just adds another thing to do while they are down, which is unnecessary and avoidable.

The first obstacle we faced with scale training is that male markhor cannot see us as a food source. This means we cannot throw food to them or hand-feed them. So, we had to put treats/food on the scale or on the wall by the scale top that we placed in the yard. The scale top was placed on four cinder blocks in a corner of the yard so that it would be level and covered on two sides. At first, Gambit and Rosalyn would only put their front feet on the scale and stretch as far as they could to get the treats and not get completely on the scale. So, we took a lot of branches from old browse and built a wall on the long side of the scale top so that it would be like a chute. It took them a few days to get used to this, and they stretched and jumped over the branches at first. Every day when we went out to clean the yard, we put a small amount of grain and treats in the bowl. They got used to this set up after a week or two and were regularly getting on the scale top. Finally, we were ready to weigh them.

If you know hoofstock, you know that anything new scares the bejeezus out of them. So, we expected the scale cells and the change in height of the scale top to give them hesitation on getting back on the scale. We hid all the wires under the branch wall and set the readout up so that we could see it from a distance. We went on cleaning the yard like normal and to our surprise Rosalyn was the first to get on! Gambit also did not hesitate to get on the scale. We continued to weigh them both every week so they could get used to the scale and work on the bridging (I'm sure elephants appreciated this since this was right after Rita Jean was born and there is only one scale we all share)!

Now that our markhor are scale trained, we can eliminate this step during their knockdowns and keep track of their weights more regularly. We can also start working on station training and other behaviors and hopefully continue these training projects with markhor we get in the future to set them up for success!

Zootube – Using Videos of Animals in Natural Settings to Inform Husbandry

By Laura McGlothlin, Assistant Curator of Asia Quest
and Carrie Ritchie and Justin Zolman, Asia Quest Keepers

As part of their 2025 departmental goals, Asia Quest keepers are observing videos of animals in the wild to inform and improve the care of our collection. This initiative aims to enhance animal wellbeing by replicating natural behaviors in managed settings. The goal was to identify natural behaviors that could inform enhancements to animal management practices.

Sloth Bears

After reviewing footage of wild sloth bears, Carrie Ritchie proposed several exhibit and husbandry improvements. Noting that wild sloth bears frequently use multiple dens and manipulate large stones while foraging, she suggested:

- Increasing den-like spaces by keeping select pens dark during the day to offer varied lighting environments.
- Adding natural fruiting vegetation such as blueberry bushes, nut trees, or melons to encourage foraging.
- Modifying the pool to be shallower, potentially using a false bottom or large rocks.
- Creating rock piles for enrichment and foraging opportunities.
- Exploring the possibility of converting the pool into a large dig pit or cave if depth adjustments are not feasible

