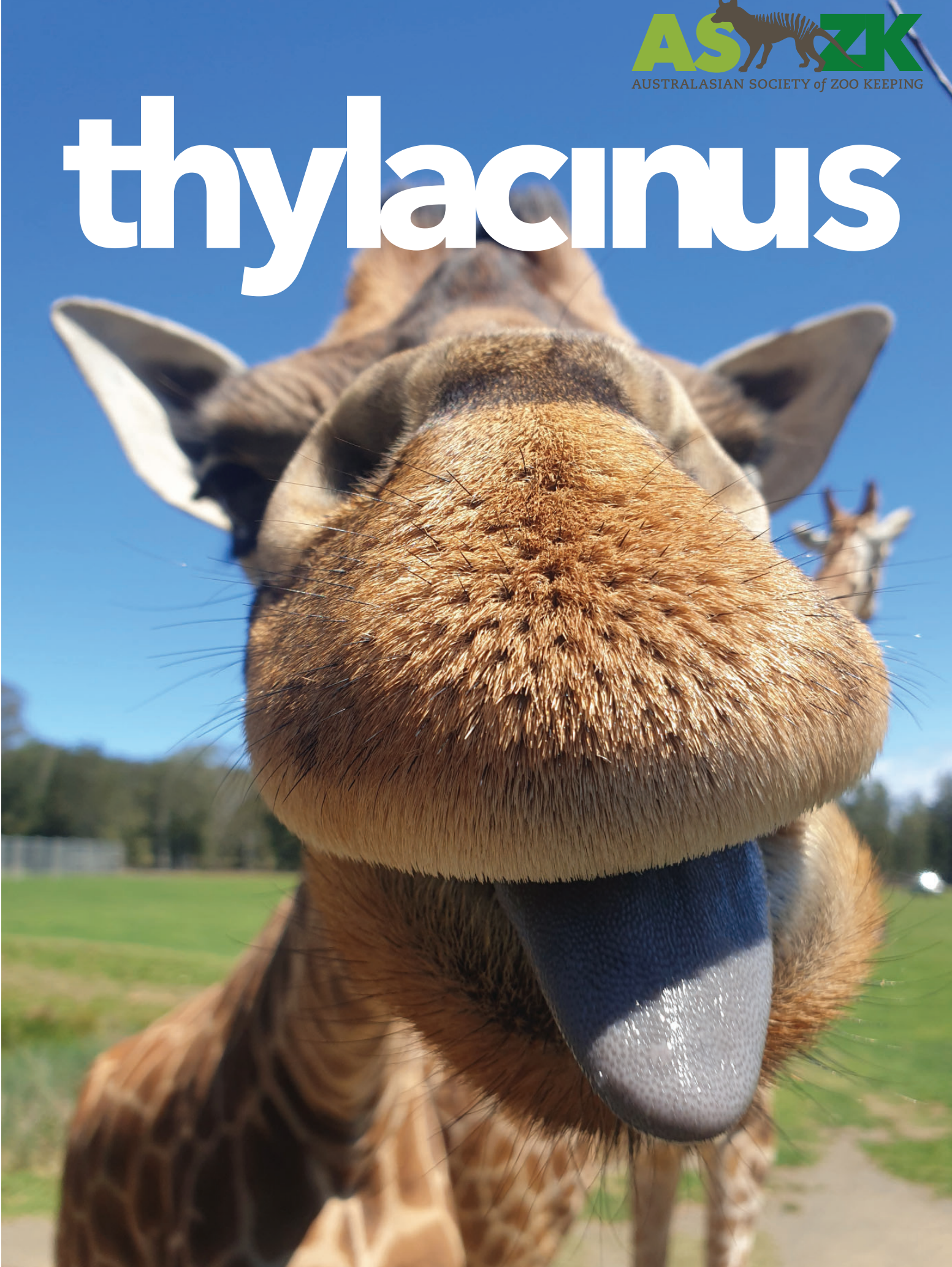


thylacinus



Cover photo: Giraffe Up Close.
Credit: Philippa Blum

EDITORS

Liz Romer ASZK

PROOFING EDITORS

Carla Srb and Chris Dryburgh

LAYOUT AND TYPE-SETTING

Liz Romer ASZK

Opinions expressed in this publication are those of the authors and are not necessarily those of the editors or ASZK.

