News from the Ambassador Animal SAG

Starting the Conversation:
Trending Topics in Ambassador Animals

Ambassadors in Action:
The “Path” to Stardom for a Pair of Pelicans

Ambassadors in Action Part Two:
The Shark Cart

Research Corner:
Transport Protocol Study for Ectothermic Species Used in Outreach Programming at Akron Zoo

Show and Tail:
Working with a Mother-Reared Ambassador Serval

Species Spotlight:
Serval
A Note from the Chair
I’m very excited and humbled to serve as the new chair of the AASAG. I have been serving as the vice-chair of the SAG since its inception in 2013, and have been so impressed at the work that the team has accomplished in just a few short years. I look forward to working closely with the Steering Committee as we move forward with ensuring that the ambassador animals in our collections have the highest standards of care and welfare, and that our visitors have amazing experiences with them.

Katie Manion
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The Maryland Zoo in Baltimore
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The AASAG Strategic Framework
The work of the AASAG is guided by a strategic framework consisting of four primary initiatives. Each initiative includes a number of key activities and ongoing strategies, led and supported by members of the Steering Committee. If you are interested in helping with any of these initiatives, contact me at the email address below, or consider joining the steering committee. Watch for posted vacancies on the AZA website.

Initiative #1: Best Practices
Objective: Establish and disseminate best practices for the care and welfare of ambassador animals.

Initiative #2: Sustainable Collections
Objective: Facilitate collaboration with AZA animal programs (SSPs, TAGs & Studbooks) to enhance sustainability of populations for both breeding and educational program use.

Initiative #3: Support Research
Objective: Support research around ambassador animal related topics, including welfare and the impact of ambassador animal messaging. Assist in communicating the results of this research within the AZA community.

Initiative #4: Ambassador Animal Course
Objective: Provide support for the Principles of Program Animal Management Course by reviewing curriculum and assisting in program evaluation.

AASAG Annual Meeting
The Ambassador Animal SAG will be conducting a business meeting open to all from 2 to 4 PM on Saturday, September 9. The Steering Committee will meet in a closed session from 1 to 2 PM. We hope to see many of you in Indianapolis!
The practice of handling, presenting, and caring for Ambassador Animals is constantly evolving. What were once common practices 10 or 20 years ago often no longer meet the standards of care and education that we strive for today. This progression seems to be moving at a much faster rate as of late, with an increase in communication between institutions, investment in research, and growing expertise of Ambassador Animal handlers in principles relating to animal behavior, training, and effective messaging.

As the Ambassador Animal community continues to grow and change, learning from one another and sharing successes have become crucial components of progress. The AASAG aims to be a forum for those working with Ambassador Animals across AZA, connecting professionals to share stories, ask questions, and have conversations that can lead to new standards of care, areas for research, or even spark debate. There are many topics specific to Ambassador Animals that can be considered controversial and different philosophies and strongly held opinions exist between institutions and even sometimes at the individual level.

The AASAG would like to facilitate the exploration of these topics in a safe, non-judgmental, open forum that presents differing viewpoints and encourages healthy debate. In that vein, we would like to introduce a new section to the newsletter that allows for different opinions on a particular topic to be presented. We envision that the discussions started here could be continued on the AZA Network with members sharing additional perspectives and the personal successes and failures that have shaped your point of view.

The aim of this section is not to criticize the practices or philosophies of others, but rather to start a conversation and perhaps facilitate understanding of an opposing point of view. For many, if not all, of these types of topics, there is no rigorous scientific research or hard evidence that supports one perspective over another. There is often no “right” answer, successes or failures are typically related to an individual animal, and blanket “always” or “never” statements may not be appropriate. The views and opinions expressed in this feature are not endorsed or representative of the AASAG or AZA. We hope that by inviting you all to share stories and personal experiences related to a specific topic, we can open minds to alternative practices and viewpoints that may not have been previously considered, move toward a greater mutual understanding, and advance our standards of care and welfare as an industry.