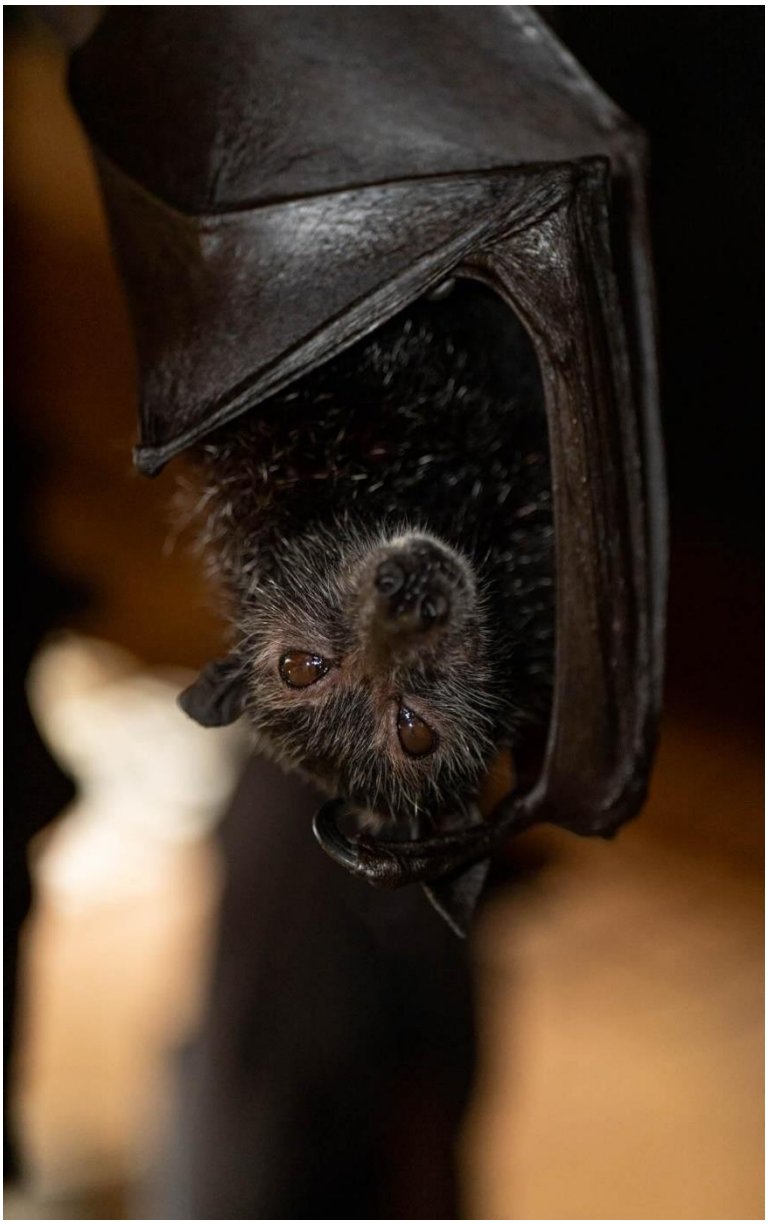
These recommendations aim to better replicate natural behaviors and enhance the bears' overall wellbeing!

Fruit Bats

Justin Zolman's focus was on Flying Foxes, including the Golden Mantled Flying Fox, in preparation for the addition of Straw-Colored Fruit bats to our collection. The primary objective was to study natural feeding behaviors. Currently, we offer food in metal bowls hung near their roosting mesh, supplemented with enrichment items such as plastic chains, hanging gourds, and suet feeders. These observations have sparked valuable discussions and inspired new feeding strategies.

Our bats' diet includes bananas, grapes, apples, pears, carrots, sweet potatoes, melons, and greens, typically chopped to suit daily enrichment formats. Moving forward we plan to:

- Present food in whole or larger pieces to mimic natural foraging.
- Rotate produce types rather than offering all items daily.
- Transition from bowls to more natural feeding setups using hooks, kababs, and enrichment devices.



These changes aim to encourage behaviors such as licking, tearing, and selective feeding – actions commonly observed in the wild. By diversifying feeding methods and spatial distribution, we hope to promote natural engagement and improve overall wellbeing. We will implement these changes next year and collect observational data before/after to assess their impact.

Behavioral Observations Driving Animal Management: The Impact of Traffic Noise on Red Crowned Crane Behavior

By Ann Wookey, Asia Quest Keeper

Asia Quest is home to a pair of red-crowned cranes, Junior and Thaddie Mae. Historically, these birds were housed in the large yard adjacent to the public bridge leading into the Asia Quest building. This location, while spacious, frequently attracted wild waterfowl, posing a heightened risk of avian influenza. To mitigate this risk, the cranes were relocated to the north yard of the Tiger Hut, formerly occupied by tigers. This yard offers a more secure environment, with a tall perimeter and tall trees with a dense canopy that effectively prevents wild waterfowl from landing in the yard.

While the cranes adapted well to their new habitat, Asia Quest staff began noticing occasional startle responses, seemingly triggered by loud noises from nearby Riverside Drive. To better understand the impact of these disturbances, Asia Quest interns conducted a one-day behavioral study on July 15, 2025. Observations were made throughout the day, with crane behaviors recorded every two minutes and all occurrences of loud noises or startle responses being noted.

