The Journal of the American Association of Zoo Keepers, Inc.

Animal Keepers' Forum

Dedicated Safety Issue

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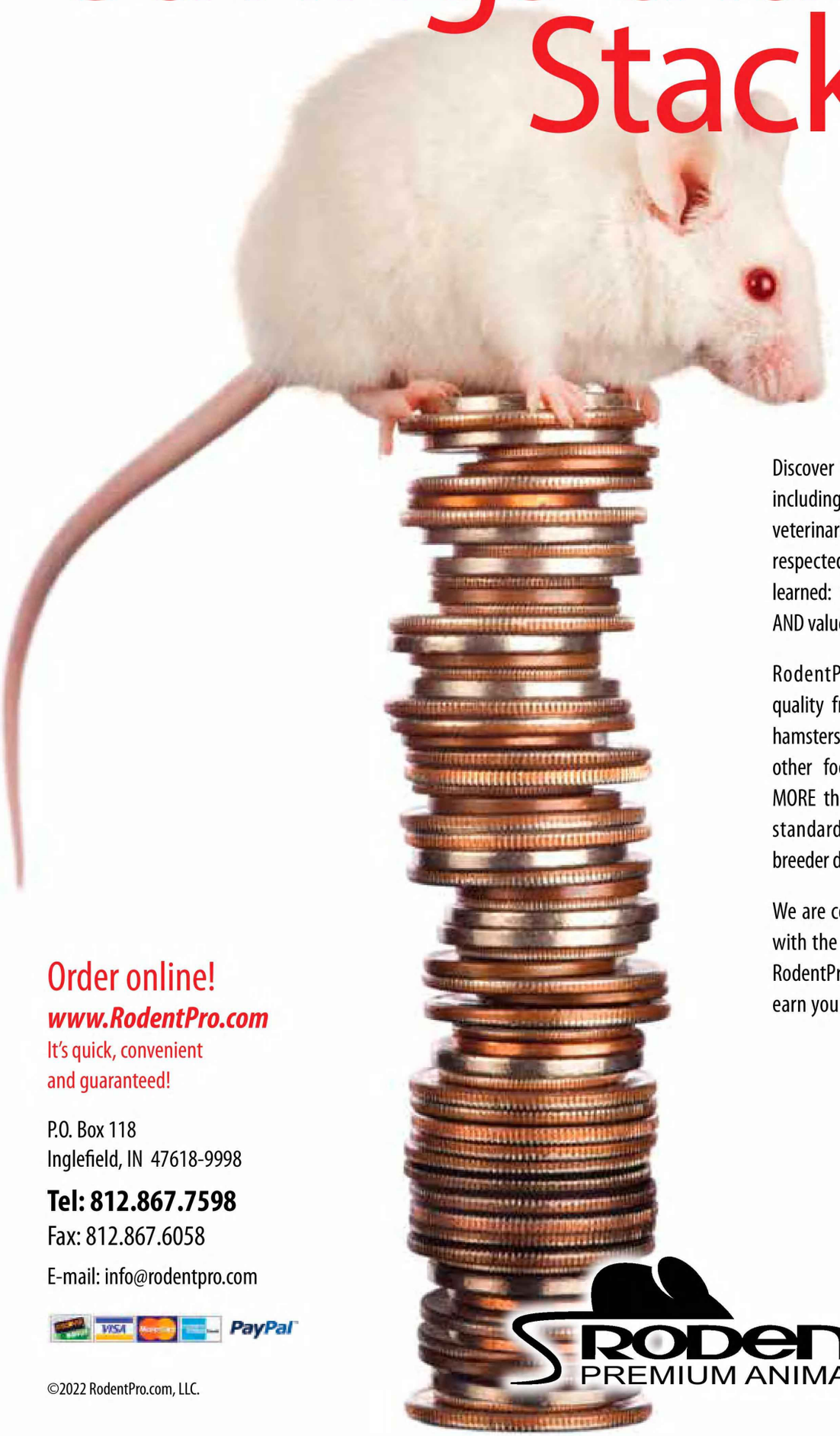

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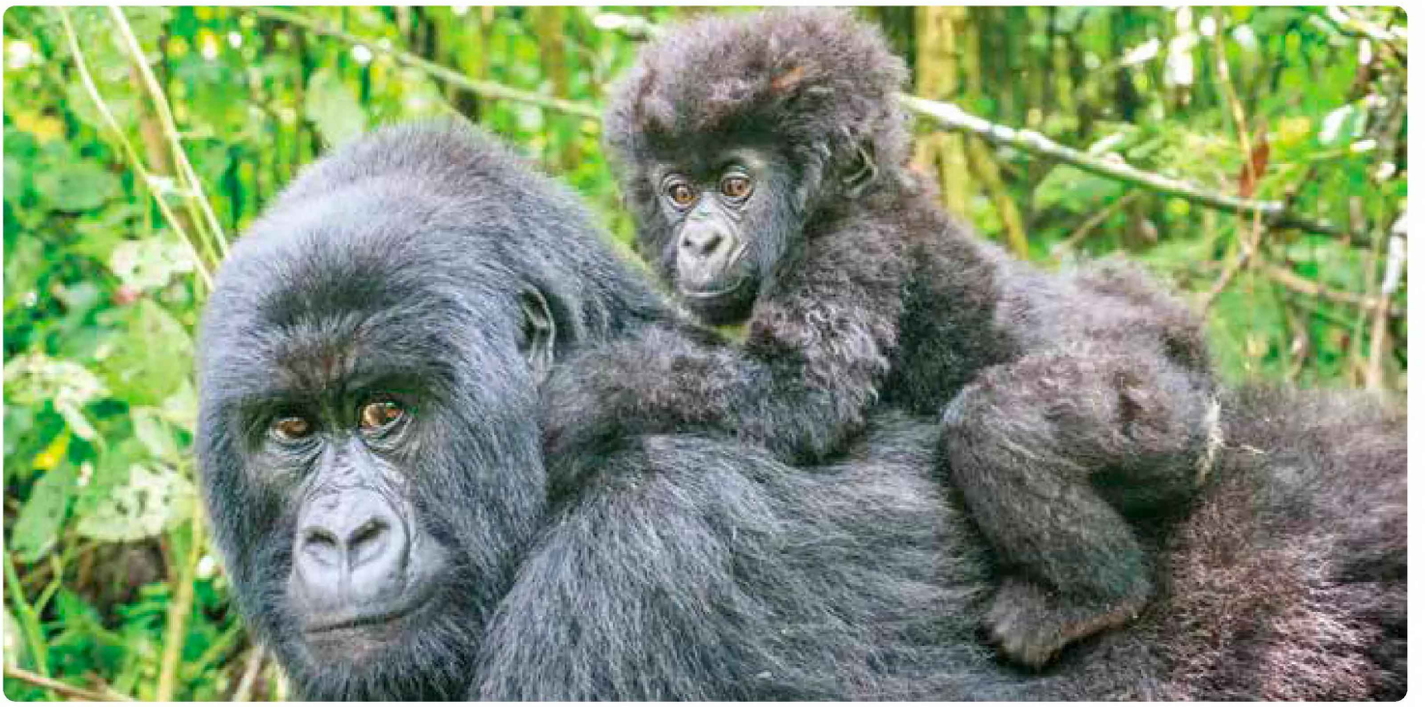

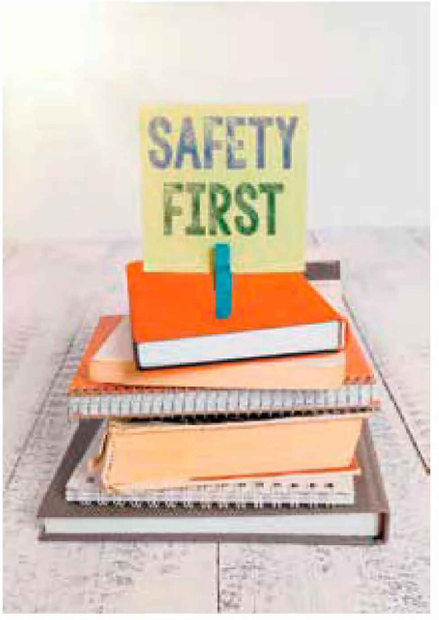

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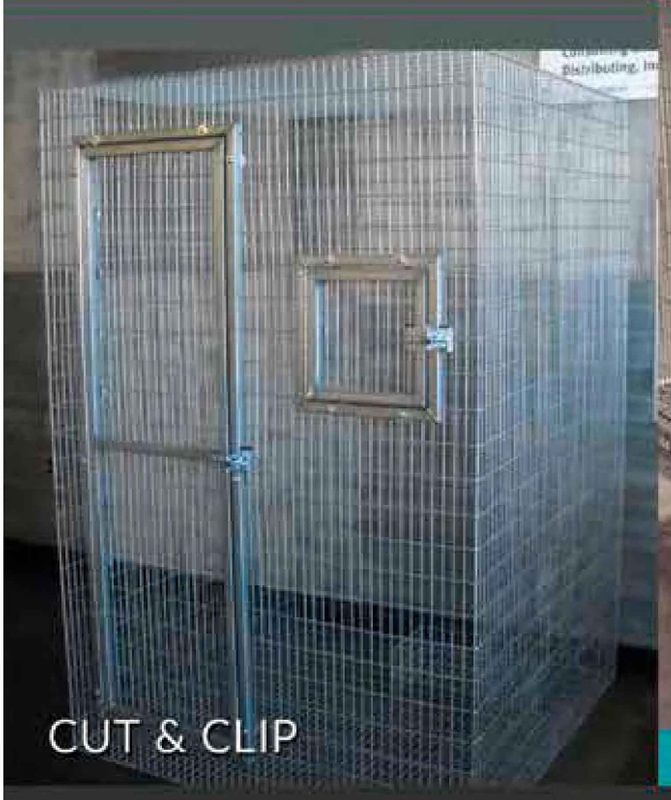

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The American Association of Zoo Keepers, Inc. exists to advance excellence in the animal keeping profession, foster effective communication beneficial to animal care, support deserving conservation projects, and promote the preservation of our natural resources and animal life.

ABOUT THE COVER

This month's cover photo comes to us from Elena Bell of the Akron Zoo and features a Sumatran Tiger (*Panthera tigris sumatrae*). Sumatran tigers are the smallest tiger subspecies, weighing in at 300 pounds or less, compared to their Amur cousins, which can reach 700 pounds. Like most cats, Sumatran tigers are solitary and live within a carefully guarded territory. They are ambush predators with night vision that is six times better than human vision.

Sumatran tigers are listed as Critically Endangered by the International Union for Conservation of Nature (IUCN). Their population in the wild is now heavily fragmented and is estimated to range between 400 and 500 individuals. They can be found principally in and around Sumatra's national parks. Continued agricultural habitat destruction, poaching, and killing of tigers that come into contact with villagers, all intensify the crises surrounding tigers.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the Editor. The Editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or e-mail contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone (330) 483-1104; FAX (330) 483-1444; e-mail is shane.good@aazk.org. If you have questions about submission guidelines, please contact the Editor. Submission guidelines are also found at: aazk.org/akf-submission-guidelines/.

Deadline for each regular issue is the 3rd of the preceding month. Dedicated issues may have separate deadline dates and will be noted by the Editor.

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This special issue is the next step in the AAZK Safety Committee's efforts to ensure that keepers are able to understand field-relevant safety topics just as well as they're able to implement them.

Nearly every moment of a zoo keeper's day integrates safety, even when it's not at the forefront of our minds. Shifting and lock protocols, PPE, and drills are a standard part of proper animal care practices. But the planning and logistics behind the creation and integration of these safety measures aren't always fully understood. The AAZK Safety Committee works to help AAZK members better understand how and why different safety measures impact us.

Several different types of emergencies can occur at zoos and aquariums. Whether it be an animal escape, dangerous guest experiences, or natural disasters, preparedness is essential. One of the most critical components of a facility safety plan is a pre-planned response to an emergency event coupled with frequent staff training to ensure that every employee understands their roles and can act accordingly in the response. The AAZK Safety Committee has presented workshops on crisis management and response at several recent AAZK Conferences. Check out the topical workshop proceedings from the 2016 and 2017 AAZK National Conferences on the AAZK website to learn more about crisis management. The Safety Committee is committed to continuing to educate attendees at future AAZK Conferences on topics such as the hierarchy of controls and enrichment safety.