COPYRIGHT

Australasian Society for Zoo Keeping

ADDRESS ENQUIRIES TO:

Australasian Society of Zoo Keeping
PO Box 4059
Lalor Park, NSW 2147

WEBSITE

<http://www.aszk.org.au>

COMMITTEE MEMBERS 2019-2021

Acting President

CHRIS DRYBURGH

Taronga Zoo

Membership Officer

CAROLINE DALY

WILDLIFE Sydney Zoo

Treasurer and international

Liaison

JOCELYN HOCKLEY

NSW TAFE/Sydney Zoo

Secretary

ANDREW DALY

Taronga Zoo

International Liaison

LIZ ROMER

ASZK

ASZK Committee

RICHARD ROSWELL, Rockhampton Zoo

KAREN JAMES, Taronga Western Plains Zoo

EMMA BEMBRICK, Taronga Zoo

JOANNE THOMAS, Wellington Zoo

MELVIN NATHAN, Melbourne Zoo

STEPHEN DALLEYWATER, Wild Cat Conservation Centre

DANIEL RUMSEY, Australian Reptile Park

LISA TUTHILL, Moonlit Sanctuary

JO WALKER, Taronga Zoo

SIMON HUSHER, Sydney Zoo



FROM THE PRESIDENT

Chris Dryburgh

It's hard to start these addresses without having to take a focus on the ever-changing COVID situation, impacting everyone across our Region. Encouragingly though, the latest reports and modelling seem to indicate a little more control over some of the hot spots, and no drastic decline in other parts of Australia and New Zealand. Fingers crossed that with everyone continuing to observe best practice hygiene and social distancing, that our communities can proceed working towards a cautious and staggered return to as "normal" as we can hope for. State Governments and Prime Ministers across our Region are managing their individual paths into a safe and manageable summer period, and it's important that we all remain diligent and aware of the risks that summer socials could create, and to observe the actions of our own state health advice.

With that out of the way, I'm very pleased to report that The ASZK delivered an efficient Annual General Meeting in August. This AGM was our first, held in the format of a Zoom Meeting, which we are all becoming a lot more accustomed to. The meeting was well-attended, with a broad representation of our industry, with Members dialling in from across Australia and New Zealand, and from a vast array of animal care institutions. The Committee would love to thank all who took the time to attend and contribute to this meeting. While it may be considered by some as a formality, it also presents a great opportunity to raise any thoughts or suggestions directly to the Committee, and to engage with the direction and future of the Society. While this year's AGM did not land on the biennial Committee elections, nor were there any proposed changes to the ASZK Constitution for Member votes, the meeting allowed us to report on the financials of the Society, and upcoming proposals and goals.

At the start of 2020, we opened up our annual Wildlife Photography Competition with entrant categories including Zoo & Aquarium Animals, Animals in the Wild, and Habitats, and the Judging Panel are now in the final stages of creating a short-list of finalists in each category, upon which we will engage the ASZK Community to cast votes via social media. So jump onto the ASZK Facebook page and cast your votes for your favourite finalist today!!

The International Congress of Zookeepers (ICZ), have again announced the approach of International Zookeepers Day, October 4th. With all that has been going on this year, and with how hard we have all worked to care for our animals, there are plenty of ways in which we can take some time on or around Sunday October 4th, to hold a COVID-responsible celebration to tip the hat to the dedicated and passionate aquarists and keepers across our zoos and aquaria! Share your photos with us across Facebook and Instagram!

Happy International Zookeepers Day 2020!

contents

NO. 3 • 2020

Breeding of Sumatran Tigers at Taronga Zoo	3
Dingo Puppies Spark Joy in Unprecedented Times	8
Kangaroo Island Dunnart Conservation	9
Bandicoots Enjoying Life on a New Island Paradise	10
ICZ Keeper Conservation Grant	13
Behaviour Matters : 8 Ideas to help you train for duration	14
ASZK New Members.....	16
The “forgotten” bear, the Sun Bear, in Sumatra.....	17
Zoo News	20
Meet an ASZK Member	31
Coming out of her Shell.....	33
Masks for Sunbears.....	34



TO SUBSCRIBE TO *THYLACINUS*:

Join ASZK

Full individual members - A\$70

Associate individual members - A\$70

**Please enquire for details
on institutional memberships.**

All membership enquiries to:

ASZK

**PO Box 4059, Lalor Park, NSW
Australia 2147**

or visit <http://www.aszk.org.au>





BREEDING OF SUMATRAN TIGERS AT TARONGA ZOO

Louise Ginman, Unit Supervisor Carnivores, Deb Price, Senior Keeper Carnivores, Taronga Conservation Society Australia.

Sumatran tigers are critically endangered, with less than 400 left in the wild of which there are less than 50 breeding pairs. Zoo's efforts in breeding this species, and learning and sharing the knowledge developed, is a critical contribution to their survival. To date, Taronga has bred over 30 Sumatran tigers over the past 30 years. This is almost 10% of the wild population. During this time our expertise in introductions, successful mothering and raising of cubs has increased. Keepers were presented with a new challenge for the most recent breeding as it took place in the brand new Tiger Trek facility that opened in 2017.

This paper will focus on the introduction process, from the initial meeting of the tigers to introductions and matings, determining pregnancy non-invasively, setting up a disturbance free maternal environment and supporting the mother to care for her cubs, followed by socialisation and cub development to share our learnings and knowledge developed for others in our industry.