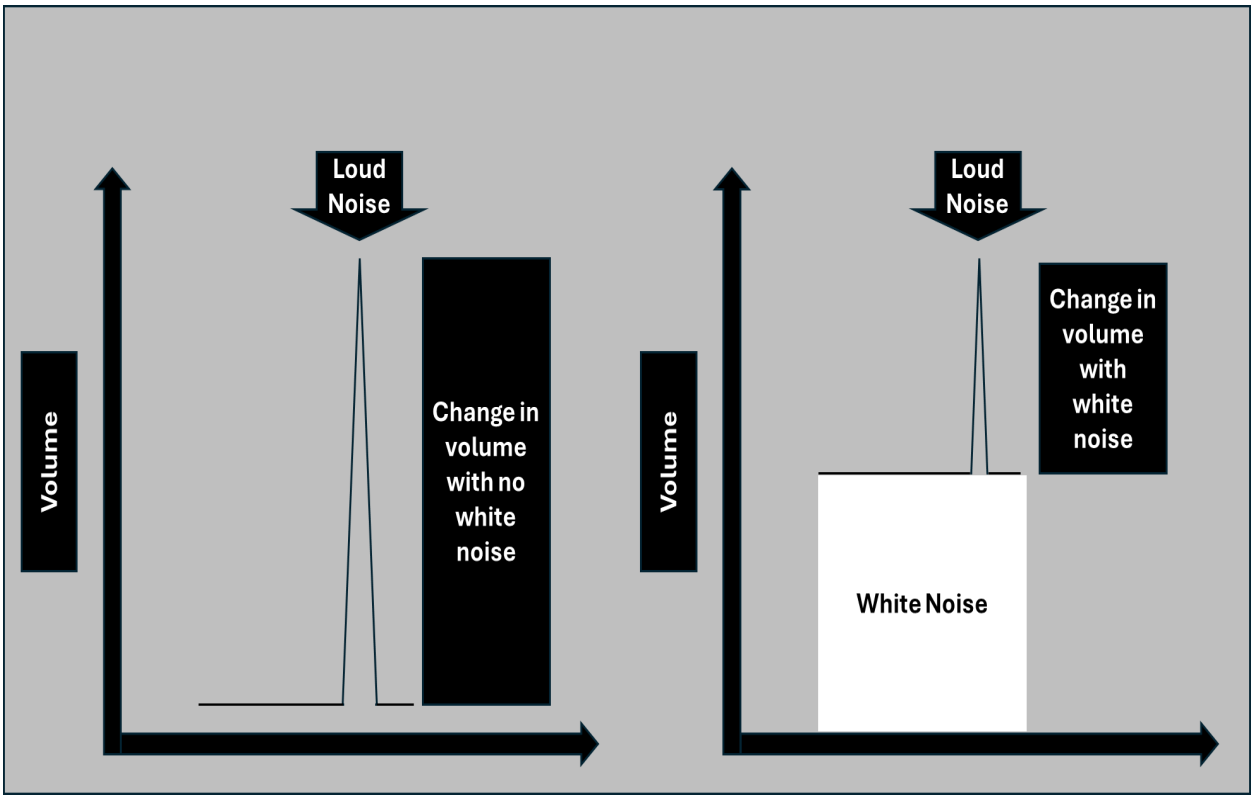
Key Findings:

- There were 28 loud noises recorded throughout the observation day – about one every 17 minutes.
- These resulted in 37 startle responses between both Thaddie Mae and Junior; only one loud noise did not result in a startle response from the birds.
- Cars on Riverside Drive accounted for 39% of loud noises and 40% of startle responses.
- The remaining noises mainly came from internal zoo sources like strollers, children, trash cans, and zoo vehicles.

General Activity Budget:

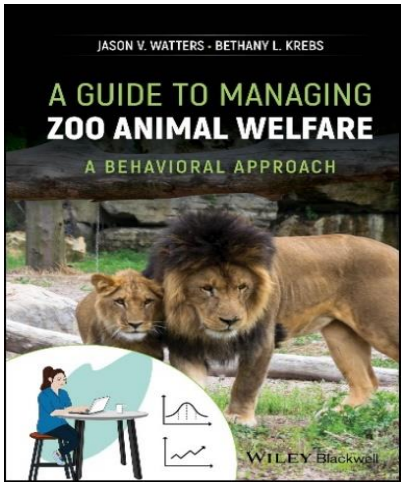
- Preening was the most frequent behavior, comprising 39% of observations, followed by alertness at 23.3% and foraging at 18.4%.
- Less frequent behaviors included locomotion, drinking, and resting.
- Nesting, dancing, and out-of-sight behaviors were not observed during the study.