The AAZK Safety Committee also works to increase the presence and voice of keepers as the field continues to evolve its safety procedures. The leaders of the AAZK Safety Committee have a long history of working alongside the AZA Safety Committee, including attending and taking part in various workshops as well as serving as an Advisor to their AZA counterpart. The Committee has spread their knowledge beyond their peers in the US as well. The AAZK Safety Committee has regularly presented to Latin American keepers in partnership with the International Outreach Committee.

This special issue is the next step in the AAZK Safety Committee's efforts to ensure that keepers are able to understand field-relevant safety topics just as well as they're able to implement them.

Thank you,

Paul
Paul.Brandenburger@AAZK.org

CALENDAR

JULY 2022

July 18-24	**National Zookeeper Week**

AUGUST 2022

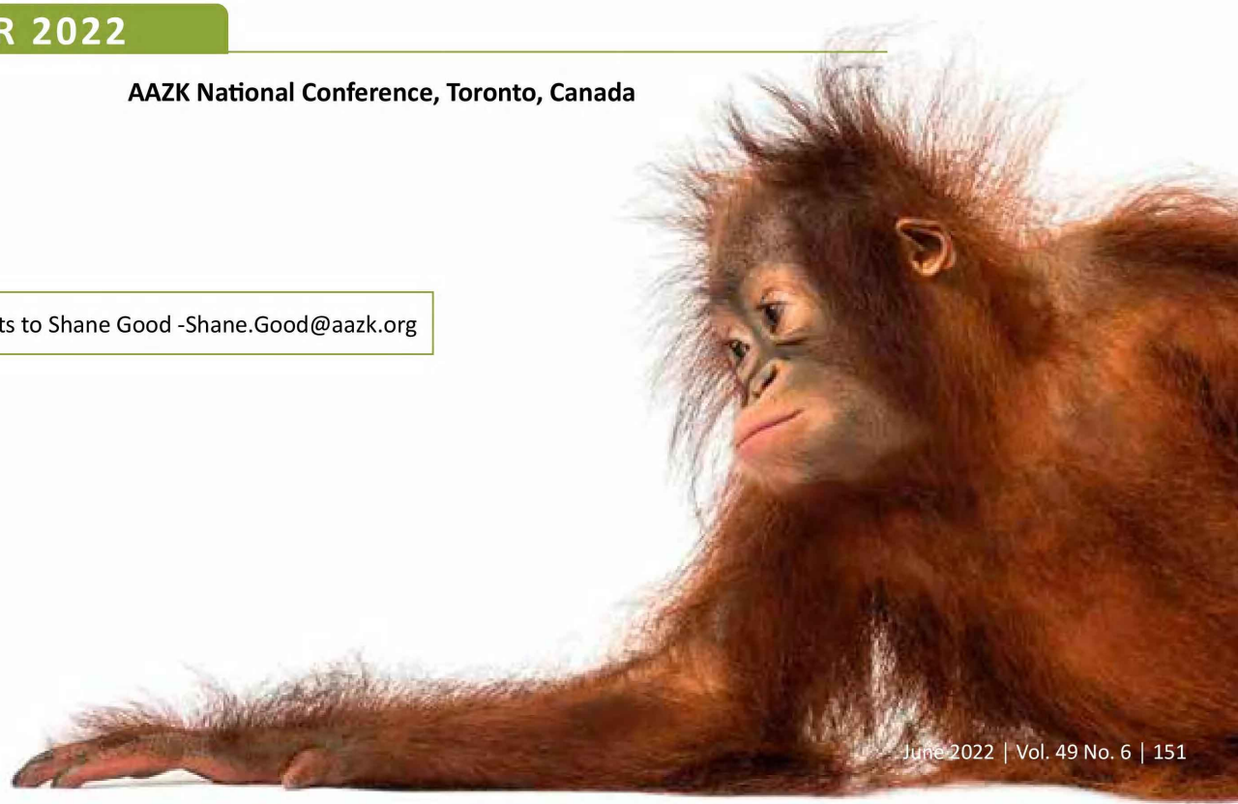
2022 ORANGUTAN SSP HUSBANDRY WORKSHOP AND COURSE
Hosted by the Little Rock Zoo

August 14	SSP Steering Committee Meetings (closed)
August 15	Husbandry Course
August 16 - August 18	Workshop
August 19	Post Trip

OCTOBER 2022

October 13-17	**AAZK National Conference, Toronto, Canada**

Submit your events to Shane Good -Shane.Good@aazk.org



Introduction

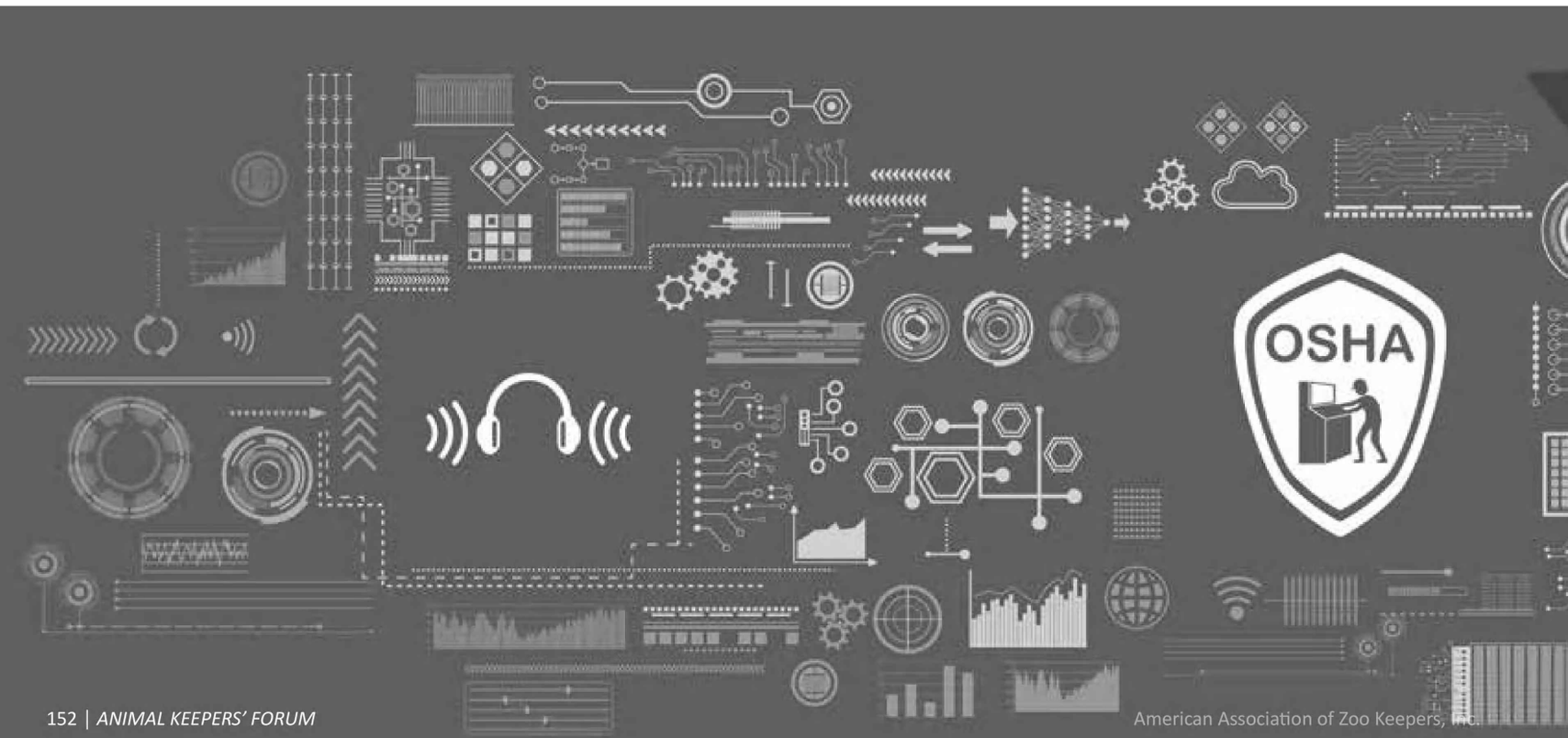
Ed Hansen
AAZK CEO/CFO

Safety in the world of animal keeping really is a "no-brainer" topic. A mistake with a dangerous animal will normally lead to catastrophic consequences. However, safe practices and safety training which are addressed in this issue of the *Animal Keepers' Forum* dedicated to safety in the workplace go way beyond simple awareness in a dangerous environment.

My introduction to keeper safety was an assignment as "safety supervisor" at my zoological facility, part of a city-wide program in all departments. The assignment meant that I was responsible for Occupational Safety and Health Administration (OSHA) policy and safety training for 20 employees. A few years later after a successful defense of OSHA citations at my facility, I accepted a position as Risk Management Specialist with the City and 20 employees instantly morphed into 7,000 in almost every work discipline imaginable.

Within the U.S., OSHA standards regulate safety via federal or state programs. Both Canada (COSHR) and Mexico (OH&S) have very similar national programs. OSHA Standards are divided into two disciplines; Construction (OSHA 510) and General Industry (OSHA 501). The normal daily activates of an animal care facility fall under General Industry, meaning the employees are working primarily in a "maintenance" function. However if a keeper is working on exhibit renovation or reconstruction, the discipline and applied standards would change to Construction. Interpreting OSHA Standards for practical application in a zoo or aquarium facility is an enormously difficult task.

OSHA Standards in the U.S. were drafted and became law in 1970. Obviously, the General Industry Standards were not crafted with a zoo or aquarium in mind. Therefore some standards are very difficult to apply in our world, such as Fall Protection or Walking and Working Surfaces while others such as Hazard Communication and Commercial Diving are applied exactly as the Standard was written and citations result from non-compliance. When OSHA cannot apply a specific Standard it will cite a facility under the General Duty Clause which states in part: "*Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees".*



When it comes to interpretation of a standard for safe practices, OSHA issues what is known as a Letter of Interpretation (LOI) that can be either reviewed or requested from OSHA regarding a work practice. An LOI has as much value in the workplace as a written Standard.

This *AKF* issue is dedicated to safety in an animal care facility and will offer a much deeper perspective than regulations and offer practical application of safety practices and training in your zoo or aquarium facility. I hope you enjoy the articles and photographs that depict safe practices and you have the opportunity to discuss implementation with your safety representative and then utilize these tips, practices and training at your facility.