Introduction

The Sumatran Tiger is a critically endangered species with fewer than 400 left in the wild. The critically endangered status indicates that there are only around 50 breeding pairs left in Sumatra. In this light, saving this species involves coordinated efforts from zoos and government agencies. Pressures in the wild would need to be alleviated to aid in their recovery. Sadly, the tiger's Sumatran forest habitat has been cleared for primarily unsustainable palm oil plantations. Other threats to tigers include poaching for medicinal purposes and habitat loss for human settlement and agriculture.

Taronga Zoo have been involved in the captive breeding of Sumatran tigers since at least 1975. During that time, 43 Sumatran tigers have been housed at Taronga Zoo, 36 of whom were born at Taronga Zoo. Between 1975 and 2010 there have been 15 neonatal deaths of which four were confirmed still born. Since 2010, there have been no neonatal deaths. Over the years, the Carnivore team has increased their expertise in the introduction and successful breeding of this species and have had only a single incidence of mismothering of one cub in the past 25 years despite most of the breedings occurring with first time mothers. Successful breeding does not happen by chance but instead through carefully planning every step of the process from selection of breeding pairs, care during pregnancy, maternity area selection and preparation, followed by a disturbance free birth and mother rearing protocol. The final stages of the project include raising behaviourally healthy cubs that will themselves play a crucial role in the breeding program in the future as well as being ambassadors for their species.

Pair Selection

Initial pair selection generally begins with the species coordinator recommending pairings based on a range of factors including maintaining or increasing genetic diversity, decreasing the level of inbreeding and breeding highest ranked individuals over those with lower mean kinship scores. While it is vital to genetically match tigers for breeding, the behavioural health of the recommended individuals must also be taken into close consideration as tigers who do not possess social skills may not be able to be successfully introduced to another tiger or could be a potential threat to the other tiger's life at worst. Deaths of cats can occur when introductions are rushed or the tigers to be introduced have had limited social contact with other tigers.

The Carnivore team at Taronga Zoo developed a behavioural checklist tool to assist in the selection of behaviourally and physically healthy Sumatran tigers to be paired for breeding. The checklist assesses key behaviours and indicators that a socially and behaviourally healthy individual should possess. The checklist examines whether the tiger was parent or hand reared, had contact with sire, lived with mixed sexed siblings for at least 2 years, had been placed on contraceptives, had previously successfully been introduced or bred, how long the cat had lived alone, how the cat interacted with keepers as well as other health, reproductive or anything that may affect display potential.

The checklist rates the importance of each behavioural or physical indicator and provides a description of why the behaviour/indicator is significant. The ideal tiger to be

introduced to an opposite sex cat is one that was mother reared and stayed with the mother until dispersal age or longer, had access to their father, (where full physical contact is not possible, mesh contact is preferred) has lived continuously with opposite sex siblings for at least two years and has not lived alone for more than six months prior to initial introduction (which can be mesh to mesh contact), has not been placed on contraceptives prior to sexual maturity or if placed on contraceptives after three years of age has not been implanted more than twice, that the cat was/is under eight years of age at first reproduction. Interactions with mother, father and siblings should be within the normal range of tiger social interactions with a strong focus on affiliative behaviours versus agonistic behaviours.

Oestrus detection and introductions of pairs

Introductions of tigers are only undertaken when the female is in oestrus. Initially the tigers may show agonistic behaviours toward each other (lunging, growling, hissing, snarling) therefore close contact initially is not always recommended. Ideally, the tigers should have visual barriers and be spatially separated until they are more familiar with each other. Taronga Zoo uses scent crossover between the tigers to begin the familiarisation process. This involves rotating the tigers through exhibits and holding areas so that they become familiar with each other's scent. After several days, weeks or months as determined by the individual pair of tigers, they will have visual access but still spatially separated (i.e. an empty holding den between them). Once the cats are comfortable to be in each others presence, mesh to mesh contact begins and then continues daily noting all behaviours occurring between the cats so that oestrus can be accurately detected. An oestrus check sheet is used so that all affiliative behaviours can be charted leading to a clearer (and visual) indication of oestrus. Increase in frequency and intensity of signs such as mutual chuffing, calling, cheek rubbing the mesh, female rolling and contact vocalisations are strong predictors of oestrus.

Once oestrus has been determined and the cats are showing positive signs to each other, the introduction is planned. Often introductions will not be done during the first oestrus but instead based on the date of the first oestrus subsequent oestrus can be calculated and the introduction planned to ensure appropriately experienced staff can/will be present. All introductions are conducted within the indoor holding area. The areas are either sprayed with Feliway or have a Feliway diffuser in use. Three keepers are present for all introductions to ensure the safety of the cats at all time. Keepers are assigned roles prior to the start of the introduction so that everyone is



clear on their role in the event of an animal emergency. Only the keepers that both cats are comfortable with are able to be present at introductions so that the cats do not fixate on those they are not comfortable or familiar with. In the event of an emergency one keeper is assigned to use keys for slides, another to man the high pressure water hose and the third to use the fire extinguisher. The most experienced keeper should operate the slides and give instructions to the other two staff if or when needed.