So, if the idea of this new section appeals to you, we would love your help! We would like to focus on a single topic in each issue, and we already have some in mind:

- The use of jesses on non-raptors
- Unpaid staff (volunteers) handling and caring for ambassador animals
- Acquiring animals from AZA facilities or private breeders
- Public contact with ambassador animals, which species are used and why

If you have any additional ideas for topics of discussion, please e-mail them to Bonnie or Tanya (contact below). You don’t need to offer an opinion on an issue to suggest it for the newsletter; it might just be a topic that you would like more information on. For the next issue of the AASAG newsletter, we will be focusing on the topic of imprinted versus parent-reared owls participating in programs. We are looking for submissions of short (500-800 word) pieces that cover all sides of the issue. If you have a personal experience or perspective you would like to share regarding this topic, please contact us at the addresses below. Please note we are looking for pieces written from your perspective, whether they outline successes or challenges, and not commentary on practices merely observed at other institutions.

We look forward to facilitating discussions about these issues that are important to our field, and hope you will find this section valuable to your programs.

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Ambassadors in Action
The “Path” to Stardom for a Pair of Pelicans
(Originally presented at IMATA 2016 conference)

The Process
In October 2013, the Oregon Coast Aquarium adopted two non-releasable California Brown Pelicans (Pelecanus occidentalis) from a local rehabilitation facility, with the lofty goal of training them to be ambassador animals. Our plan was to build them a behind the scenes enclosure and train them to come out onto grounds to meet the public.

Being wild birds, we were starting from scratch, first desensitizing the birds to our presence, working up to hand feeding, and then to station and target training. From there we began basic management and fun behaviors.

As the relationships grew between the birds and their trainers the focus was turned toward the program’s primary goal: public presentations! The first hurdle was actually getting them to the presentation area, and our first solution was the “Peli-Cab”. This required getting the birds comfortable with walking into a clear-sided cart and riding in it for several minutes down a somewhat bumpy road. The biggest challenge with this was if the bird got stressed at any point in the trip, we would have to get back home before letting them out of the cart, and it often resulted in taking several training steps backward to build up the birds’ confidence again.

The literal breakthrough happened when the aquarium was able to create a pathway directly from the pelican enclosure to the presentation area! Within a week of the “pelican path” completion the birds were able to follow us down the short distance, right onto a small presentation stage!

From there the birds quickly became comfortable with the new space, being heavily reinforced by their trainers for choosing to be on stage and still offering the choice to leave for home whenever they needed to. By the time summer crowds were in full swing, the pelicans were too, and made daily scheduled appearances, awing guests, as ambassadors for their amazing species!
The Message
To get consistent and effective messaging out to the public, the education and aviculture departments created an Interpretation Plan (IP) for the Pelican Presentations. This was delivered by an aviculturist or educator while an aviculturist worked with the birds on stage. The IP is designed to get the guests to Know, Feel, and Do. “Knowing” includes: understanding our high quality of animal care, benefits to training animals, basic natural history, a current threat to wild pelicans, and an action they could take to help reduce this threat. “Feeling” includes: expressing awe/wonder at the pelican’s abilities, feeling respect for the Aquarium’s pelican care, feeling satisfied by participating in a unique experience, feeling inspired to help pelicans “like Wren”. “Doing” includes both experiential and behavior goals, including participating in presentation by: asking/answering questions, touching props, and applauding when asked, and changing their behavior after leaving the aquarium by: noticing pelicans while visiting the coast, disposing of broken/used fishing line/gear when fishing or when found on beach.

When delivering presentations, we utilize various interpretive techniques to engage the guests. Props include: a stuffed pelican (weighted to match a real bird), photos of the pelican enclosure and pelican plunge diving, fishing line and recycle bin, and training tools. During presentations the audience is encouraged to participate by asking them questions, encouraging them to ask questions, and asking them to applaud the birds. Storytelling is utilized when explaining JoJo and Wren’s individual histories, pelican natural histories, and interpreting the training sessions. Finally, analogies are used to help describe particular behavioral or physical traits, as well as interpreting training sessions.