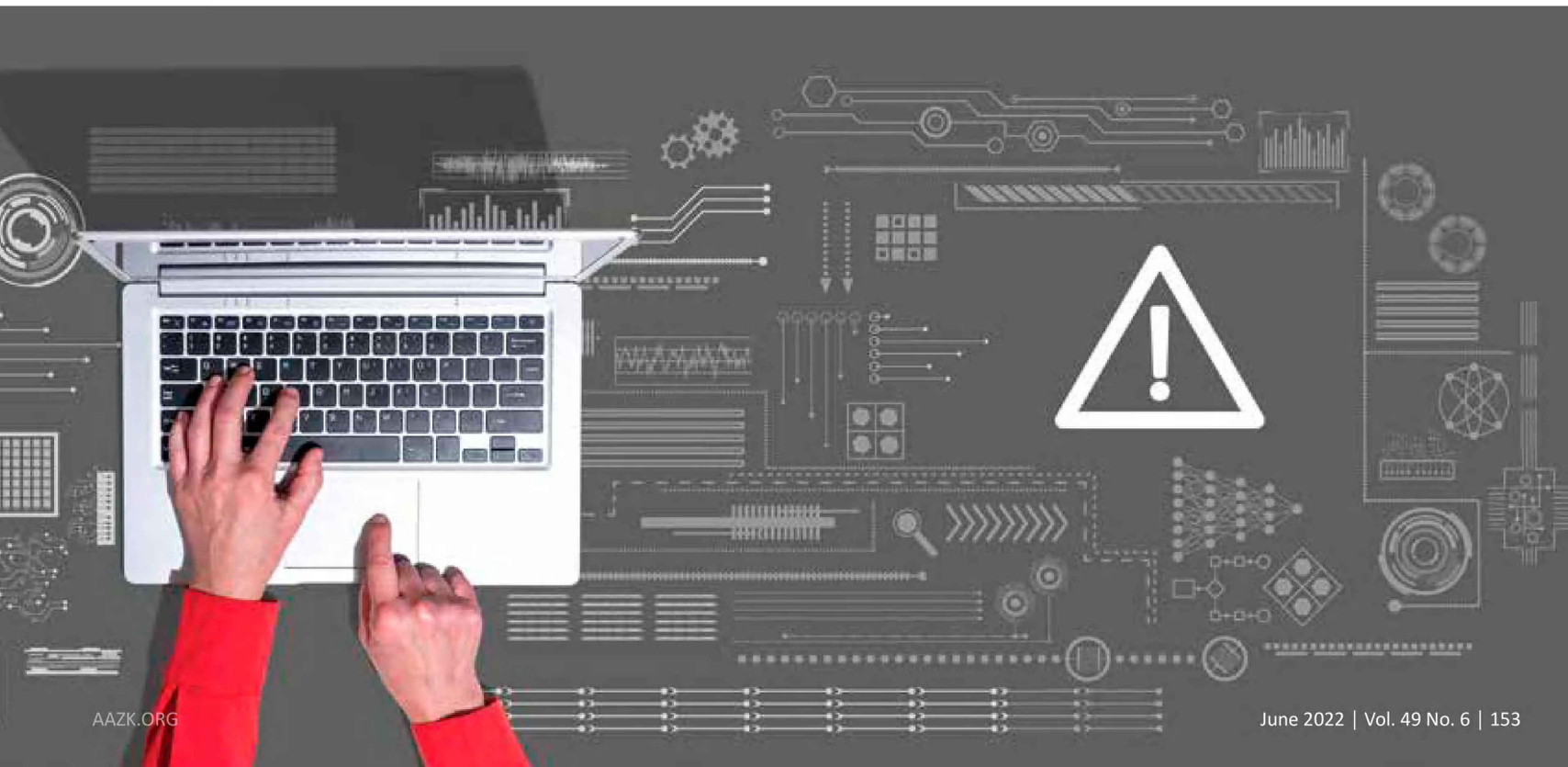
ABOUT THE AAZK SAFETY COMMITTEE

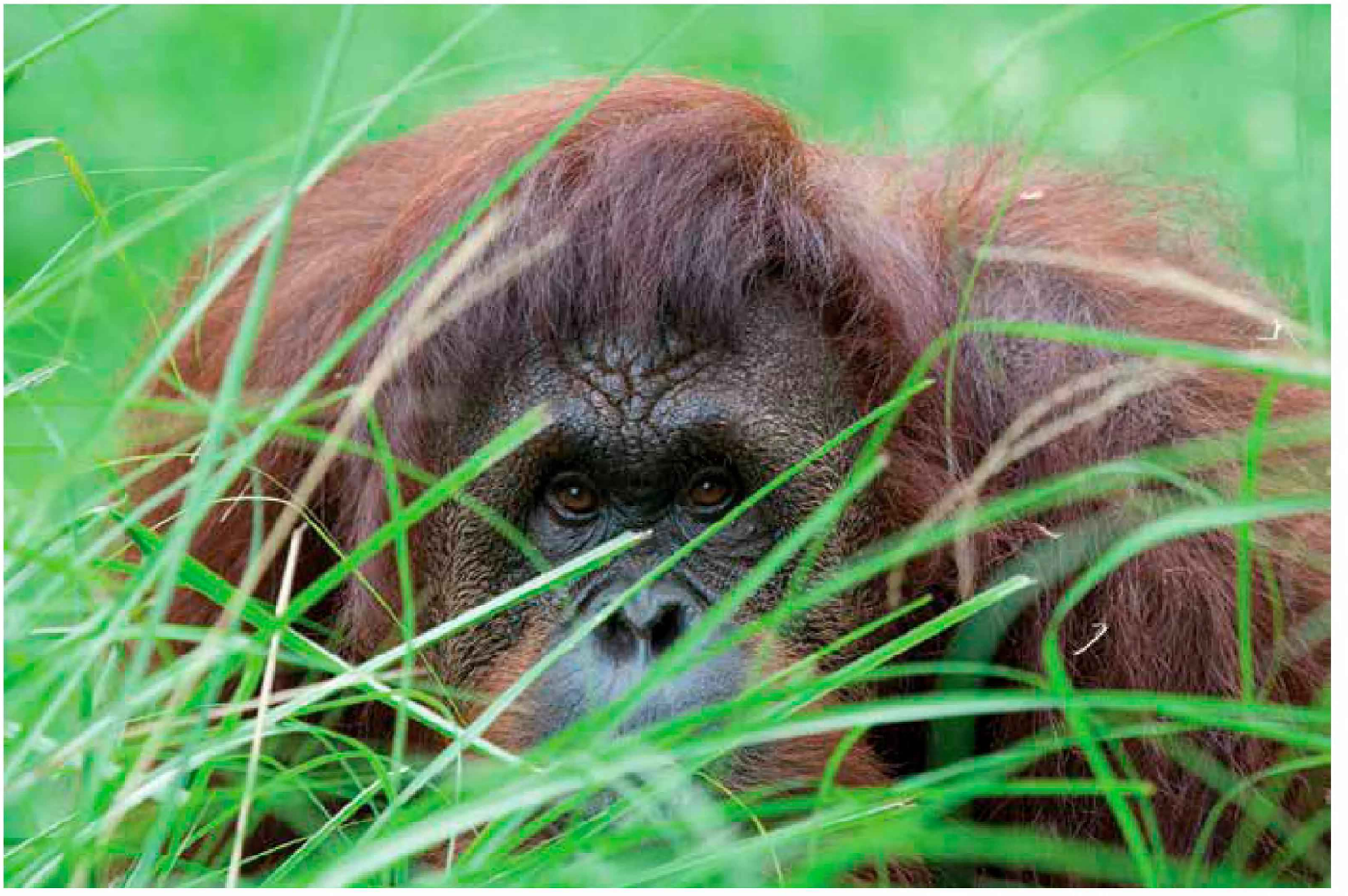
Welcome to the Safety Edition of the *Animal Keepers' Forum*! This edition includes articles focusing on safety topics related to zookeeping and is brought to you by the AAZK Safety Committee. We are so excited to present these articles to you and hope that they will be useful to thousands of AAZK members.

The AAZK Safety Committee is a group of animal keepers and AAZK members from across the country that work together to create safety resources for other zoo and aquarium professionals. We focus on creating presentations, workshops, and social media content, along with articles for the *AKF* and other zoo and aquarium-related publications.

We are here to serve AAZK members- if you have any suggestions, questions, or comments, please get in touch by sending an e-mail to safety@aazk.org. If you also have a passion for safety in the zoo and aquarium field, contact us to join the AAZK Safety Committee and work with us to increase safety knowledge in the United States.

THANKS! KATY JULIANO, AAZK SAFETY COMMITTEE CHAIR





Safety with Primates is Nothing to Monkey Around With

Ann Marie Felhofer
Milwaukee County Zoo

INTRODUCTION

When working with animals, safety is always a topic of discussion. Different species require different safety measures, and all zoos have their own ways of working with the same species. In this article, we will discuss some of the safety measures or protocols that can be implemented when it comes to working with primates of all sizes; from gorillas to squirrel monkeys.

POLICIES OF ALL KINDS

As zookeepers, we are told repeatedly to make sure locks are locked. Mistakes can be dangerous or even deadly. Working with primates can make this danger even more eye-opening.

At my institution, there is a double lock check policy on certain primate species, while some primates do not require double lock checks. A double lock check policy is when two different keepers are required to check a lock before entering a holding area or shifting an animal. They are not just watching the action of locking the lock or being told what locks to check, but they are actively touching and pulling on the locks that pertain to the designated area. This action of pulling on the lock is to certify that the lock is secure and the hasp is fully engaged. When shifting different groups, there can be multiple locks used to move them into another holding area.

These locks may or may not have been used, but the best practice is to verify all the locks that pertain to the area have been checked. This includes all shift doors, to be sure that it is safe to enter the area that the animal just shifted out of. I worked at a zoo where we did not have lock checks and worked alone with primates and carnivores. There are many zoos that may function like that. It does not make it right or wrong, it is just how that institution functions. Lock checking policies are all dependent upon the institution's needs and staffing.

It's also important to have positive and accurate identification of individual animals. Working with a group of 19 bonobos, part of the training is being able to accurately identify each of them. This training usually starts before you even train on the routine. When we start working with the troop this is crucial to the process and a keeper is not considered fully trained until you can correctly identify each individual. This is important regardless of the species for medical reasons; whether it is administering medication or reporting a problem to the veterinary staff. Knowing the individual animals also plays a role in understanding when it is safe to enter an area that they just shifted out of. In our department, we require positive identification of individuals by two keepers for our gorillas, bonobos, and orangutans. This way we know for sure that it is safe to enter an area that the animals just vacated. Regardless of the species, checking to verify that the animals are no longer in the area that you wish to enter is safe, and checking the animals did not break containment. Primates move quickly, high and low within the enclosure or holding, and may be missed when shifting.

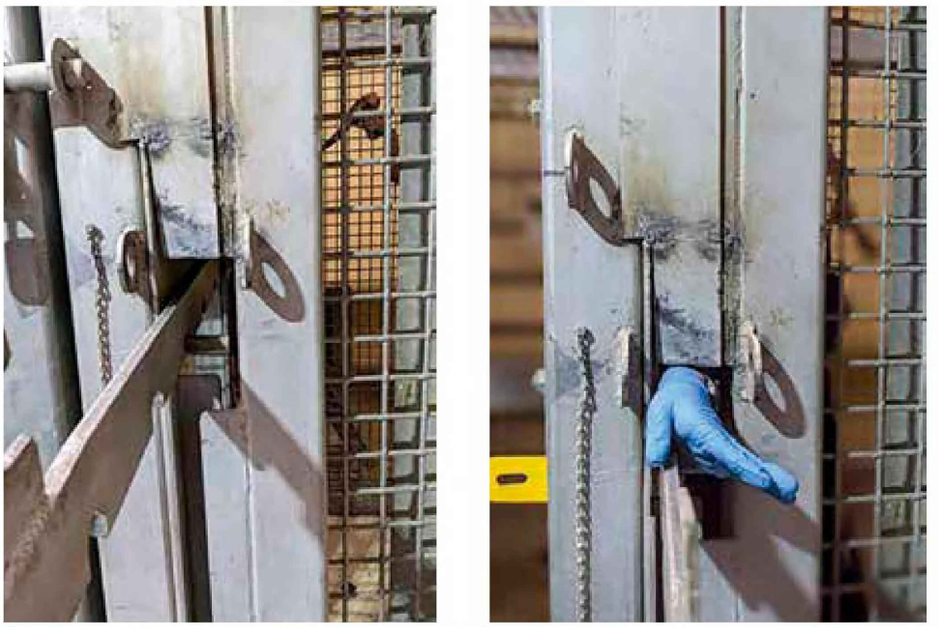
KEEP YOUR HEAD IN THE GAME

Whether working alone or with a partner, it is important to approach each day with a clear mind and "keep your head in the game." Leave your cell phone in your locker, jacket pocket, break room, or someplace where it will not be distracting to you or the animals. If you have a smartwatch, turn off notifications during the workday so you are not checking it when it goes off. If you are working alone, have another coworker know where you are and about how long you will be there. This way, if for some reason you are not back or have not been heard on the radio, another coworker can check on you.

If you happen to work with another person, don't get lost in casual conversation. Knowing when to stop the conversation and focus actively on shifting the animals or checking of locks takes some practice. Two methods that may be used to refocus are; one - to verbalize the steps, or two - to simply state "pause… lock check." This way both individuals will be focused on the task, instead of just going through the motions. One of the tricks that I use is to repeat what I just checked out loud so the other person can confirm that is what was needed or that we, as a team, can move on to the next task. For example: "I see animals X, Y, and Z. I know that it is safe to enter holding A and B."

INJURIES AND ZOONOTIC DISEASES

When working in the zoo field there are a lot of safety risks. When an injury does occur, be sure to report the incident to your supervisor, following the policies at your organization. This holds true for your coworkers; be sure that they are also reporting injuries. It may be something minor but reporting it and receiving medical care can prevent a lot more pain, work, or issues in the future. Minor head injuries from low-hanging props or even door frames are not uncommon. Head injuries can sometimes be severe and should not be taken lightly. Inform another coworker and follow the protocols set in place at your institution for reporting injuries. Ladder safety is especially important when working with primates. There are likely places that can only be reached by a ladder or climbing on the ladders that are part of the platforms or exhibit furniture. Be sure to follow ladder safety standards; take your time, have three points of contact, and remember that hoses and water can create an even more dangerous environment.