Introductions are always done at the animals pace and never to our own agendas. If one or both cats have not bred before, they will likely need several mating attempts before a successful mating occurs. Successful matings occur when the female is correctly positioned with her tail to the side. The male may scruff the female or repeatedly mouth the back of her neck. The male vocalises when ejaculation has occurred and only when this vocal is heard can it be deemed an actual mating. At Taronga, to ensure the cats are given space, they are briefly separated after each mating attempt or successful mating until their relationship is more firmly established. When new to each other, the tigers are introduced twice daily for up to an hour each time. After 2 – 3 days of successful matings the cats may be given greater freedom in an exhibit or off display holding area. Keepers continue to fully supervise at all time and the cats are separated after 4 – 5 hours and overnight. Some pairings will be highly compatible and these cats can progress slowly to being able to live together 24 hours per day – separated only for feeding. Other cats will be less tolerant of the other once oestrus has concluded and will need to be separated and only reintroduced at the next oestrus. Maintaining mesh to mesh contact between the pair is important so that the pair can remain bonded even if unable to live together. Our experience has shown that successful pregnancies have generally resulted when the cats have mated in excess of 15 – 20 matings per day. Provided oestrus has been timed correctly, the tigers will mate for 4 – 6 days. The next oestrus usually occurs 56 – 63 days later if the female is not pregnant.

Birth preparations and mother rearing

Pregnancy is often indicated by a lack of oestrus. Abdominal changes can be detected at 7 to 10 weeks post mating. The abdomen should become larger and rounder progressively from 8 weeks post mating and be readily noticeably 10 weeks post mating. Mammary development should also show around this time. Behaviour changes may also become evident with the female becoming more relaxed and calm. Faecal hormone analysis can also be used for pregnancy detection. Faecal samples collected every second day throughout the entire cycle can be used to detect whether ovulation occurred and pregnancy seen

by prolonged and elevated progesterone levels past 60 days. Gestation often occurs 98 – 104 days post mating.



Fig 1 Pregnancy can be easily detected via an increase in abdomen size 7 – 10 post mating

While pregnancy is being confirmed a birth and mother rearing document is prepared/updated. This document outlines all of the required preparations before and after a birth has occurred to ensure that the process is well documented and clear so that a suitable maternity area is prepared and the creation of a disturbance free birth and rearing environment created.

Maternity areas are carefully selected so that they can remain disturbance free for at least the first 4 – 6 weeks. The new Tiger Trek facility had a purpose built maternity den that was designed to be away from major foot traffic while still allowing a modified husbandry routine to take place after a birth had occurred. Maternity den set up begins as soon as the female is determined to be pregnant. Preparations usually start 4 – 5 weeks from the due date to ensure that the maternity area is ready several weeks



Fig 2 Creation of a nest area in a secluded den

in advance of a birth. Unfamiliar people are no longer permitted entry into the building 6 weeks prior to a birth, ply board panels are placed on the den mesh to create a darkened, quiet and secure area, a nest area is installed with nesting material added. If not already installed, cameras are installed to monitor birth and rearing remotely. External corridor doors may have ply board applied to create both a visual and sound barrier into the maternity area. Dedicated birthing den cleaning tools are also used so that no external scent (from other animals or unfamiliar people) is introduced.

Behaviourally healthy cubs

Monitoring of mother and cubs is done via the cameras. At 10 – 14 days of age, cubs are checked for the first time just as their eyes are opening. Keepers wear overalls (that have been sprayed with Feliway) which are only used for tiger cub handling, wash hands to remove other animal scent, remove shoes and wear disposable booties. On this first check, cubs are gently touched, sexed if possible and photographs taken of back of necks and top of tail for identification but cubs are not picked up. Prior to handling, the mother is asked to move out onto exhibit to eat.

As soon as she is finished eating, she is returned to her cubs. At no time do keepers allow mothers to see their cubs being handled. After each time the maternity den is entered or cubs are gently handled, staff watch the mother return to her cubs via CCTV to ensure the mother returns to groom and suckle her cubs and does not show signs of stress e.g pacing, trying to move the cubs or failing to

checks and vaccinations can take place while the cubs sleep to further reduce stress.

The daily handling sessions always take place while the mother is out feeding or relaxing on exhibit. The purpose of the handling is to socialise the cubs with people and also to allow the health checks, weekly weighing, microchipping and vaccinations to take place with the minimum of restraint and stress. During handling sessions, additional keepers are introduced to the cubs over the next few weeks to increase their exposure to a range of people. All handling is done so it is minimally invasive, the cubs are not picked up but instead are encouraged to interact with people on their own terms. Handling is also kept low key so that being touched is associated with calm and relaxation rather than high arousal. Plush, rubber or solid toys as well as other novel items are introduced from 14 – 21 days of age to encourage the cubs to use those items for play rather than keepers. All toys are generally removed prior to the mother returning to them. (See figure at beginning of article).