This preliminary study suggests that red-crowned cranes are more sensitive to environmental noise than previously anticipated. Although the study was limited to a single day, the results highlight the need for further observation to confirm and expand upon these findings. Some things we can do to help mitigate the impact of sudden loud noises would be to add the sound of water / waterfall to their yard or other such white noise such as ambient music.



Science Summary – Book Club Series!

We normally summarize research articles but over the course of the next few newsletters, we are going to work through our first animal welfare textbook!



"A Guide to Managing Zoo Animal Welfare: A Behavioral Approach"

Book by Jason Watters & Bethany Krebs, 2025

Chapter Summaries by Zach England,
Animal Wellbeing Scientist

See May 2025 Newsletter for summaries of chapter 1/2/3/4!

Chapter 5 – Exerting Control

The third core psychological Need for animals is the ability to manage their own processes—what we often refer to as exerting control or expressing agency. This is one of the most fundamental needs of organisms, in that all organisms operate within their environments as if they can effect change for themselves through their behaviors. This belief in behavioral efficacy is not necessarily conscious but is instead based on innate, hardwired expectations that actions lead to results.

Understanding whether an animal feels it can influence its daily outcomes is more complex than assessing needs like safety or nutrition. Agency manifests in a wide range of behaviors, from overt actions like initiating aggression to more subtle choices like opting out of social interactions. These behaviors associated with exerting control are very diverse and occur in any context, from foraging to fighting to acquire mates and more.

In this chapter, the authors draw heavily from human psychology, where the importance of agency is well-documented. Terms like "managing one's own processes," "exerting control," and "expressing agency" are used interchangeably to describe the ability to make a choice in how to act that has a tangible impact on the outcome received. The authors posit that a tenet of core knowledge for nearly all organisms is that their behavior affects the outcomes they experience and allows them to manage those outcomes. If the function of an animal's behavior is to allow them to maintain physiological as well as emotional homeostasis, then this function has to be built upon an underlying expectation that one can adjust their outcomes through their behavior.

At the basest level, an animal's ability to exhibit any form of goal-directed behavior is an opportunity to exert control in terms of the outcomes they experience. Even choosing not to pursue a goal can be an expression of control—unless it stems from a lack of perceived agency. When animals are unable to influence their environment through their behavior, they may experience negative

emotional states such as anhedonia or depression-like symptoms. This has been observed in studies where animals subjected to unavoidable stressors, like electric shocks, eventually stop trying to escape and show signs of learned helplessness.

Choice is a key mechanism through which animals manage their preferences and exert control, but in captive environments, the choices available are limited to what humans provide. Even the choices available to wild animals are frequently quite limited; unpredictable availability of resources and changing conditions put limitations on animals' choice and control. However, it is not the presence or absence of external constraints that determines whether animals have a sense of control in their daily lives. Animals in the wild frequently experience conditions outside of their control despite the common assumption that life in the wild means total freedom. It is their response to these uncontrollable effects that is within the animal's control.

Often, animals in human care receive positive outcomes such as food and shelter independent of their behavior and ideally do not experience negative physical outcomes (e.g. punishment) in response to their behavior, outside of some social interactions. These conditions drive the potential for making animal choices irrelevant, leading to a negative affective outcome.

A zebra in a modern zoo does not need to be vigilant about predators and has food provided to them multiple times a day no matter how they decide to behave. Although both safety from predators and abundant food are positive for the zebra, the conditions under human care make it more difficult for the zebra to make decisions that will meaningfully impact their daily life.