Shift door between two holding areas that had an opening while the door was in the open position where an animal could reach through. When the door was closed, the gap was not there.

To prevent the hand-sized gap that appeared when the shift door was open, a welding contractor created this box that allows the keepers full use of the door; including opening, closing, and securing it. Pictures taken by Ann Marie Felhofer.

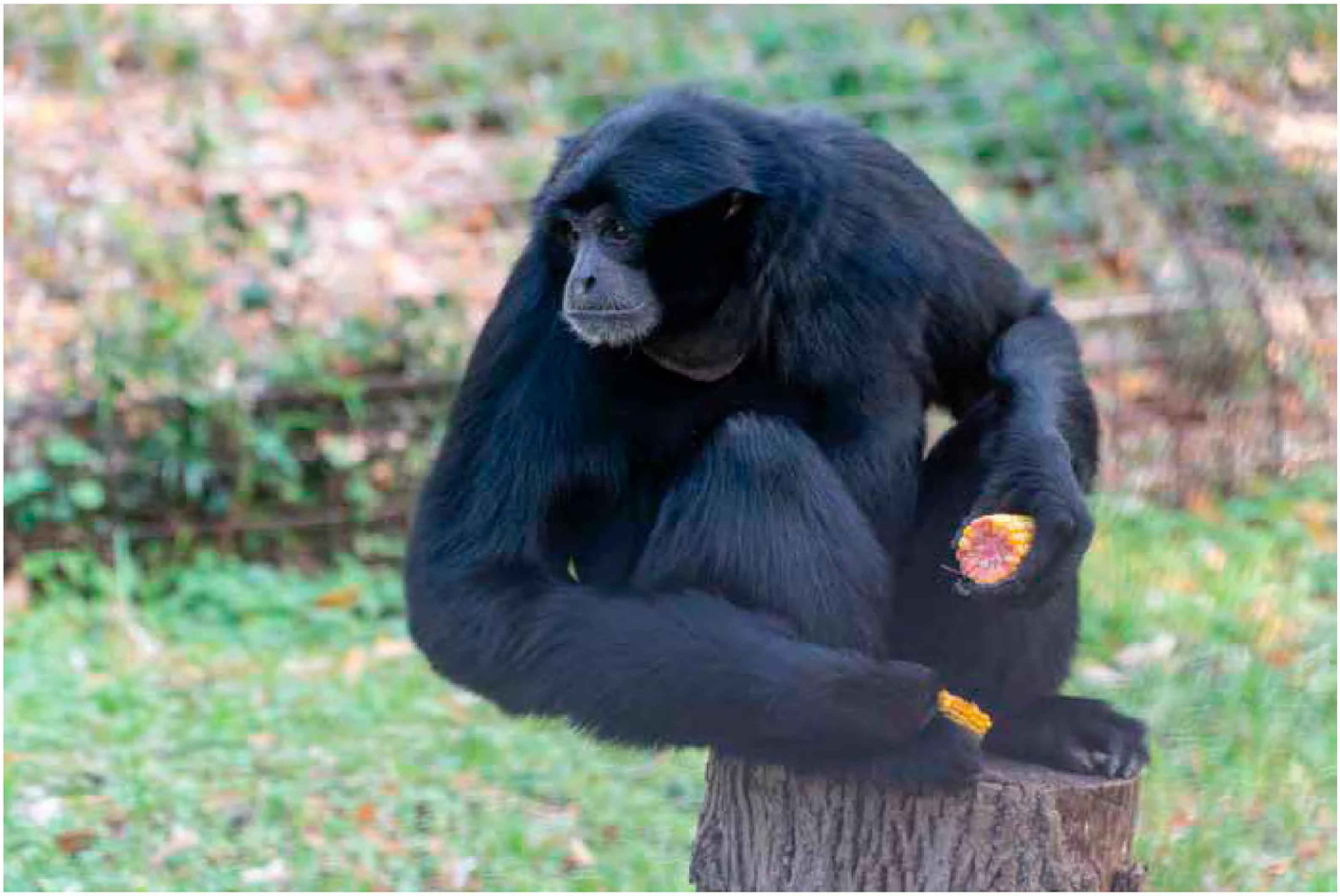
Using the proper personal protective equipment (PPE) is also very important to prevent the spread of zoonotic diseases for your overall health and the health of the animals that you care for. The common cold and other illnesses like COVID may be deadly for certain species within the collection. If working with macaques there is usually a PPE factor since they can have Herpes B virus. This is shed intermittently and can be fatal if a keeper were bit by a monkey or simply splashed in the eye while cleaning. Be sure to follow the PPE standards set in place at your facility; they can save your life or be the difference between having a sick or dying animal.

There are different things that we, as keepers, need to think about. For example: how far can that animal reach through the mesh? Is it a new individual to the group? Is it a young animal or an older one? What is the particular personality of the individuals? The rank structure within a group, is it changing or stable? Knowing the answers to these questions and how they can affect the way you work or complete tasks for the day are essential. Knowing how far an animal or certain individuals can reach through the 1 x 1 or 2 x 2 mesh is important when working with primates. Spider monkeys, for example, their tails are like another arm or leg. A young individual may be able to fit their hand through the mesh versus an adult who cannot. If a gap is noticed, document it so it can be corrected. Having a wish list of certain small safety needs or wants is a great idea, as it is best to have them corrected before they become a safety issue. This can be important for not only tools and chemicals, but keepers as well.

Your clothing, jewelry, hair, radio, and almost anything else can be considered something that a primate can grab. Clothing that is close-fitting or can easily be removed, such as a zip-up sweatshirt is ideal. Long hair should be pulled back in a ponytail, bun, or loose bun. Radios, keys, and belts are also things that can be grabbed and result in a keeper getting injured. It is always important to be watchful of where you are and where the animals are. Be mindful of both your personal safety and that of others. If you see anything that you feel is unsafe, don't be afraid to speak up.

ENRICHMENT SAFETY

Enrichment safety, as with any species, must be considered. It is important to monitor your animals with enrichment and how they interact with it. Certain individuals may interact differently than other individuals within the same



species of primates. Fire hoses can fray, and the strings can get wrapped around body parts, causing injury, entanglement, or suffocation. Sheets can also have frayed edges and should be monitored and thrown away when worn out. Also, be careful with browse; the size of the stick or branch could cause damage to another animal, keeper, or the security of the exhibit. Sometimes, when an animal receives enrichment, they are fine with it, and then one day they are not. Make sure to record what happens, regardless if it's a positive or negative interaction. Then, communicate that information to the other keepers in the area, so that they also understand that a certain enrichment item is not to be used at all or with a certain individual or group.

CONCLUSION

Safety measures are always being changed, modified, and improved. Certain individual animals have different reactions to certain keepers and this can have an impact on how things are conducted within an area. There will always be that one animal within a group that will not like a certain keeper, for whatever reason that may be. A great ape may throw a door for one keeper and not even touch it for another.

Safety measures are always being changed, modified, and improved.

Knowing which keeper you are can save you from injury. The one thing that is for certain, "well it hasn't ever happened with this group of animals" is never a safe statement. Just because it doesn't happen, doesn't mean it can't. Safety is all about preventing what can happen before it does happen.

Standard operating procedures and annual training should not be taken lightly. The safety of you as a keeper, your fellow keepers, contractors, and the animals in your care are all part of a larger safety picture. Always work safely and do not let complacency set in. That is what can cause mistakes to happen.

Establishing a Just Culture- How to hold systems accountable and accept imperfection

Danica Wolfe
AAZK Safety Committee

AAZK SAFETY COMMITTEE

Adaptability, time management, and the constant drive to provide the best lives for the animals in their care are all desired and admirable traits among the animal care community. For those that were in the field prior to 2020, and for those who have just joined it, there has been a noticeable emphasis on the adaptability required for this field as zoos and aquariums have learned to operate in the time of COVID-19.

What those adjustments look like varies greatly between institutions, but it's safe to say that one common factor has been the risk for increased stress in animal care professionals as they attempt to adjust to the "new normal" and pressures of operating in such an unpredictable and ever-changing environment. This field is among those that are already inherently high-stress. Even before a global pandemic, the animal care industry was constantly adapting as innovations in animal care emerged, and ensuring both optimal animal care and the safety of staff and guests has always been a high priority. Take these factors and add in the hectic world outside of work, and it's a lot for anyone to take on.

One of the main contributors to the stress of many animal care professionals is the danger that comes with the job. In some fields, a simple mistake might mean the loss of a client or a delayed e-mail. In the animal care field, even a simple mistake can result in a dangerous or potentially deadly outcome. As a result, it's not uncommon to see members of the animal care field double, triple, and sometimes quadruple checking their work behind them to make sure that everything is perfectly in place. Ask any animal care professional and they will probably admit they've had at least one or two nightmares about leaving locks or doors open. It's also not uncommon for people to videotape their locks behind them or develop obsessive tendencies with their lock checking procedure in hopes of not just preventing a potential danger, but also potential panic when they might question themselves later that evening.

Stress has been shown to have a negative impact on a person's health, both mental and physical. Research also consistently shows that stress doesn't contribute to higher performance; rather, it causes more mistakes. Standard operating procedures and similar policies help ensure operations run smoothly and mistakes are avoided as often as possible. They are put into place to keep animals and humans safe while accomplishing necessary goals and tasks throughout the day. These policies result in flawless execution with one caveat; they must be followed perfectly every single time by every single person in a perfect world.

There is nothing wrong with striving for perfection, but as humans we are incapable of perfection all of the time. Regardless of the effort put forward to avoid mistakes, the human brain will inevitably cause one. Researchers all over the globe have found that the brain fills in aspects of our environment and in some cases creates a sensation of seeing what we'd like to see. The brain has the capability of making this happen so quickly that in most cases a person won't have time to be conscious of the mistake. While intently focused on one large or important task (like finishing a routine on time, or making sure the tiger is secure inside its habitat), the brain often fills in the rest of the scene with images from your expectations. For animal care professionals, that can result in the brain sending you an image that a lock is locked when it isn't, or a shift door is closed when it's in fact open. Both are potentially very dangerous scenarios.

THE ROLE OF STANDARD OPERATING PROCEDURES

So, how is it that places like zoos are able to function safely? Many facilities require staff to regularly refresh themselves on standard operating procedures and safety manuals. Practice drills on various incident events also help prepare for emergencies. Fairly recently, several facilities have also moved to a two keeper or two lock system when caring for dangerous animals. The latter example is especially beneficial, as the chances of a mistake being made decreases when you have two people (brains) assessing the environment. The point is that policies exist and are required to be implemented to account for the failings of us as imperfect humans.

These protocols can't identify every possible scenario, and in a lot of cases animal care professionals have to quickly and effectively use their best judgment as they respond to unpredictable events. Policies and procedures need to adapt and change alongside animal husbandry. How do we identify flaws in the system or ways in which we can improve a procedure to increase its efficacy? The simple answer is to ask the people who are implementing the policies every day. However, the reality is a lot of animal care professionals are afraid to admit when they've made a mistake, as it can sometimes lead to repercussions and risking a job they've worked toward for so long.

The consequences that follow making a mistake vary greatly by facility. In some cases, a mistake is minor enough to warrant a simple verbal warning. In others, it can result in a formal write up that remains on your record during your entire tenure at the facility. Some facilities operate under the rules that all mistakes, regardless of their determined severity or outcome, receive the same disciplinary action. Admitting you're wrong is never fun, and working in a culture where even the smallest, most honest mistake can possibly be punished doesn't make it easier. Again, this doesn't negate the fact that the animal care field is different than a lot of others in that a simple mistake can sometimes have deadly consequences, but it isn't the only field with high stakes and lives on the line. Several other fields, such as aviation and medicine, have faced a similar dilemma of creating an environment in which employees are held accountable for their actions while still feeling empowered to participate in safety procedures in their workplace. How do we create an environment in which everyone wants to avoid mistakes but also admit when they happen to prevent their occurrence in the future?

IT'S ALL ABOUT ACCOUNTABILITY

The Just Culture model "ensures balanced accountability for both individuals and the organization responsible for designing and improving systems in the workplace" (Boysen, 2013). In this model, the events leading up to a mistake and the factors which may have caused it are carefully analyzed in a way that individuals feel empowered to discuss mistakes with their team and create changes in the system. This can prevent future mistakes from happening for both them and other staff members. In many cases, when a mistake is made or an error is addressed, the individual is typically punished in some way. Rarely does this alone actually solve the problem or address why it happened. The overall goal of the Just Culture model is to effectively manage the fine line of finding the balance between consequences and blamelessness. This model realizes that individuals can and do make errors, intentional or not, but sometimes the system is designed in a way that makes those errors more likely to occur. The overall motive of Just Culture is to seek out how and why mistakes are occurring, and what can be done by both the organization and individual to change it.