From 8 - 9 weeks of age, cubs are given access to a suitable outdoor yard or exhibit under keeper supervision to ensure the area is safe for the cubs before allowing access to the area overnight. The biggest challenge at that point is conditioning the cubs to enter the den each morning when asked so keepers can clean the exhibit. This is achieved by making the den a really reinforcing and positive place through the use of toys, novel items and meat as a reinforcer. Eventually a cue can be added so that the cubs den each morning with their mother when called. Once eating meat, keepers also begin to hand feed the cubs during handling sessions.

Weaning begins around 6 – 10 weeks of age. The mother will give up her meat to the cubs so feeding mum and cubs together is an important part of their development. Cubs need to learn about gaining and holding onto valued resources but also how to behave when in proximity to another tiger that has a resource to minimise conflict. Once weaning begins, additional staff from other areas around the zoo begin to be introduced to the cubs and small group behind the scenes tours begin with the mother and cubs to prepare them for seeing a variety of people in the future.

Socialising cubs with their father is an important part of their development. Fathers immediately recognise their young and should be made an important part of the cub's life. Providing father and cubs with olfactory and audible contact from the day of birth will ensure a smoother protected contact introduction when the cubs are old enough to have mesh contact. Placing small gauge mesh

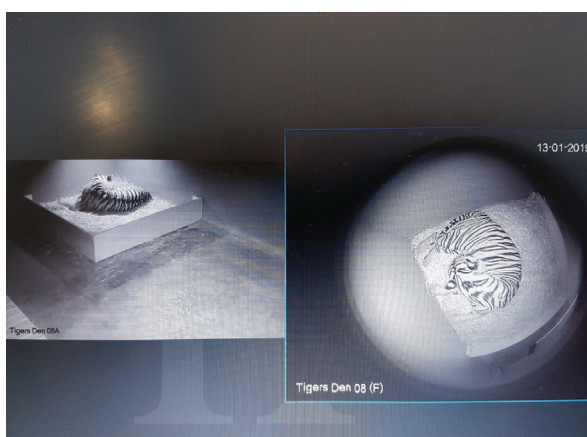


Fig 3 Monitoring of the birth and mother rearing process is done remotely via cameras to prevent disturbance

respond to cub's calls. Provided the mother is comfortable and not showing signs of stress after handling, cub handling can take place for 5 – 30 minutes per day until the cubs are 16 – 20 weeks of age. Often once the mother leaves the cubs alone they will be briefly active but then sleep for a large portion of the handling sessions. Health





Fig 5 Toys and novel items are introduced at a very early age

on any contact areas is vital to protect small cub paws, ears etc. from going through the mesh and potentially being grabbed by the male. Once the cubs are larger, the small gauge mesh can be removed. At this time, Taronga Zoo only does protected contact introductions with fathers. This is assessed on a case by case basis.

Healthcare

The cub handling sessions assist to prepare the cubs for necessary health care and checks while growing up. Initially when small, cubs are placed in a tub for weighing that is lined with straw from their nest. Later, cubs are taught to step onto scales for weighing once they are interested in following a toy or some meat. Where possible all health care is non aversive and their choice as that ultimately builds better relationships and behaviourally healthy cubs. First vaccination is done at 8 weeks of age by the veterinarian so the cubs can have a health check and microchip implant. Keeping staff then complete the remaining vaccinations during cub handling sessions and only once the cubs are asleep. Later, the yearly vaccinations are done via hand injection that began to be trained from 6 months of age.

Summary

To successfully breed Sumatran tigers, it's important to work collaboratively with species coordinators, curators and keeping staff to select the best individuals for breeding. Using the Sumatran Tiger behavioural checklist, the most appropriate individuals are able to be selected.

Introductions should be carefully planned, skilled and experienced staff made available, oestrus correctly identified and actual introductions should be taken slowly and at the animals pace. Taking it slowly will reduce incidents, injuries or fatalities. In the event of a pregnancy, mothers should be set up for success with carefully planned and prepared disturbance free maternity environments with cameras so that the entire birth and mother rearing process can be closely monitored. Staff should avoid maternity areas for at least the first 10 – 12 days to allow important mother young bonding to occur which will assist to prevent mismothering.

To allow the cubs to develop into behaviourally healthy individuals, they should be socialised with their father via protected contact as well as a whole range of different people to prepare them for a life in a zoo setting. By making human contact non aversive, the cats will be so much easier to work with in the future whether they remain at their birth zoo or moved to a new zoo. A strong working knowledge of wild cub growth and development and maternal care is important so that their social and physical developmental needs are met. Cubs should be raised in an enriching and novel environment that changes daily. This in turn will lead to cubs and adults that are more behaviourally healthy, faster learners, who will take future environment changes in their stride. The overall result is individuals who will be successful and behaviourally healthy adults.