The Response
Due to the enthusiastic response from the public, in October 2015 the aquarium built a larger presentation stage that allowed room for signage and additional space for the birds and trainers. For the summer of 2016, we added a 2nd presentation to the daily schedule increasing opportunity for guests to “meet” the pelicans.

The response from the public was very positive, with 100 - 200 guests regularly attending each of the daily presentations. Observable reactions included audience eye contact with the presenter, audience participation, verbal “ooohs and ahhhs” when watching the birds, and interactions with the staff after presentations (asking questions, looking at props, expressing gratitude for the presentation / awe of the pelicans).

Moving forward to the summer of 2017, we have a couple of additions to the program in mind. The first is developing a “pre-presentation” activity to begin engaging the waiting and arriving guests. The second is developing a “post-presentation” activity that would allow us to get quantitative data to evaluate the effectiveness of our presentations. By regularly re-evaluating the program we hope to effectively reach even more visitors with our messages of animal appreciation and respect, and ocean conservation.

CJ McCarty
Curator of Birds
Oregon Coast Aquarium
“This is the greatest day of my life!” exclaimed one 3rd grader from an inner-city school in Cincinnati. “I’ve never felt saltwater before today!” yelled a 6th grader from a rural, coal mining area of southern Kentucky. These are the reactions that the WAVE Foundation at Newport Aquarium has been getting on a daily basis since the inception of the Shark Cart in July of 2015. WAVE Foundation is an independent 501C3 tax exempt non-profit organization working in partnership with Newport Aquarium. WAVE and Newport Aquarium work in strategic parallel to drive WAVE’s mission of exciting, engaging and educating our community about the wonders of aquatic life and the importance of conservation to nearly 1 million Newport Aquarium visitors and to hundreds of thousands regional community members annually.

The Shark Cart has educated and inspired over 75,000 people! This one-of-a-kind program allows us to take sharks out into the community. We travel to schools, libraries, senior centers, day care facilities, and community events inspiring our community to save these amazing animals.

“This was a dream of mine a few years ago,” states Conservation Education Curator, Dan Dunlap. “I wanted to be able to take these incredible animals out into the community so that many others could experience the sensation of not only learning about sharks, but touching them as well. Sharks have such bad reputations and now we can educate people
about these misunderstood animals and their conservation.” For the first 18 months, WAVE had three epaulette shark animal ambassadors (Rocky, Apollo, and Clubber) that traveled all over the midwest. Dunlap said the sharks were named after the “Rocky” movies because these sharks are fighters. “Since this was an entirely new program, we learned a lot in the first few months of its existence. There wasn’t a manual on how to transport sharks from their home tank to a classroom or library. We had to plan and prepare, while being extremely flexible and learning as we went.”

Due to the success of the Shark Cart program, we have added six coral cat sharks along with four new epaulette sharks. Rocky, Apollo, and Clubber, our three original sharks, are now retired and living out their lives in the comfort of the Newport Aquarium.

Besides the joy of seeing thousands of people learning about and touching sharks for the first time, the highlight of the Shark Cart was being invited to the AZA Congressional Reception at the Rayburn House in Congress last May. This was a huge moment for the WAVE Foundation, as we were recognized for having this unique program. The politicians definitely enjoyed meeting our animal ambassadors. I think our sharks had a great time spending the night in our hotel room in Washington D.C. Our programmatic philosophy of the Education Department at WAVE is to ‘Think BIG’, and the development and implementation of our carts into the community is something we are very proud of. WAVE Foundation is also happy to announce that since the Shark Cart was such an overwhelming success, we have recently added a one of a kind Sting Ray touch cart for 2017. Our new Sting Ray cart is booked solid for the next five months. WAVE is definitely hitting their mission of exciting, engaging, and educating our community about the wonders of aquatic life and the importance of conservation!