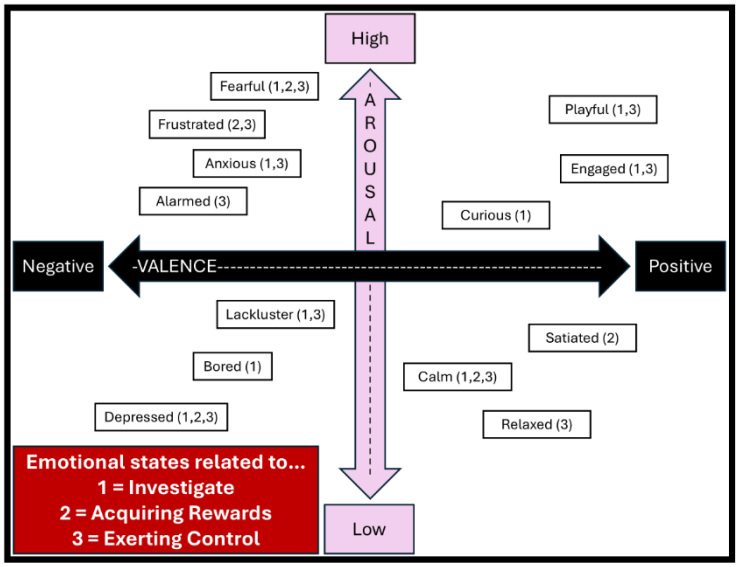
Supporting animal wellbeing, therefore, involves more than just providing food and shelter. It requires creating environments where animals can make choices and see the consequences of their actions. This includes offering opportunities to interact with their surroundings, caretakers, and stimuli in ways that allow them to express preferences and influence outcomes.

Like investigating and acquiring rewards, managing one's own processes is a core behavioral Need. It supports reaching success through behaving according to one's own behavioral competencies and drives a subcortical positive affective response. Animals in human care risk not being able to meet this Need because, for them, many decisions and outcomes can be predetermined. When animals are unable to express agency across multiple contexts they may develop depression-like symptoms. Providing animals with some means to perceive their behavior's relevance to the outcomes they achieve and multiple avenues to them should be a goal for animal caretakers within zoos and aquariums.

Chapter 6 – Good Welfare Through Psychological Resilience

In Chapter 6, the authors continue to emphasize the importance of animals being able to meet the three Needs: investigating, acquiring rewards, and exerting control. The authors argue that animal caretakers should strive to create conditions where animals can achieve a balanced state—meaning they are able to meet their Needs at least as often as those Needs go unmet.

Rather than attempting to eliminate all negative experiences, which is unrealistic, the goal should be to ensure that animals have enough positive experiences to maintain emotional balance. Positive experiences are those that allow animals to investigate, acquire rewards, or exert control in their daily life; we consider an experience negative when an animal could not meet one of their three Needs or if it negatively impacted the animal's ability to do so. The underlying assumption of the three Needs model of animal wellbeing is that meeting one of the three psychological Needs will provide animals with a moment of positively valenced emotion. Investigating and learning something new can result in a moment of surprise or excitement. Acquiring a reward can provide a feeling of satiety and comfort. Similarly, when animals do not have opportunities to meet one of the three Needs, this can result in a negative moment for the individual. A lack of opportunities to learn anything new may result in boredom. Not being able to acquire a reward can result in frustration or hunger. Inability to make decisions relevant to one's daily life can result in anxiety or anhedonia.