Dingo Puppies Spark Joy In Unprecedented Times

KIANDRA PHILLIPS, MAMMALS COORDINATOR, MOONLIT SANCTUARY

With all the mayhem, confusion and uncertainty that 2020 has produced, the team at Moonlit Sanctuary were thrilled to welcome two exciting new members. During the second stage 3 Covid-19 lockdown in Victoria the two new members brightened everyone's day with their arrival...
DINGO PUPPIES!

Acquired from "Black Snake Productions" at the end of July, the two seven week old dingo puppies, one of each gender, were welcomed with open arms. During a time of tension, the dingo puppies represented something pure and exciting, their innocent faces bringing a smile to every keeper they met and with their cheeky antics keeping everyone entertained and laughing. Our vision for the puppies' future is to raise awareness and understanding of this great Australian icon to our visitors through encounters and ultimately have them displaying their natural abilities in our daily "Conservation in Action" show.

But first things first, they needed names. Two things were clear: firstly to keep with the Moonlit Sanctuary tradition of Dingo names, they had to be fire related. Secondly, we needed to use the power of "Dingo puppy cuteness" to engage with our visitors, whom we missed seeing around the park daily. After conducting a Facebook competition, it was settled that the tan male would be named "Coal" and the white female "Sootie."

Coal and Sootie's basic husbandry training is excelling. At nine weeks old they are fluent in sit, drop, target and station. The next steps in their training plan are set to continue and focus on other aspects of training such as harness and crate training. But it was their socialising that presented the greatest obstacles for keepers.

Previously when raising dingo puppies, they would be socialised with every person possible before meeting members of the public. Family and friends of keepers and volunteers would be introduced using scheduled times, ensuring the dingoes were exposed to a variety of stimulus, including examples like people using a walking aid, various types of cologne/perfume, children, adults, elderly or anything else that represented an individual's uniqueness. By doing this, we were preparing them to best succeed in the future.

However, raising dingo puppies in unprecedented times



Sootie posing for the camera during a training session

means keepers have to adapt their training plans and be as resilient as the species we are training. Due to restrictions of the current Stage 4 lockdown we are only able to expose them to Moonlit Keepers, therefore, we have created, and update daily, an extensive list of every possible situation that we can imagine and transform this into a roster of events in which we systematically expose them to the stimulus. For example, the keeper who is rostered on to the very tough job of "puppy sitting" for the day, would ensure they are wearing a rain jacket. Another keeper the next day might use a wheelchair or maybe wear a different cologne/perfume. Every possible change in the environment is also being recorded and in turn how Sootie and Coal individually react to this change in order for us to identify any area in which we need to focus our exposure training (I think we can safely assume that face masks and the smell of sanitiser will not be a stimulus we need to worry about).

Staying positive while training our animals has always been emphasised at Moonlit Sanctuary therefore even though Melbourne has entered Stage 4 restrictions keepers continue to evolve and embrace the changes around us as we ensure the welfare of our animals is maintained to our high standards. We are confident that although we have been faced with many challenges this year Coal and Sootie's training will be as successful as if there were no lockdown at all. We are all eagerly awaiting the time at which our wonderful visitors come back to the park and meet our spectacular puppies but in the meantime we will continue in our endeavours to raise the most happy and resilient dingoes we can.



KANGAROO ISLAND DUNNART CONSERVATION

CATHERINE SONNEMANN, EMAIL NEILS@NETC.NET.AU

The Kangaroo Island Dunnart, *Sminthopsis aitkeni*, is a small carnivorous marsupial endemic to Kangaroo Island in South Australia. It is listed as 'Critically Endangered' and as a small isolated population they are more likely to be affected by changes in their environment. The fires in 2019/2020 where much of their fragile habitat has been destroyed will certainly have impacted their numbers.

Over recent years there has been research undertaken on this little known marsupial. It inhabits a very small geographical area on the western part of the island in the Flinders Chase National Park and on surrounding private land that has remnant vegetation. This small range may be due to habitat loss through agriculture, land clearing, loss of vegetation corridors, predation and recently the wildfires.

On a field trip to Kangaroo Island after the fires we witnessed the devastation caused by the wildfires of January 2020. Having been affected by wildfires ourselves on the farm we understand the impact that fire has on the environment, fauna and communities. The roads on the western side of the island were closed due to the dangerous trees so our trip was limited in range and we were unable to visit areas of the KI Dunnart habitat. On our travels we visited Raptor Domain and Kangaroo Island Wildlife Park in Parndana, and unfortunately neither of these had captive breeding programs in place or dunnarts on exhibit. The staff we spoke to had not actually ever seen a Kangaroo Island Dunnart. There is scope here to include these private institutions in captive breeding programs for this species.

On returning home I was inspired to create a metal sculpture of this little known marsupial, known as Dasy (short for Dasyurid). He is made from recycled farm machinery and implements and has taken over a month to construct. Materials have been shaped and heated in a blacksmith's forge, using a photo for reference. Now that the statue is finished it will be travelling to many regions of Australia in the future to hopefully bring an awareness of this marsupials plight to the public.