Dan Dunlap
Conservation Education Curator
WAVE Foundation at Newport Aquarium

Research Corner
The Akron Zoo Animal Ambassador collection houses 18 different species of ectothermic animals, including various reptiles, amphibians, and terrestrial invertebrates. These animals participate in programming both on and off grounds. While temperature levels in the animals’ holdings are carefully monitored and adjusted by keepers on a daily basis, the environment provided to these animals during transport away from the zoo has not been established within scientific guidelines as compared with current husbandry practices.

The Winter 2016 AASAG newsletter published the research article Evaluation of Thermal Regimes for Transported Ambassador Ectotherms: One Size Does Not Fit All (Sasha J. Tetzlaff, Kristin E. Tetzlaff, Richard J. Connors II). This research project was a collaboration between the Department of Biology and Environmental Resources Center at Indiana-Purdue University and the Fort Wayne Children’s Zoo. It was the publication of this article in the AASAG newsletter that inspired an evaluation of the transport protocols for Akron Zoo’s ambassador ectotherms.

When ambassador ectotherms travel away from the zoo, they are transported in an insulated cooler retrofitted with ventilation holes in the lid (photo 1). The exceptions are two large Dumeril’s ground boas and a green iguana, which due to their size, travel in large, non-insulated, ventilated storage totes (photo 2). Coolers/totes are placed into a pre-heated vehicle when necessary. Squamates and chelonians are placed freely in the cooler/tote, while amphibians and terrestrial invertebrates are placed inside a Kritter Keeper™ within the cooler. Substrates used in the coolers for squamates/chelonians are varied and include towels, fleece blankets, newspaper, and straw, depending on preference of staff and individual animal. Amphibians/invertebrates are either placed on a dampened paper towel or a small amount of substrate from their holding. If outside temperature is below the established approved temperature guidelines, then a SnuggleSafe™ heat disc is also placed in the cooler (photos 3 and 4). The disc has historically been heated for 3 minutes in the microwave, placed in a pillowcase or wrapped in newspaper, and put to one side of the cooler so a freely placed animal can choose to be on the disc or not. Different species have different approved minimum temperatures for travel without a heat disc and outdoor use, as well as basking temperatures. These values can be seen in Table 1.

<table>
<thead>
<tr>
<th>Species</th>
<th>Minimum temperature for travel without heat disc/outdoor use °F</th>
<th>Optimum basking temperature range in animal holding space °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box Turtle</td>
<td>50</td>
<td>85-90</td>
</tr>
<tr>
<td>All Snakes, Bearded Dragons, Indian Star Tortoise</td>
<td>65</td>
<td>Ball python 90-95, Corn snake 85-90, Dumeril’s ground boa 85-100, Pueblan milk snake 85-90, Puerto Rican boa 85-95, Bearded dragon 100-120, Star tortoise 90-120</td>
</tr>
<tr>
<td>Invertebrates (Hissing Cockroach, Giant African Milliped, Chilean Rose-hair Tarantula)</td>
<td>65</td>
<td>NA</td>
</tr>
<tr>
<td>Green Iguana, Leopard Gecko</td>
<td>70</td>
<td>Iguana 95-105, Leopard gecko 85-90</td>
</tr>
<tr>
<td>Amphibians (Dart Frogs, Cane Toad)</td>
<td>70</td>
<td>NA</td>
</tr>
<tr>
<td>Prehensile-Tail Skink, Savannah Monitor, Uromastyx</td>
<td>75</td>
<td>Skink 85-90, Monitor 105-120, Uromastyx 115-130</td>
</tr>
</tbody>
</table>

Table 1. Minimum temperature for travel without a heat disc/outdoor use, as well as optimum basking temperature range for each species of ambassador ectotherm.
These temperatures are established by our veterinary staff, and though the travel/outdoor use temperatures are lower than the optimum ambient temperature ranges maintained within the animals’ holdings, they are deemed safe for short-term exposure during travel. Stephanie Miner, Behavioral Husbandry Manager at Akron Zoo, helped create the specific questions that this study addresses in order to evaluate the appropriateness of the above described protocol for the individual ectothermic species used in outreach programming. The study was designed to answer questions regarding both the heat discs and coolers in use:

**Heat Disc Questions**
1. Do different heat discs reach different temperatures with the same microwave time?
2. Do different heat discs hold a consistent temperature for the same amount of time?
3. How much does the temperature of a heat disc change with increased microwave time?
4. What is the appropriate amount of time to heat a heat disc to reach the correct contact temperature?