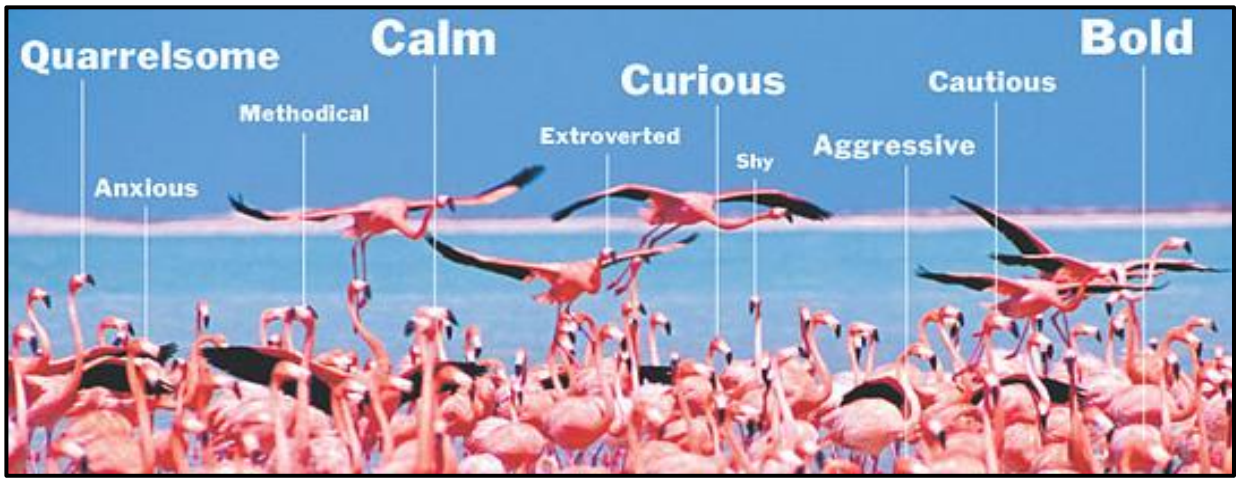


Animal behavior serves as a key indicator of whether their needs are being met. By observing behavior systematically, caretakers can assess the overall welfare of an animal and determine if their environment provides sufficient opportunities for positive experiences. A well-balanced environment should result in more positive than negative moments.

The authors emphasize that it should not be our goal to manage away any possibility of negative experiences in an animal's day, as we will inevitably fail. For animals, successfully managing potentially negative experiences is rewarding as it supports the Need to exert control. Sometimes, failure is unavoidable. Animals will be disappointed, or frustrated, or come out at the bottom of a social structure despite their best efforts. Resilience, the capacity of an animal to emotionally adapt successfully to disturbances in their daily lives, is a sign of a psychologically well-adjusted individual. If animal care professionals have provided sufficiently positive moments for an animal, the individual should be readily resilient toward relatively minor negative experiences and return to psychological homeostasis following moderately strong negative experiences in a short period of time.

Chapter 7 – Animal Personality: All Needs Are Important, But Are Not Equal

Animals of same species will exhibit differing behavioral responses when exposed to the same stimuli or environments. These differences are referred to as animal personalities and are known to influence their behavior, preferences, and interactions. Personality traits—such as boldness, sociability, and problem-solving approaches—are consistent across contexts and have been widely recognized as a fundamental characteristic of animals.



Personality differences lead to varied behavioral responses under similar conditions, which in turn affect welfare outcomes. Standardized care protocols often fail to meet the unique needs of every individual. While guidelines remain essential, animal care professionals must adopt flexible strategies, continuously assessing and adapting provisions to support individual welfare.

Maintaining personality diversity is crucial for conservation and management. Personality has a genetic basis, and preserving a range of traits helps sustain genetic diversity. Furthermore, animals of varied personalities solve problems differently and this means that populations comprised of various personality types are more resilient to environmental challenges.

One way to support personality diversity in populations of animals under human care is providing developing animals with diverse environments, varied learning opportunities, and alternative paths to achieve goals. This sort of environmental and experiential diversity provides options for performing tasks in different ways and facilitates the expression of varied personality types. This goal can be achieved by providing growing animals with diverse environmental enrichment that encourages varied types of problem-solving and challenges.

It is possible that animals with different personalities vary in how they value each of the three primary Needs. One animal may be more prone to seek rewards while another values investigating above other opportunities and another benefits most from managing the manner by which they achieve their goals. Assessing animals' preferences for enrichment types that independently support each of the Needs will allow caretakers to ensure that they can provide support for the predilections of varied personalities.

General Updates and Conclusion

General Updates

- The Animal Wellbeing Newsletter will be transitioning to the Watering Hole!
    - In the coming months, we plan to update the Animal Wellbeing page on the Watering Hole so that it includes more information on animal wellbeing, along with the animal wellbeing concern form. Additionally, the Animal Wellbeing Zookeeper Subcommittee is planning to post monthly stories featuring wellbeing wins from around the zoo! Don't worry, our Animal Wellbeing Scientist (Zach England) will also post occasional Science Summaries and Animal Wellbeing Education Series recaps!

Conclusion

Thank you for reading the final issue of the 2025 CZA Animal Wellbeing Newsletter! As always, please contact adam.felts@columbuszoo.org or zach.england@columbuszoo.org with questions, comments, or ideas regarding the newsletters or anything animal wellbeing!