A Just Culture environment looks at overall human behavior in complex systems. Organizations that have implemented a Just Culture framework encourage employees to report mistakes, identify potential for errors, and recognize there is no such thing as being completely blame-free. It's important to recognize and acknowledge that even extremely qualified and competent people make mistakes. When a mistake is made, the way in which the problem is addressed and investigated puts focus on why it happened and how it can be prevented, regardless of if the outcome was severe

or not. Evaluating all errors in the same fashion cultivates an environment in which individuals feel comfortable reporting all of their errors regardless of their possible or actual outcome.

Ask the most senior and experienced animal care professionals and they might tell you they've made a mistake or two. Many, however, may not openly admit it for fear of retribution or decreased credibility, no matter the severity of the mistake. The fact of the matter is that obsessing over perfection could just lead to more mistakes. The goal of systems put into place should identify potential for human error and not require humans to be perfect to implement them. Rather, the goal should be for the system as a whole to work as well as possible knowing that human error can and will occur.

CREATING A JUST CULTURE

So, how do we begin to promote an environment that allows for honest, consistent, and open error communication? The first and most important step in creating a Just Culture environment is to make sure you have buy-in from all levels of your organization. In order for this system to work, everyone needs to be on the same page. This can be as simple as starting a conversation with your direct manager about safety procedures and how they are addressed within your department.

If you already have a great reporting system within your team, you've got one of the most important things out of the way! Talking about reporting within your team can be uncomfortable, but getting the conversation started and working towards improvement if needed could quite literally be the difference between life and death in the future.

Next, look at your standard operating procedures as a whole and the most frequent mistakes that are made. Discuss with your team and document to the best of your ability what the scenario was when these mistakes occurred. This will allow you to get a better idea of any common themes or environments that may be leading to the mistakes, and how procedures can be adjusted if needed. Being able to adapt to ever changing environments and situations is one of many skills animal care professionals are known for. That adaptability can and should be applied to operating procedures and overall animal care routines as well. The whole point of this system is to address how mistakes or events are currently handled and make adjustments if needed, just as you would in any other area of your daily operational procedures.

Employees still need to be held responsible for the quality of their actions. The Just Culture model "requires a shift in focus from errors and outcomes to the system design and management and behavioral choices of all employees" (Boysen, 2013). In this model, all mistakes must be addressed with the same process regardless of their severity or outcome (even if it had the potential to be dangerous). It is endlessly important to look at the 'why' and the 'how' regarding mistakes, and work towards ensuring they won't happen again to the best of your ability rather than steering in the direction of punishment right away.

JUST CULTURE IN THEORY

Picture a scenario in which you enter a dangerous animal area to find that the primary containment door between the animal and the keeper space is unlocked. The dangerous animal (let's say a pride of lions), is behind a secondary door between the habitat and holding space, and that door is locked. Following the procedures that are currently in place, the open lock is reported to a supervisor. Depending on what the current policy is at the facility, the severity of disciplinary action may range from a verbal warning because the animals were technically secure on habitat, all the way to a formal write-up or termination. The point of the Just Culture model isn't to completely change how your facility classifies what is severe and what isn't, it's to make

sure that all situations are reviewed the same way regardless of severity or outcome. Keepers need to feel comfortable reporting their errors when they occur, knowing that steps will be made to either help them prevent them from happening in the future or address why they occurred in the first place. This is a trickier component of Just Culture, as it forces everyone to get rid of their outcome bias. In this situation, the lions didn't enter the keeper space, but this error could lead them to entering it in the future if it continues to happen. The bigger picture here is that the lock being unlocked definitely matters (there could have been lions behind it!), but the choices that led up to that mistake are equally as important.

Next, the person who made the mistake and supervisors would go over why they think the mistake occurred. There is a difference between people making honest mistakes and those who are being reckless. The line between the two can sometimes be difficult to parse out, as some self-reporting cultures often create the opportunity for repeat individuals to hide beneath the current reporting system. At a point, honest mistakes, if coming from repeat offenders that have been given the opportunity to improve, can also be determined as reckless or negligent. What's really important is looking at the environment in which the mistake occurred, as sometimes even the most careful of staff can be let down by a system that has set them up to make a mistake.

For example, some things to consider when looking at the 'why' of how a mistake occurred are staffing and weather. Did three people call out that morning and everyone was rushing to get their work done on time for a donor tour that afternoon? Was a lock so frozen that when they initially tugged on it before leaving the area it appeared locked, but after a bit of a thaw it wasn't engaged? The reason for looking at the scenario as a whole is determining if there are flaws in the system that caused a mistake to occur, and looking at how they can be updated if needed to help them from happening again. This could mean extra staffing on special tour days or something as simple as providing tools and equipment during inclement weather.

If the system does not seem to have been a factor in the mistake, it's important to discuss with the keeper why they think the mistake occurred and then handle accordingly. While Just Culture works to improve the reporting system, it is by no means meant to create a blameless one. This requires picking out what behaviors are considered reckless and negligent (such as being over confident or not following protocols on purpose), and which are honest and genuine mistakes. The opportunity should then be taken to work with that employee and coach them on how the mistake can be prevented not just for them, but for everyone else in the future.

JUST CULTURE IN THE ANIMAL CARE WORLD

Zoos that have implemented a Just Culture system of reporting have found that investigations into how mistakes have occurred, rather than just punishing them for occurring, have greatly improved their safety cultures as a team and facility. Positive reinforcement is something we are all familiar with, and it works with people, too! Work to create a safe environment for self-reporting while reinforcing behavior that leads to a solution and support keepers emotionally and professionally when they do report themselves. If reporting yourself (or the uncomfortable scenario of reporting your teammates/friends) is supported by the facility in a way that encourages growth and solutions rather than immediate repercussions, the frequency of its occurrence is likely to increase and solutions can be reached. Do your best to move more towards an environment in which all members of the team feel comfortable speaking up and saying, "I found myself making this mistake, how can we make sure it doesn't happen again?". This opens up the floor for discussion regarding any system flaws that your team might not even realize are happening frequently because everyone is too afraid to talk about it for fear of looking like "they don't know what they're doing".

Achieving a Just Culture model will take adjustment and time, and will likely look different at each facility. Working as a team to improve the reporting system and overall safety model at your institution builds trust, camaraderie, teamwork, and increases your capacity for providing the best care for the animals at your facility. "Mindfulness throughout an organization considers, but moves beyond, events and occurrences. Everyone in the organization is continually learning, adjusting, and redesigning systems for safety and managing behavioral choices." (Boysen, 2013).

Don't be discouraged if your facility never gets to an exact Just Culture model. As mentioned, it takes time, adjustment, and cooperation from every level of the organization. However, you can still use Just Culture ideology to help improve the systems already in place at your facility. Start by initiating the conversation of moving towards an open and accepting environment where animal care professionals feel comfortable reporting their (inevitable) errors and work towards improving them.

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Playing it Safe- Enrichment safety for all species

Kathryn Juliano, AAZK Safety Committee Chair

INTRODUCTION

Enrichment is an important part of an animal's life and an animal keeper's job. Designed to improve quality of life, different types of animal enrichment can be implemented daily, including sensory, physical, environmental, dietary, and social enrichment. If enrichment isn't used as planned, then the results can be dangerous – animals in zoos and other animal facilities across the world have died from enrichment gone wrong. Enrichment dangers to animals include strangulation, entrapment, ingestion of harmful materials, disease, physical injuries, and emotional or mental distress, among others. To stop this from happening in the future, it's best to review real-life examples of these potential threats, examples from previous incidents, and ways to prevent similar accidents from occurring in the future. To protect the privacy of those involved, identifying details have been changed.

STRANGULATION AND ENTRAPMENT

More than a few physical enrichment items could pose dangers of strangulation or entrapment. Strangulation can occur when an item, such as a chain or rope, gets wrapped around an animal's throat and causes asphyxiation. For example, a small bird could be tangled in a string used to hang fruit, or a gibbon could get caught up in a rope net. In one real-life case, an armadillo was caught in the loop of a knot instead of the actual rope.

To avoid strangulation, keepers need to be attentive when using string, rope, chain, or other items to hold or suspend enrichment items. Limitations of the use of these materials is advisable when possible; for example, keepers should

use smaller lengths of rope that can't wrap around body parts. If possible, keepers should hang an enrichment item in a way that the animal can't reach the rope or string, and eliminate pinch points on these items whenever possible. PVC or other materials can be used to cover flexible materials that could cause strangulation.

Entrapment occurs when part of an animal is confined in an enrichment item. Entrapment can result in harm to a body part, suffocation, or overexertion that creates physiological imbalances and severe muscle damage, which is known as capture myopathy. This can happen in an instant. One example is a tiger getting its tooth stuck in a hole inside a plastic ball. Another real-life example was a meerkat getting stuck inside a heavy cardboard box after it flipped over, which prevented them from eating or drinking. Elephants and kudu have had toys like tires and balls stuck on their tusks and horns. Small primates have gotten their fingers stuck inside puzzle feeders, resulting in injured fingernails. In another scenario, a bobcat was tangled in a blanket and fell into a pool of water, causing it to drown to death.

Avoiding entrapment often requires keepers to assess holes and other openings. When using a toy with openings, gaps should either be very large to avoid entrapment or very small to prevent any body part from getting trapped inside. Consider the ages of the animals too – for example, a hole that accommodates a full-grown gorilla's arm could also be the perfect size for a baby gorilla's head. Inspect enrichment items like balls or feeders frequently for damage. Small holes or cracks could lead to entrapment in the future. When using a new toy or using an old toy with a different animal, monitor their interactions, and, when in doubt, remove the item before leaving the animal unobserved or unsupervised. When using older toys, inspect for damage before leaving it with the animal.

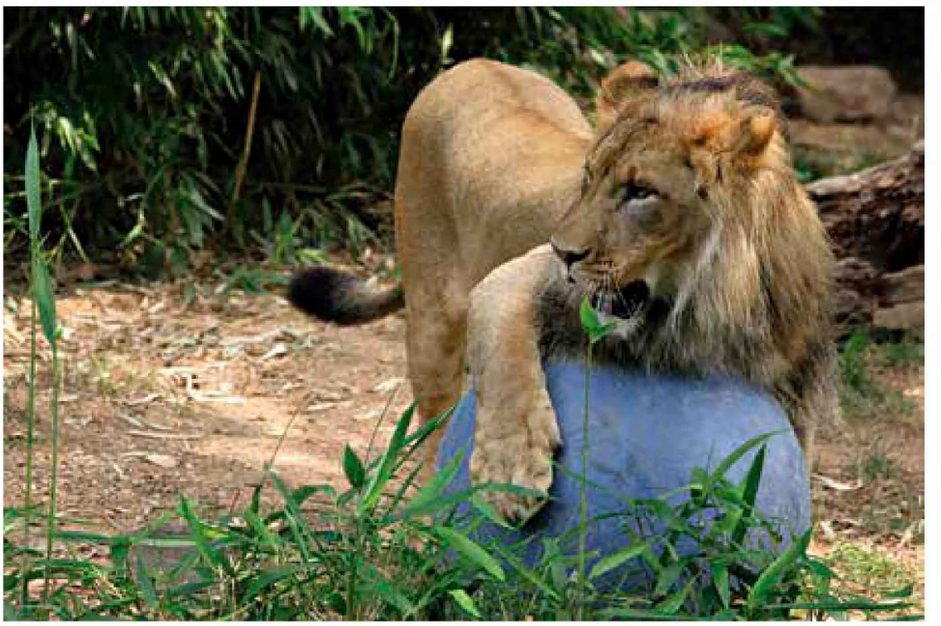
INGESTION OF HARMFUL MATERIALS

Many animals can consume non-food items, such as enrichment toys, which can result in dangerous intestinal obstructions or blockages. Eating or chewing certain items can also damage an animal's teeth or gums. Foreign objects can include plastic and rubber toys, fabric, cardboard, string, glue, or staples. For example, a serval has eaten pieces of a rubber toy that had been dabbed with scents and giraffes have unintentionally consumed hay bale strings. Orangutans have also eaten large amounts of cardboard and paper bags, resulting in blockages. Fish have consumed nuts and bolts used to hold together underwater feeders. A red panda once consumed a cardboard box that had glue in it, resulting in its jaw being stuck closed.