**Cooler Questions**
1. Does a cooler without a heat disc keep a consistent temperature over time?
2. Does a cooler with a heat disc keep a consistent temperature over time?
3. How long does each size cooler with 1 heat disc hold the correct temperature?
4. How does temperature vary between the air temperature and basking temperature within the cooler?
5. Do the air and basking temperatures stay consistent over time?

**Testing Heat Discs**
To answer questions 1 and 2, the 12 discs in use were microwaved for 2 minutes, at which point it was determined that they each reached the same approximate temperature range. Temperatures were taken using a Milwaukee™ infrared temperature gun to scan the discs for low and high temperatures at 5 minute intervals for 15 minutes. Throughout all trials of the study, discs were wrapped in a pillowcase during temperature scanning. After 15 minutes, the discs generally ranged from 80-100°F. It was noticed that the temperature of each disc rose with each 5 minute interval in the initial 15 minute test, so further testing was done for longer periods of time to determine the point where temperature stopped increasing. Further testing showed that, in general, discs reached their peak temperature 15-20 minutes after microwaving, and then slowly started to cool down after 30-40 minutes. With this testing, it was determined that all of the heat discs reached similar temperatures with the same microwave time, and they all held a similar consistent temperature for the same amount of time. Based on the results from Questions 1 and 2, we felt comfortable using only one disc to help answer the remaining questions. Therefore, for Questions 3 and 4, the same disc was microwaved for different amounts of time and disc temperatures were taken after 15 minutes with the following results (Table 2).

<table>
<thead>
<tr>
<th>Microwave time</th>
<th>Temperature range after 15 minutes °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 minutes</td>
<td>78-94</td>
</tr>
<tr>
<td>3 minutes</td>
<td>83-103</td>
</tr>
<tr>
<td>4 minutes</td>
<td>95-120</td>
</tr>
<tr>
<td>5 minutes</td>
<td>87-138</td>
</tr>
</tbody>
</table>

**Table 2.** Microwave time and temperature range (coolest and hottest location on disc) after 15 minutes.

Based on these results, we determined that the appropriate amount of time for a disc to be microwaved for most species was 3 minutes. This is the microwave time that was used for the next phase of the study.

**Testing Cooler/Totes**
The next phase of the study involved testing temperature consistency within the various sized coolers used to transport animals. To answer Questions 1 thru 5, a test cooler and a control cooler of the same size were tested. No heat disc was placed in the control cooler. The same heat disc was used in all trials of this phase (three trials for each cooler size), microwaved for 3 minutes, and placed to one side of the test cooler. In order to test for changes in ambient temperature within the coolers, a temperature data logger (Thermochron iButton model DS1921G) was placed on the non-heat disc side of the test cooler, as well as the corresponding side of the control cooler (photo 5). This is the same logger used in the Fort Wayne Children's Zoo study. Both control and test coolers were brought from the “hotroom” holding area, which houses the zoo’s ectothermic ambassadors and is where the coolers are stored (when not in use), to the education office which served as the test site. Room temperature in the hotroom is generally 77-80°F, while the temperature in the education office fluctuates...
greatly with season. This was seen to have an impact on several of the starting ambient temperatures because sometimes the coolers were left in the education office between trials and sometimes they were returned to the hotroom. The test period for this phase was 3 hours, at the end of which time the temperature range of the heat disc was scanned and changes in ambient temperature were downloaded and reviewed from the data logger. The first cooler tested was a 25 quart (22.2” x 13.6” x 8.2”) Coleman™ party stacker cooler, which is the smallest transport cooler in use. Results are reported in Table 3.