Photos show Dasy during construction and its completion. It also turns on a stand to be viewed from any angle. This is one dunnart that will be here for a long time! The ASZK has recently given direct aid to the Kangaroo Island Dunnarts plight by donating \$2,300 to the recovery efforts being undertaken by KI Land for Wildlife.

This vital funding will assist in the construction of cat exclusion fences, replacement of equipment burnt in the fires, and ongoing management of a conservation area. However the Kangaroo Island Dunnart now needs OUR help!

Please donate to this worthy fund. By doing so you participate in the effort to ensure this species does not become extinct. We can all play a part by a donation. Links to donate are listed below:
<https://www.australianwildlife.org/june2020/>

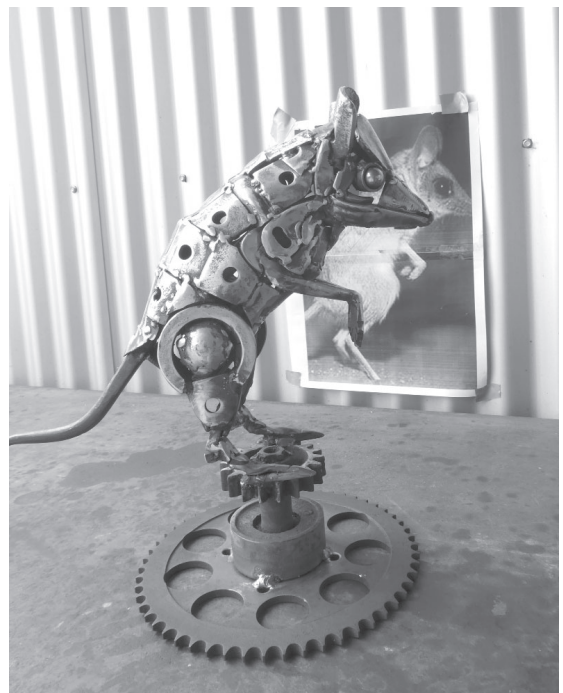
Donations can also be made directly to the Kangaroo Island Land for Wildlife Association by going to their Facebook page for details.
<https://www.facebook.com/KILandforWildlife/>

References:

Thylacinus – ASZK issue 44 – ASZK Bushfire Relief Funding by Chris Dryburgh

AWC extract <https://www.australianwildlife.org/wildlife/kangaroo-island-dunnart/>

Environment.gov.au <https://www.environment.gov.au/biodiversity/threatened/recovery-plans/recovery-plan-kangaroo-island-dunnart-sminthopsis-aitkeni>



Statue and photo for reference

BANDICOOTS ENJOYING LIFE ON A NEW ISLAND PARADISE

AMY E SMITH- ZOOS VICTORIA

The mainland Eastern Barred Bandicoot (EBB) *Perameles gunnii* is a small (~750g), solitary, nocturnal marsupial that is native to the basalt plains of South West Victoria. They feed on invertebrates and some plant material and rest in grass lined nests during the day (Winnard & Coulson 2008). Eastern Barred Bandicoot's were driven to near extinction on mainland Australia, due to predation by the introduced Red Fox (*Vulpes vulpes*) and >99% habitat destruction. In the late 80s the last wild mainland EBBs were surviving in Hamilton, western Victoria, but their population size was declining.

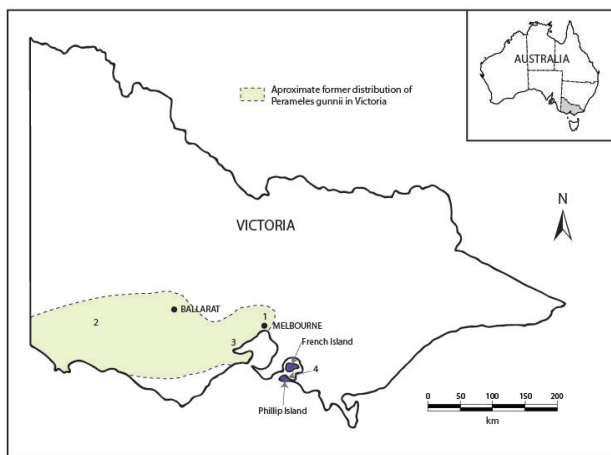


Figure 1. Map of the current and historical distribution of the mainland Eastern Barred Bandicoot in Victoria. 1 = Woodlands, 2 = Hamilton, 3 = Mt Rothwell 4 = Churchill. Photo credit: Dr. Amy Coetsee.

The recovery effort began in 1988 and in 1991 Zoos Victoria joined the captive breeding program. Since then, over 960 bandicoots have been bred in captive institutions, with over 690 of them bred at Zoos Victoria (Marissa Parrott, pers. comm.). In the early days EBBs were reintroduced into seven sites with varying success. This was due to the difficulties controlling foxes and ultimately it was realised that EBB populations cannot persist in areas that aren't maintained fox free: one fox is one fox too many for this species. Eastern Barred Bandicoot populations are now found in three sites surrounded by predator-exclusion fencing within their indigenous range (Woodlands Historic Park, Hamilton Community Parklands and Mt Rothwell) and have also been introduced to three fox-free islands (Churchill, Phillip and French Island).