To prevent the consumption of foreign objects, monitor animals when presenting new items. Limit the amount or size of an item, like burlap or paper, or restrict usage to when keepers can provide supervision. Some animals may need to have item restrictions, which means that they only receive more durable toys instead of softer or more fragile items. Secure foreign objects whenever possible using locking nuts and bolts that are difficult for an animal to unscrew. Inspect dietary items for foreign bodies before offering to animals. Use larger toys that would be impossible for animals to ingest.

Approved dietary items can also pose a threat to animals if not properly presented. Hoofstock are susceptible to colic, rumenitis, and metabolic acidosis if they receive large quantities of a food item or moldy food. A bear once received a different type of bone that broke into large pieces, resulting in an intestinal blockage. Reptiles could face health issues if they consume sick rodents, and birds could face similar issues if they consume unhealthy insects.

Always inspect provided dietary enrichment for good quality. When in doubt, toss it out! Consult with others, like a nutritionist, SSP Coordinator, or other experienced keepers, to create an appropriate diet plan for the species. When using a different or new item, monitor the animal and potentially limit access to the item overnight, or when unsupervised.



DISEASE AND TOXIC MATERIALS

There are many materials and dietary enrichment items that can be toxic or poisonous for animals. Amphibians are especially susceptible to different substances because of their skin sensitivities. Bison, giraffe, and other hoofstock have died because they were unintentionally given a species of browse that is toxic.

Enrichment items can also serve as a fomite, or an item that carries a pathogen and can spread it to a new host. Toys can spread diseases between different animals if they are not correctly sanitized. Scent enrichment involving bedding material or even fecal matter from different animals can be very stimulating – for example, tigers love rolling in hay from goats. However, diseases can easily be spread this way. Materials like feathers from collection animals can also spread disease to a different animal or species.

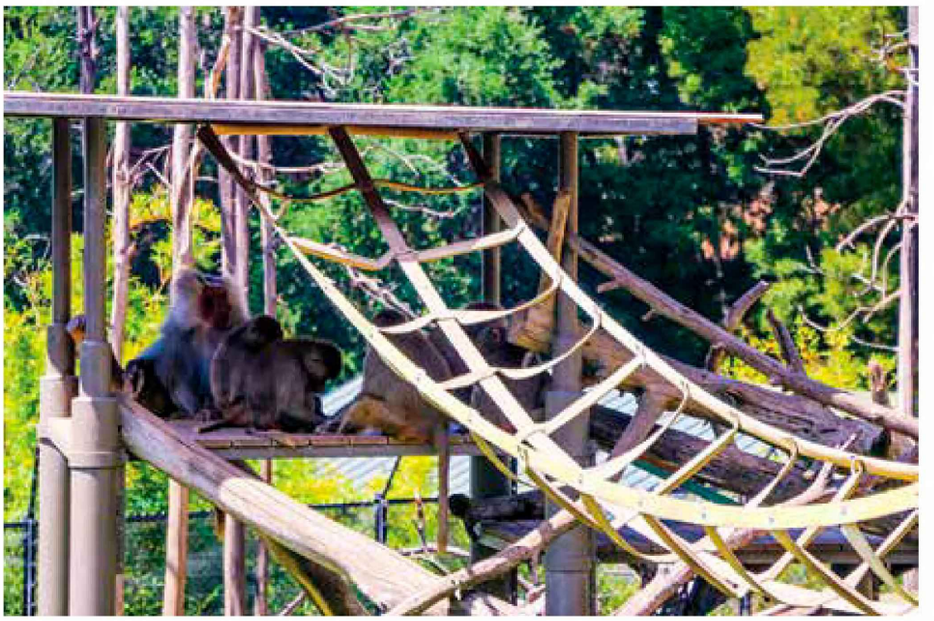
To prevent poisoning or harming animals, keepers should know all the contents of substances like perfume or scents. When in doubt, don't use it! Find a safe browse list or a toxic plant list and learn to recognize some safe browse species. When moving enrichment items between separated animals or species, always sanitize the item with soap or bleach. If possible, sanitize hay, feathers, or other materials in an autoclave before providing the materials to another species. Consult with a veterinarian before moving materials between species. Some diseases can't spread between different species, like birds and mammals, while other diseases will spread very easily.

PHYSICAL INJURIES

Enrichment items can sometimes result in physical harm to the animal or to others. Some items may be able to crush animals, resulting in broken limbs or in death. For example, an elephant once pushed a large ball over a younger elephant, resulting in physical harm. Birds have also been crushed when larger enrichment items have fallen after being improperly installed. Toys and other items can also cause lacerations to animals if they have sharp exposed edges. Broken boomer balls have sliced the paws of bobcats.

Toys and other items can also be used to harm other animals or humans, and in some examples to allow for animal escapes. There are multiple examples of animals like elephants, gorillas, and bears throwing ice blocks, tire toys, or rocks into crowds of visitors. For example, one orangutan would frequently use pieces of bamboo to attempt to hit keepers and a polar bear once threw a metal keg into exhibit glass, causing it to crack. At one zoo, bamboo that provided environmental enrichment drooped down after heavy snow, creating a ladder for a coati to escape.

To prevent enrichment from causing physical harm, always consider the size of the item in relation to the size of the animal. Items should either be too large to be lifted and moved easily, or too small to cause harm. Make sure items are properly installed and secured, and check for sharp edges, even on older enrichment items. Browse and bamboo can be cut into smaller pieces to prevent



its use as a means of escape, and the exhibit perimeter should always be checked, especially before or after a weather event.

EMOTIONAL OR MENTAL DISTRESS

Enrichment is used in zoos and aquariums to enhance an animal's life, but unfortunately, enrichment may occasionally cause some animals emotional or mental distress. All animals can have a fear of novel enrichment – some animals may panic immediately, while others will refuse to approach the item. Enrichment can sometimes cause problems in social groups. If there aren't enough items, fights may break out among primates, hoofstock, or social cats. Some animals may like to see other individuals as a form of social enrichment, but too much time may result in stress. For example, allowing a group of male lions to see a group of female lions could result in pacing, aggression, or fights.

To prevent distress, always monitor animals when using a new enrichment item. Have a plan to quickly remove the items if necessary. Limit time with the item without supervision until the animal is relaxed and comfortable. When providing items to a social group, ensure there are extra items and place items in a variety of areas to prevent hoarding. When introducing individuals for social enrichment, have a plan to separate them quickly and monitor the animals at first.

CONCLUSION

In most cases, different types of enrichment are a great tool for improving the lives of animals in zoos and aquariums. In some cases, enrichment can cause injury, harm, or even death. There are many ways to prevent accidents based on certain situations. Here are some general rules of thumb that can apply to every enrichment item:

- **Install and secure enrichment items and devices properly**
- **Test new items while supervising the animals, and have a plan to remove the items quickly**
- **When designing and implementing enrichment, include "safety" in enrichment evaluation**
- **Remember that young animals are a different size from their adult counterparts and can have different reactions to enrichment**
- **Monitor old enrichment items for damage and wear**
- **Animals can use old enrichment items in new ways or have a new reaction**
- **When sharing enrichment between animals, disinfect and sanitize**
- **When in doubt, don't!**

Finally, remember that accidents happen! Even the most meticulous keeper could do a perfect job of creating, installing, and testing safe enrichment and still have an accident occur. That's why it is important to share lessons learned – learning from each accident can prevent the same situation from occurring in the future. The zookeeping community should feel comfortable talking about these accidents, as each shared story helps prevent the accident from happening somewhere else.

How We Navigated Emotional Trauma on a Professional Level

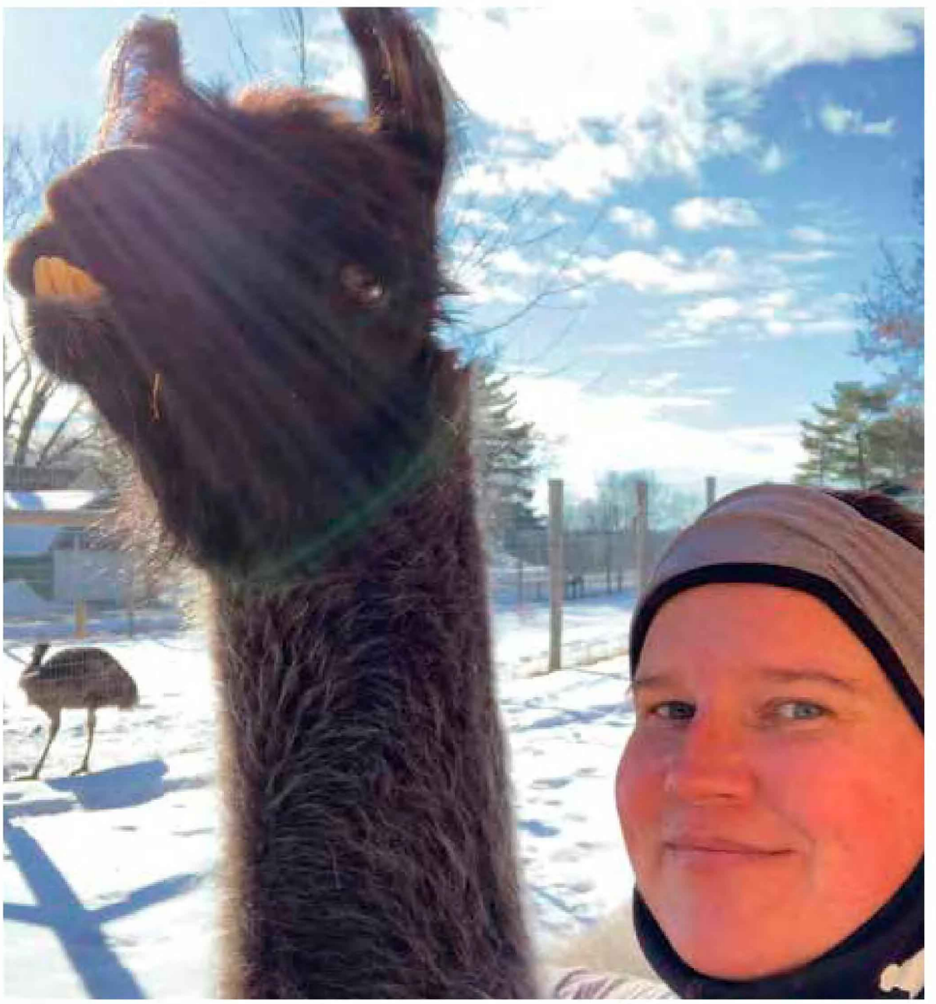
Margaret Worden, Ochsner Park Zoo
Kelly Murphy, North Carolina Zoo

PART ONE: MARGARET'S STORY

Mental Health. We have all heard that term before. We all know we need to be aware of our own. But do we really know how to keep our mental health… well… healthy?

BACKGROUND

I've been in the animal care field since I was a teenager. I started off at a vet clinic as a kennel attendant and then slowly moved up to vet tech. I had to get used to death pretty quickly. Whether an animal didn't survive surgery or had to be put down because of age; I was there to help with the process. There were times I cried, but usually I could say my goodbye and just know they were finally out of pain. Finally getting my dream job as a zookeeper, I noticed a shift in myself mentally. Working in a small clinic, I was presented with cases that were mainly accidents, poor animals that were subject to human error – mistakes. I am new to zookeeping – it has been a little over two years now. I work at a wonderful facility in Wisconsin. We are very small, so I end up taking care of all the animals we have. At other facilities I got to spend my whole day with reptiles



and the next day with just birds, but here I get to know each and every one of our residents. And for the first time I was presented with a situation that wasn't an accident, it was on purpose.