<table>
<thead>
<tr>
<th>Trial</th>
<th>Disc temperature range °F</th>
<th>Ambient temperature °F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start (immediately out of microwave)</td>
<td>End (after 3 hours in cooler)</td>
</tr>
<tr>
<td>Trial 1 (both coolers in test site to begin)</td>
<td>75-97</td>
<td>75-90</td>
</tr>
<tr>
<td>Trial 2 (coolers brought from hotroom to test site)</td>
<td>74-90</td>
<td>80-90</td>
</tr>
<tr>
<td>Trial 3 (coolers brought from hotroom to test site)</td>
<td>77-96</td>
<td>80-91</td>
</tr>
</tbody>
</table>

Table 3. Disc temperature range and ambient cooler temperature for trials using a 25 quart Coleman™ party stacker cooler

Based on these 3 trials, the disc microwave time of 3 minutes (determined in previous questions) provided an appropriate basking site temperature for most of the ambassador reptiles, as well as providing an acceptable ambient temperature range within the transport cooler over time. Identical trials were conducted on coolers of larger sizes with similar results (Figure 4).

<table>
<thead>
<tr>
<th>Cooler size</th>
<th>Average disc temperature range °F</th>
<th>Average ambient temperature range °F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Starting temp</td>
<td>Ending temp</td>
</tr>
<tr>
<td>33 quart Coleman™ party stacker (22.1” x 13.4” x 11.8”)</td>
<td>74-98</td>
<td>77-92</td>
</tr>
<tr>
<td>48 quart Coleman™ (26” x 14” x 14.5”)</td>
<td>74-97</td>
<td>77-93</td>
</tr>
</tbody>
</table>

Table 4. The average disc and ambient temperature range (three trials) for the remaining coolers.

Testing of larger coolers indicated that both disc and ambient temperatures were able to be maintained at a slightly higher value compared with the smaller cooler, a result that was also demonstrated in Fort Wayne Children’s Zoo study.

Similar to the findings of the Fort Wayne study, these results did not meet established temperature guidelines for the uromastyx lizard. Additionally, the results also did not meet the minimum ambient travel temperature of 75°F for the savannah monitor and prehensile-tail skink. Using the same testing protocol, one trial has been completed on the 25 quart Coleman™ party stacker cooler using a heat disc microwaved for 4 minutes. This change increased both the ending disc temperature range to 77-96°F (compared with an average of 78-90°F in previous trials) and ending ambient temperature in the test cooler to 74°F (compared with an average of 71.2°F in previous trials). More trials are needed to determine if a microwave time of 4 minutes
is indeed appropriate for these species. Based on those results, microwave time may be further increased or an additional heat disc may be added.

Three trials have been completed on the non-insulated storage tote used to transport the green iguana. Typically, 2 heat discs are used when transporting this animal due to the larger size of the tote. When each disc was microwaved for 3 minutes, the average disc temperature range after 3 hours was 77-93°F. As expected due to the lack of insulation, no increase in ambient temperature between the test and control tote was observed. Further testing is planned for this transport tote, but likely a different, larger heat source will be necessary to meet the travel temperature requirements for this animal, as well as for the large Dumeril’s ground boas.

Results thus far confirm that the previously established protocol of microwaving a heat disc for three minutes prior to travel is appropriate for the majority of our ectotherm species. Additionally, the current design of transport coolers is appropriate for maintaining ambient and basking temperatures for programming that falls within a 3 hour time frame, which the majority of our outreach programs do.

This study is still currently in process. Further testing is planned to accommodate other variables such as longer testing time in the cooler (maximum allotted time for an animal to be away from its home enclosure is 5 hours), using multiple heat discs in a cooler, using different coverings (pillowcase, newspaper, fleece cover provided by SnuggleSafe™) on the heated disc, and testing how different substrates (towel, fleece, straw, etc.) used in a cooler affect ambient temperature.

Akron Zoo would like to extend appreciation to Indiana-Purdue University and Fort Wayne Children’s Zoo for bringing this subject into the light, and for assisting with additional details of their study when we started out on this journey. The AASAG newsletter is a forum not only for inspiration, but also collaboration. Every institution has access to resources that, when put together with the knowledge at large, can serve to improve the safety and welfare of the animals in our care.