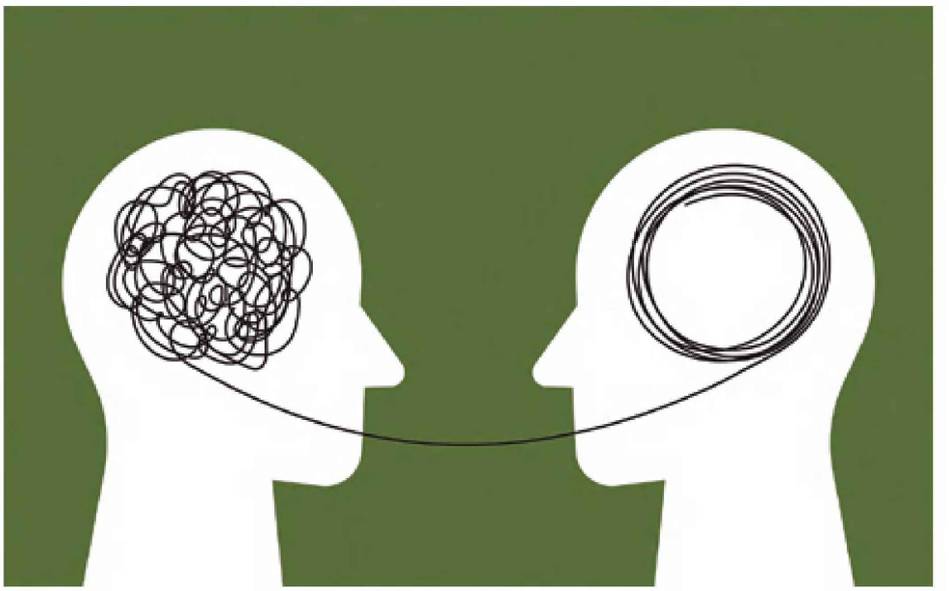
THE SITUATION

One day in June of 2021, a man walked through my very small, free zoo. I was the only keeper that day. I was in charge of the wellbeing of over 50 animals. The man exited the zoo and sat down on a short brick wall. He was steps away from the llama holding. Even though he was not on zoo grounds, he was in full view of everyone. He proceeded to take out a gun and take his own life. I was just walking out of our office with afternoon diets when I saw the ambulance and police roping off the street. At first, I thought a poor gentleman experienced heat stroke. I went over to the llama holding area to try to give them space. While watching paramedics do CPR, I noticed all the blood. This wasn't heat stroke. There was so much blood, I decided to close the zoo early.

I've never seen real CPR before. It's actually quite violent. I can still see how the body jolted when the paramedic pressed down on his chest. I watched them for such a long time. (Yes, thinking back, that probably wasn't a good idea.) I felt the need to leave and get eyes on all the animals. Is everyone safe and sound? Yes.

What if they weren't? These thoughts very easily slip into my brain.

A detective approached me and asked if I saw anything. I was in the kitchen preparing diets when I heard the shot. Honestly, I didn't even think that it was a gun sound. Our office/kitchen is a home that is over 100 years old, so I assumed that something heavy fell from a high shelf upstairs or in the basement. (Apparently it is easier for my mind to think the loud noise was from the haunted office then from a gun.) I slowly asked the detective what happened. Did I want to know? I don't know that answer. The detective uttered the words "self-inflicted gunshot wound".



Those words changed something in me. This wasn't an accident. Being alone, I didn't have anyone to lean on. My manager was on the phone with me the whole time, letting me know my decisions were perfect and I was handling everything professionally. But inside I wasn't. I ran into the goat barn, cuddled with the four dwarf goats and I let it all out. I cried and I cried hard. I took solace among the goats who were probably very confused by what I was doing. During this time, questions started to come up. Horrible questions… the 'what ifs'. What if he shot my animals before shooting himself? What if my llama got shot in the process? What stopped him from shooting the animals before himself? These thoughts are terrifying. I still get haunted by them.

THE DIFFERENCE

This is where the difference comes in. As a vet tech, I was able to separate myself. I didn't know this animal. I still felt sadness, but it was easy to say goodbye. As a zookeeper, I am in charge. I see these animals weekly. I feed them, medicate them, enrich them, and I love them. I talk about them all the time with my family. I'm constantly showing cute videos to people. So, thinking that they were in harms' way on that day destroyed me. I should be honest; it still destroys me.

The animals we take care of become much more than just animals. I have noticed that the zookeeping industry is filled with the most passionate people on the planet. We are fiercely protective and want the very best for all the animals we care for. Take any zookeeper's phone, and you might see more pictures of their animals than their own children. At least that is how it is on my phone! Being passionate usually is a positive thing, but in some scenarios it can be negative. Our passion can turn on us and make us feel the bad parts of the job. Death and illnesses can fill our minds and passion makes them grow.

TAKE TIME

I have always wanted a job where my absence wouldn't be felt by anyone else, and a day off just means a larger "to-do" pile on my desk. I quickly discovered that animal care was not that job. In this field, a day off means another coworker takes on my workload. No one wants to create a larger workload for someone else. BUT this is what occurs in this field, and guess what? IT'S OKAY. You can take that day off and it's okay. At the end of the week, month, and year it all evens out. We can't work seven days a week or over eight hours in a day. We get sick or we become in need of a break. And that is okay. We all understand, and we all need extra help sometimes. My current

zookeeping job is only part time. I was disappointed it wasn't full time, but with the obstacle of COVID-19, I was glad to get something. At Ochsner Park Zoo in Baraboo, Wisconsin, I am the weekend and holiday keeper. And I am very happy to be that! I usually get five days off in a row, which sounds amazing, right? Sure, but when I get sick and have to call in, the other two full-time keepers must rearrange their schedule and fill in. And I feel awful! I've ruined their weekend plans. But honestly, in the end, I sometimes go into work during the week to fill in as well. Like I said before, it all evens out in the end. We all feel awful, but IT'S OKAY. And with COVID-19 controlling everything, I would not be able to live with myself if I went to work sick and one of my animals got sick as the result.

I knew from the start I might not be able to go back to work the next week. I wrote an e-mail to my manager as soon as I could and explained. Yes, it was accepted, but it made me feel more terrible on top of everything else I was feeling. Fortunately, depression and I are old buddies. (I'm not afraid to admit that). I knew this would be bad if I just sat at home, stared at the wall and let my mind focus on the 'what ifs'. I immediately scheduled an appointment with my doctor. It was hard, but I knew I needed help right away. My doctor had me see a grief counselor. It was actually easy to reach out to a stranger and talk. This person wasn't going to judge me as a zookeeper.

LET THEM HELP

I finally reached out to zookeeper friends to talk about the above situation. I felt so stupid and weak because of how I felt. I thought if I were a real zookeeper, I wouldn't feel this way. My animals were safe, and no harm came to them. I should be able to just move on. I wasn't moving on and it wasn't until I spoke to other zookeepers that I realized what I was feeling was perfectly normal. Once I realized that, I felt I could get myself out of this dark hole.

Whether it's physically working with animals or at home thinking about them, we, as zookeepers, take care of our animals 24 hours a day. I truly believe we need to let them take care of us. Having a very busy day? A day of cleaning, sorting, feeding, all the chores, take five minutes and step back and watch your animal with an enrichment item. Don't make an observation to report, but to watch them and smile. Laugh like the visitors do! Let them make you smile and let that smile take over. I decided to focus on that. I went back to work, on schedule, and I got in a little early.

We all have our favorites, that animal you love to say hi to and to enrich! For me that animal is our resident llama, Sinbad. I like to think he likes me too. Even though I only work part time, he always comes over to me and greets me with a kiss on the cheek. I love it! He is also a great listener! So yes, the llama and I discussed what happened. We agreed that we had our time to be down, but enough was enough. The man who committed suicide next to the llama exhibit will no longer take any more of my time! And I now focus on taking 10 minutes out of my busy day to give Sinbad his neck scratches that he enjoys so much – and so do I!

PART TWO: KELLY'S PERSPECTIVE

I greatly appreciate Margaret's willingness to share her story. Going through something like that and coming out on the other side is difficult but being willing to discuss this is exceptionally brave. Talking about our feelings, our insecurities or mistakes, is scary and intimidating.

Answer this…

HOW MANY HOURS A DAY DO YOU SPEND WITH YOUR ANIMALS?

HOW MANY HOURS DO YOU SPEND WITH YOUR CO-WORKERS?

HOW MANY HOURS A DAY DO YOU SPEND WITH YOUR FAMILY/FRIENDS AT HOME?

As keepers, we can easily devote 8 to 10 hours or more at work. During that time, we dedicate time nurturing, enriching, training, creating a trusting bond, and pouring our emotional energy into the care of these animals. That is exhausting. Yep, I said it, EXHAUSTING! We have this unrealistic and self-imposed expectation to do our job without taking any type of break either emotionally or mentally. If we get hurt on the job, have a physical injury, or are physically ill with a cold/flu we rarely take the time off to get better. Neglecting our personal wellbeing takes a toll on us. We are in the habit of ignoring our needs, and trying to "walk it off," convincing ourselves that self-care is optional. This leaves us feeling exhausted, emotionally fatigued, and vulnerable to experiencing depression and other mental health issues.

2019 was a tough year for me. In July there was a fatality on grounds at the North Carolina Zoo, then in August one of our beloved keepers lost her battle with cancer. Those events sent me into a downward spiral. I couldn't and wouldn't acknowledge the loss. I kept pushing my emotions down and tried to ignore the fact that I was devastated. I was supposed to be the strong one and the one there for everyone else, but I wasn't dealing with my feelings of loss. Thankfully a very close friend cared enough to speak up and point out that I was NOT okay. He pointed out that if I cared about my co-workers and friends, and wanted to be there for them while they were dealing with the loss, then I needed to work on myself and get some help. It was the hardest thing to hear from someone I loved and respected, but it needed to be said and it was the lifeline that I so desperately needed.

#1 ADMITTING WHEN WE ARE NOT OKAY, EMOTIONALLY, MENTALLY OR BOTH, IS TERRIFYING!

The idea that we can "do it all" and just "keep going", isn't realistic. We need to start being truthful with ourselves, because it isn't realistic to think we can do it all. We need to give ourselves a break, letting go of the feelings of guilt and fear that we are going to let anyone down or cause more work or problems for others. This isn't about bailing on our responsibilities, but it is about being honest with people and starting the difficult conversations to let someone know that things are not okay. Find a way to let people know that you need some help. This may be asking for a safe place to talk, a couple of days off or just a shoulder to cry on.

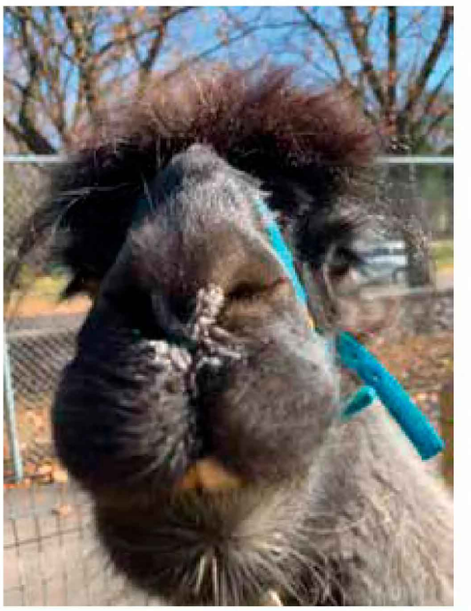
Every action in our life creates a reaction. When we take on more responsibility with our job, or when things change with our relationships, with family (spouse, children, parents, siblings, pets) friends, co-workers, the animals in our care. These things have a direct effect on us mentally and emotionally. Taking a moment to get your bearings and think about how various changes can or are affecting us gives us permission to adjust accordingly. Remember to respect and appreciate that each person may react very differently in various situations. We are all different and may process things completely differently. Refrain from comparing your grief, process, or emotional wellbeing with anyone else.

#2 ASKING FOR HELP AND SHOWING VULNERABILITY, TWICE AS TERRIFYING!

Some common thoughts that we may have during a difficult time: "this will pass", "I'm just being a baby/wimp", "this is NOTHING compared to _____", "I am too busy for this".

These thoughts while common, mean that we are acting just like our animals. In the wild animals mask their illness and injury. As keepers we are very attuned to these animals, and we KNOW something is not right.

We are positive we know something is going on, but we need some time to figure out what it is. Once we do, what do we do? We contact a co-worker, supervisor, or the vet to have them come take a look. Then we look for



confirmation "Am I right? There is something wrong, right?" We make sure that our animals get the best care possible and that our animals know we are there for them - no hesitation. Yet, when it comes to our self-care, we do not want to ask anyone for help. For whatever reason we think we should be okay and move on, but the truth is we don't expect our animals to do this, so why should we. Asking for help shows that we care about ourselves, our wellbeing, our co-workers, and our ANIMALS! We care enough to be the best that we can be. Let's be honest, shifting animals while not okay can be dangerous to ourselves and everyone on our team.

Why do we lose our voice when we most need it? Speaking up for ourselves and speaking out to our supervisor may feel scary, but it doesn't have to. People in leadership positions are there to supervise and to guide us through the tough decisions we may need to make. It is fair to say that some people in these positions may have more experience and therefore may be proactive resources, while other people in a similar position aren't comfortable with people reaching out to them. Not all of us have that kind of relationship with supervisors and that is understandable. We can always

TIPS FOR TALKING TO YOUR MENTAL HEALTH PROVIDER

Talk to your primary care provider

Prepare ahead of your visit

Bring a friend or relative

Be honest

Ask questions

Information provided by the National Institute of Mental Health NIMH.org.

reach out and try another supervisor that we feel comfortable with. Human Resources is another avenue to reach out to. Here is the reality of it… we need to find someone to be our advocate, for the times when we can't stand up for ourselves and can't get help. It may be a close friend or a co-worker. It can be anyone we can talk openly with and relate our feelings to. When we don't feel like we can discuss any of it with people at work, then we can try to reach out to a counselor or someone with professional training.

Our voice needs to be heard when things aren't going right, but how do we start the conversation? Identify the thoughts or feelings. Counselors call this **Name it to Tame** It. When we stay silent and don't give words to what we are feeling, these thoughts and emotions can take on a life of their own in our minds. It seems so much easier to say things inside our mind, but it gets locked into our mind, and we feel stuck.

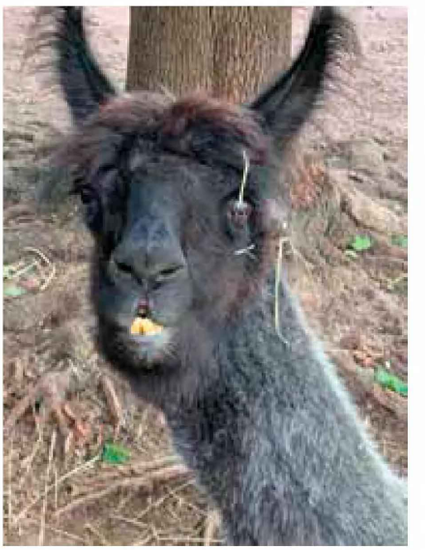
I was NOT the girl who talked about her "feelings" – nope, not even a little bit. However, I had to because I wanted to get better, and I wanted to be the best person I could be for my team, my animals, my family/friends, and for MYSELF. It took a lot of self-love and honesty on my part – with myself. Let me assure you – if I can do it, anyone can. I'm not the best at conveying my thoughts, emotions, and feelings to anyone let alone a professional or my friends and family.

#3 BEING HONEST ABOUT HOW YOU ARE FEELING

We need to be honest about how we are feeling – otherwise we are just lying to ourselves and to those around us.

#4 ONCE DOES NOT GET THE JOB DONE

When we clean, we all know that just scrubbing one time at a spot does not get it clean, sometimes we have to really dig in and clean like our lives depend on it. The same can be said for continuing mental health for ourselves. Think of



it as a required maintenance that you need – like a follow up exam for one of our animals after a procedure. It is never just a one and done. So, let's not make our mental health a one and done either.

#5 BE KIND TO YOURSELF

I cannot stress this enough. Self-love is one of hardest things to gift yourself, yet we as keepers love our animals and people in our lives with our whole hearts. Why not show some of that love to ourselves. We need to speak kindly to ourselves and be understanding of the time we may need to get back on our feet.

So, with all that being said – do you want to know a secret? None of this is new information. Those role models and mentors who we met when we started working as a keeper, yeah, those people - they faced the same exact things we are facing, felt the same things we are feeling and dealt with the same things we are dealing with. It is just NOW encouraged that people talk about it. The topic of mental/emotional health was so taboo for so long that everyone seems to think it is a "new" issue now. But that is just not true. We are just pulling it out of the dark and shining the brightest light we can on it. To make it

not feel taboo anymore and making sure that everyone knows that talking about and admitting it - is okay!

Let me clarify something really quick for all of you still with me. I am not a professional psychiatrist. I am not a professional counselor. I am in no way a professional when it comes to mental and emotional health. I am just someone who lived through her own version of an "emotional spiral" and came out on the other side – with the help of professionals, friends, family, co-workers, animals, and some self-love. I came out of it stronger, wiser, and a little more self-aware. I am not going to say healed, because I am still a work in progress. I will say this – I am not healed, but I am more forgiving of myself, a lot kinder to myself and I smile a lot more than I did.

I would like to close this with a statement that I made at the AZA 2021 Mid-Year Conference. It was regarding mental health, and I had been asked to explain why mental health is such a huge passion project for me. After giving my statement I closed with this, and I feel it is still relevant.

"We, as human beings, live our lives on the edge of chaos and order; constantly trying to maintain that balance. When a traumatic event happens, all that order is thrown into utter chaos, and we find ourselves just trying not to drown in all of it. Asking for help is always so damn hard for everyone, yet we just need to remember that there are life preservers all around us, and we just need to reach out and grab one."

Commissary Safety - A team effort

Theresa Plass
Happy Hollow Park & Zoo

Most zookeepers enter the field with a focus on a particular species, group of species, or conservation of those species, and, therefore, it's not uncommon to find commissary duties ranked on the low end of preferred work duties with some avoiding the commissary altogether. However, the commissary is a vital component to any zoological institution by directly feeding the animals on-site and indirectly contributing to the conservation of their wild counterparts. As such, the commissary deserves as much respect as any other animal care routine. Whether the commissary duties are shared among various staff members in a smaller facility or has a dedicated staff in a larger facility, everyone should be aware of the inherit safety issues to ensure a safe environment for both the animals and staff.

FOOD INSPECTION AND STORAGE

First and foremost is the food itself. All food shipments must be thoroughly inspected before storing or feeding out. Produce should be checked for signs of freshness: bruises, cuts in peels and shells, wilted greens, mold, etc. While not all these items need to be immediately thrown out, they are indicators of which items should be used first and ought to be stored accordingly. All produce should be rinsed with water prior to feeding out to minimize dirt, bacteria, or chemicals that were sprayed during growing, but avoid using soaps or cleaners that may leave a residue. When to rinse the produce is another important consideration – some produce should be rinsed prior to storage, others stay fresh longer if rinsing is done directly prior to use. Canned goods and other shelf-stable products should be checked for any signs of damage including bulging, leaking, dents, or foul odor which could be signs of botulism. Frozen meat should be inspected for signs it may have previously been thawed and refrozen including water buildup, slimy wrappings, brown meat, or foul odors. While it is recommended to rinse produce, the USDA does not recommend rinsing meat products as this has been linked with more cross-contamination possibilities (*Washing Food*, n.d.). The AZA Nutrition Advisory Group provides more in-depth guidelines for handling fish and meat on their website (*AZA Nutrition Advisory Group*, n.d.). Being up-to-date on current food recalls is also an essential step in ensuring your food deliveries are safe to feed to the animals. Once the food has been inspected and deemed appropriate for use, it must be stored appropriately. A good rule of thumb is "first in, first out" which means whatever item has been stored the longest, regardless of storage location, should be the first item used when preparing meals. This prevents food from spoiling before it can be used and eliminates the possibility of accidentally feeding out expired food. Pay close attention to all expiration dates when storing foods and ensure upcoming dates are at the front where they are easiest to access, and more distant expiration dates are in the back. All food items should always be properly covered and labeled with a description and expiration and/or opening date to avoid confusion and facilitate proper communication. Food items intended for the animals should have their own dedicated storage and refrigeration and should never be stored with human food, chemicals, or biohazardous materials. Meat products should always be stored below produce items to prevent potential cross-contamination. Storing meat products in a secondary container is also advised to catch any accidental leakage. Perishable items

must be put in the refrigerator within two hours. This is reduced to one hour if the temperatures rise above 90 degrees. Raw meat must be used or frozen within one to two days. Temperatures are important: items in the refrigerator should be kept below 40°F, while items in the freezer need to be below 0°F. Keep a secondary temperature gauge handy to ensure accurate temperatures. In all likelihood, every facility is working with some form of frozen food item. Proper care should be taken to ensure safe practices for thawing these items. Allowing food to thaw in the refrigerator is the safest method. Thawing in the microwave or in a watertight plastic bag submerged in cold water are also safe options. Items that have been thawed in the refrigerator can be refrozen, while items thawed in the microwave or cold water need to be cooked prior to refreezing. Leaving the frozen food out on the counter to thaw is never an option as bacteria grows rapidly at room temperature leaving your food at risk for contamination. Keeping in mind proper storage is particularly important with regards to the size of facility. Delivering the food from the commissary to the animals may require coolers for transport, smaller refrigerators in remote areas, and an understanding of the appropriate timeframe for feeding out the food. Don't forget to consider those above 90-degree temperature days and plan your transport routes accordingly.

APPLIANCE MAINTENANCE AND SAFETY

Refrigerators, freezers, and transport coolers are not the only appliances found in the commissary. Other common appliances include microwaves, blenders, dishwashers, hot plates, can openers, and more. A working knowledge of the appliances in your commissary is a crucial step in creating a safe working environment. Simple tips to keep in mind include lifting pot lids away from your face (and being mindful when opening dishwasher doors); keep cords away from water sources (and do not plug in/out with wet hands); unplug hot plates, knife sharpeners, and blenders when not in use; and use self-closing drawers (or, if not possible, do not leave cabinets and doors open). Personal attire can also have a big impact on safety including wearing non-slip shoes, avoiding loose clothing or jewelry near open flames, and being cautious with radio cords around pot handles. Using pot holders when boiling eggs or meat on the hot plate and cut gloves for work with sharp knives is recommended. Knife safety is of utmost importance in the zoo commissary. Learn to use the right knife for the right job. Sharp knives prevent overexertion while dull knives lead to

1. WET

2. LATHER

3. SCRUB

4. RINSE

5. DRY

more slips and resultant cuts. Securing the cutting board in some fashion, including by simply placing a wet washcloth underneath, is also a great idea. Remember to slice in the direction away from your hand. Consider using a mandolin with a hand guard, but don't forget to leave the ends of the food unsliced. Storage and placement of knives is also essential. Use a knife block; don't store knives loose in a drawer. Never place a knife handle near the edge of the counter, do not run with knives in hand, and don't leave them in the sink in a pile of dirty dishes.

Daily safety reminders in the commissioning are important, but don't forget monthly and other as needed inspections. Inspect all appliance cords for fraying and replace immediately. Use GFCI outlets near sinks and other wet conditions and consider using cover plates. Know where the nearest smoke detectors and fire extinguishers are located and replace batteries and check the charge on extinguishers regularly. Be aware of the different types of extinguishers and understand when it is appropriate to use them e.g., grease fires versus electrical fires. Don't forget food that has been exposed to flames, smoke, or the chemicals used to put out a fire are now contaminated and should not be fed out. In the case of power outages, generators can be quite handy in the commissary. If generators are not in place to run automatically, be sure to have easy access to your generator and that the fuel source has not expired. Keeping refrigerator and freezer doors shut during a power outage can prevent drastic changes in temperature. Items in the refrigerator are still safe for up to four hours, while food in the freezer can be safe for one to two days depending on how items are packed. Ice and gel packs may be added to the refrigerator to maintain a temperature below 40°F ensuring the safety of the food for longer periods. Don't be tempted to store items in the snow. Outdoor temperatures fluctuate too much, but homemade ice packs to put in the refrigerator or freezer can be a suitable alternative. Another emergency situational reminder: food that has come into contact with floodwaters is now contaminated with unknown bacteria and should be thrown out.

The previously mentioned secondary temperature gauges are especially important in emergency situations.

Of course, every zookeeper is especially adept at cleaning, but don't forget the safety implications in the commissary. Hand washing is particularly important to prevent contamination, especially after restroom use or handling an animal. Using paper towels can reduce residue on towels contaminating a recently cleaned surface. Be sure to frequently wash any towel used in the commissary. Regularly wiping down counters and sinks will also reduce the risk of accidental contamination. Mopping and properly drying floors not only prevents bacterial growth on the floor but minimizes the possibility of slipping. With all this sanitation comes cleaning chemicals. Don't forget your chemical safety practices: use proper personal protection equipment as appropriate; store each chemical according to MSDS requirements including proper labeling; and never store chemicals above food items.

With so much going on throughout the zoo and within the commissary, it can be easy to put safety on the back burner. While the USDA's Kitchen Companion is intended for human use, much, if not all, can be applied to the zoo commissary as well (USDA, n.d.). Advice from supervisors, senior staff, and the AAZK Safety Committee is always available. Safety is a team effort and the best way to provide for a great work environment and overall care for the animals.

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