Debra Swank  
Education Specialist  
Akron Zoo  
d.swank@akronzoo.org
The relationship between a trainer and an animal ambassador is a key element of a successful ambassador program and allows much of the operant conditioning we rely on to take place. Since this relationship is so important, animal ambassadors have traditionally been hand raised by their human caretakers. While zoological institutions have dedicated much research and expertise to refining hand rearing techniques, many have questioned if welfare could be improved by mother-rearing ambassador animals.

African servals are a common felid seen in ambassador programs and one where a positive relationship is imperative for the safety of the handler as well as zoo guests. San Diego Zoo has a long history of working with ambassador servals. We are able to shape behaviours through direct physical contact and provide a sense of confidence and security to the cats through the trainer-animal relationship. But we were curious: How would allowing a carnivore to be mother-reared impact our training programs and the cat’s suitability to work safely as a program animal?

In May 2015, 1.1 serval kittens were born at the San Diego Zoo and it was decided that they would be raised with the intent of becoming animal ambassadors. But rather than moving the kittens to the zoo’s nursery they would remain with their mother while a team of animal care staff began the process of co-rearing. We had experience with co-rearing a singleton kitten from the same mother, and learned valuable lessons that we could apply in this situation and refine the process even further. Visits began when the kittens were just 12 days old and were only a few minutes long, just enough time for us to pick them up and sit for a minute. During these sessions, their mother would be asked to move to another holding area for a high value treat, and she allowed visits most days. As the kittens grew we began to initiate play with a variety of cat toys and were able to hold their interest in us up to about 45 minutes. At about 2 months of age, we began twice daily visits and as the kittens became interested in solid foods, we were able to further build a positive relationship with them. Although their mother would still save some of her food for them the majority of their meat consumption came during the trainers visits where we worked on bridge conditioning and name recognition. By the time the kittens were three months old it was becoming increasingly obvious that the female, whom we had named Mkali, was not nearly as interested in our interactions as was her brother, Cheka. We decided to focus our efforts on Cheka and began training him to enter a crate and be moved around. These sessions eventually allowed us to transport him across the zoo for daily daycare with the Children’s Zoo team. Once he was weaned at about 6 months of age he made the move to the Children’s Zoo permanently to begin his training to become an ambassador serval in earnest.

Working with Cheka is very different than working with a hand-reared cat. Despite being handled from such a young age he still moved away from human contact (we later conditioned him to a “touch” cue which we generalized all over his body) and sees his trainers more as food dispensers than companions. Bridge conditioning and a strong training foundation are vital since we cannot rely on our relationship to help us. Many of the behaviours Cheka has learned were captured and then shaped since we could not do any physical manipulation. Cheka is, however, one of the most confident cats I have ever worked with. He is
keyed in to his surroundings and adapts to new situations easily. This can be a blessing and a curse! He has never paused coming out of his crate in a new area, he doesn’t need any reassurances, and new experiences such as video cameras, crowds or props do not faze him at all. On the flip side because he is so tuned into his environment and does not rely on trainers for confidence or direction he has a habit of zoning into one particular environmental variable and it can be very difficult to regain his attention and focus. Training is always in competition with squirrels, or people talking, or shadows, or really anything other than us! Since is so content to sit and take in his surroundings, Cheka often pays little attention to his trainers. As a result, training sessions with Cheka are much more structured than with our other serval. There is not much down time in a session so his appearances often do not last as long as other cats’.

Despite the challenge of keeping Cheka engaged, working with him has been a great experience. Everything he does is deliberate and his energy levels are generally low when he is with us. He is offered choice and control over his participation in a session by asking him to jump up on a stump and sit while the collar is put on. Should he not want to come out he can refuse to go to the station, although he never has. Since he is much less forgiving that a hand raised cat, working with him has helped his trainers to become more precise and creative. At one and a half years old he has settled into his role as an ambassador for his species. He holds behaviours better than most hand raised cats I have worked with and relies on a terminal bridge for communication. He now will move about to different pieces of furniture when asked, sit, target, and come when asked, and walks well on the leash. He is learning to jump on cue, will climb a tree on cue, and is learning an open mouth. He voluntarily enters a squeeze crate and allows himself to be positioned for vaccinations without any protest. As trainers we still have to try and stay one step ahead of him on the direction of a session but he always exhibits a calm demeanor and is a good learner.

Friends and colleagues working at different facilities will ask what I prefer; hand raised or mother raised? There is no clear answer since it has been such a different experience! While I am sure that every trainer would miss the affection that comes with a mother raised cat, Cheka’s attitude and confidence leads me to believe that there are some lessons only a mother can teach.

Kym Janke
Lead Keeper
San Diego Zoo
Servals (*Leptailurus serval*) are easily recognizable as the cats with ears too big for their bodies. The ears are no joke, allowing servals to hear the wing beat of a bird flying overhead, or rodents scurrying underground or in the thick grasses of the savanna. While their habitat ranges over half the continent of Africa, they are most common in South Africa and they are listed by International Union for Conservation of Nature (IUCN) as a species of least concern.

Servals are medium sized cats, weighing about 30-40 lbs and standing two feet tall at the shoulder. They have the longest legs for their body size of any cat, allowing them to easily leap high in the air or dig quickly to find prey. Servals have the highest success rate at hunting when compared to their feline cousins, catching prey approximately 50% of the time. They are generalists and prey on whatever they can catch, using a wait and pounce technique that differs from the long chases typically utilized by other African cats. Their wild diet includes rodents, birds, insects, reptiles, frogs and fish. In managed care they can be fed beef, rodents, fish, chicken (preferably cooked), and even some enriching treats like bone, hard boiled eggs, bloodsicles, and pinkies.

While servals are typically found in grasslands, they are good climbers and like to perch up high. As they are incredible jumpers and notorious diggers, containment is critical for this species. Enclosures can vary widely, but consideration should be given to ensure they have access to natural substrates and a dynamic habitat, such as rocky outcrops, horizontal branches and platforms that work like a cat walk. A variety of plants and substrates are also important, as they love to hide in bushes or stalk in grass. Offering piles of hay with enrichment or beds of mulch to lie in will also give servals many options to choose from. Some individuals might be prone to ingesting enrichment, so offering lots of variety early and often may help limit consumption of novel items. Always watch the cats and follow safety guidelines for enrichment.

Like all felids, servals are highly intelligent and can be raised as excellent ambassador animals. Training servals for education works best when started from a young age and they are exposed to a lot of human interaction. Training of kittens may be started while they are still with their mothers, as young as 2 weeks old. Allowing for the combination of mother-reared servals that are regularly exposed to keepers results in better welfare, more confident cats, and may contribute to future goals of working with the Serval Species Survival Plan (SSP) for sustainable populations.

Ambassador servals can present guests with a unique opportunity to see an exotic cat up close, as they are able to be worked safely by a variety of trainers and in close proximity to people. Safety considerations should always be a priority and proper training through operant conditioning is a must. Demonstrating natural behaviors
and working off leash (when safe) reinforces the idea that servals are not pets; they are wild animals trained by professionals to help inspire visitors and promote conservation messages. Training husbandry behaviors with servals is also a priority. Blood draws from the hind leg or front leg with proper safety considerations allows veterinarians to monitor kidney and liver functions, which are especially important for aging cats.

Servals have been designated as a yellow SSP and are associated with the Felid TAG. There is concern for the SSP about the high degree of unknown pedigreed animals in the population due to imports from the private sector lacking documentation of genetic origin. If you are looking to add a serval to your education programs, the AASAG encourages you to contact the SSP Program Leader Dan Dembiec, Supervisor of Mammals at Jacksonville Zoo and Gardens. Before committing to adding a serval as an ambassador to your program, be sure to also assess the skill level of proposed handlers and consider the resources available to appropriately house and train these complex, highly intelligent animals.

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