French Island is a 170 km² island with only 119 permanent residents (census data 2016) and a similar number of part-time residents. French Island is located in Western Port Bay on the coast of south-east Victoria near the more well-known and populated, Phillip Island. Only a 15 minute ferry ride from the mainland, French Island is unincorporated, has no sealed roads and is completely off-grid. French Island has long been on the horizon of the EBB recovery program as it is fox free and contains suitable grassland habitat, including private farmland. Feral cats are present on the island, but are controlled and there is a plan to eradicate them under the Federal Government's Threatened Species Strategy (2015).

The EBB release site 'Bluegums' is reclaimed farmland, now managed by Parks Victoria. It was chosen because it contains suitable habitat for EBBs and was the site of a trial release of non-breeding EBBs in 2012 (Groenewegen et al. 2017). The vegetation at Bluegums includes open grassland, blackberry, thick tea-tree forests and patches of bracken. It took 12 years to gain community support, but the time finally came in October 2019!

On the 11th of October 2019, 56 Eastern Barred Bandicoots from Melbourne Zoo, Werribee Open Range Zoo, Serendip Sanctuary and Churchill Island were released into Bluegums. Another 18 from Hamilton were released two weeks later, bringing the total to 74.



Figure 2. Fifty-six crated EBBs patiently awaiting release on French Island.



Every year Zoos Victoria offers opportunities for staff to be involved in conservation projects, through fellowships. Contributing to in situ conservation work has been a dream of mine. After working with native Australian species at Melbourne Zoo and Healesville Sanctuary for five years and being involved in the Eastern Barred Bandicoot breeding program, I jumped at the opportunity to do a fellowship monitoring the French Island EBBs.

My project involved radio-tracking some of the released EBBs to determine survival rates and find out where they were nesting. Each trip was two weeks long, and the transmitters were predicted to fall off within that time. As feral cats are present on the island it was important to know if any of the cat-naïve EBBs were being preyed upon, as this was only the second time EBBs have been released into a location with feral cats.

In October 2019, 33 of the bandicoots had a <1.0 g VHF transmitter attached to their tails with Fixomull stretch tape (Coetsee et al. 2016). I began tracking them to their nest sites the day after release. I could pick up a transmitter signal when a bandicoot was within about 100m and especially when standing on high ground (which was hard to find in Bluegums). This meant I spent long days driving and walking around the site, bush bashing through thick vegetation and trying to avoid stepping on snakes. Once 'on the scent' of a bandicoot it was thrilling to follow the signal and find where the EBB was nesting.

I struggled to find some EBBs, presumably because they were nesting in the dense tea tree, or they could have left the release site. Others were easy to find as they nested in pretty much the same location for two weeks straight. The transmitters contained a temperature sensor so I was able to tell if a transmitter was still attached to an EBB by listening to the beep rate it emitted. A fast beep rate meant



Figure 3. An EBB with teeth stained from eating blackberries.

the transmitter was warm and either still attached to a live EBB or in full sun, whereas a slow beep rate meant the transmitter was cold and had fallen off, or the EBB had died. I managed to retrieve most transmitters within two weeks: most of them fell off in nests, whilst others dropped off when the EBBs were out foraging at night.

In February 2020, I helped trap EBBs over three nights to check on their health and reproductive status. Nineteen bandicoots had transmitters attached to their tails—including one cheeky EBB that dislodged her transmitter in dense tea-tree forest and was refitted with another transmitter the next day. She was obviously a fan of the peanut butter balls we bait traps with because she was trapped on all 3 nights. I again tracked the bandicoots with transmitters for two weeks. A third trip was planned

for May 2020 but was cancelled due to the COVID-19 pandemic.

This project was not an easy one. Some of the bandicoots chose horrible (in my human opinion) sites to build nests in, often nesting in the middle of huge blackberry patches. The blackberry that was dormant and unbearably scratchy to walk and track bandicoots through in October was fruiting by February. This was a delicious snack for humans and bandicoots, alike, but still full of thorns and hard to walk through. Almost all the bandicoots trapped in February had teeth stained from eating the blackberries!

From the data collected so far there is no evidence of EBBs being killed by feral cats despite their presence on the island. Although some EBBs transmitters were not recovered and others haven't been trapped, it can't be ruled out. The bandicoots that have been caught are successfully breeding and in good condition. Eastern Barred bandicoots have the second shortest gestation of any mammal (12.5 days) and are capable of breeding all year round from the age of three months. Therefore, it was not a shock that we found pouch young in February, four months after release. The bandicoots are using a lot of the release site and perhaps moving beyond it. They are nesting in a variety of habitats including blackberry (ouch!), tea-tree forests and grassland. Some bandicoots change nests almost daily while others stayed in the same nest for almost two weeks. French Island is outside the indigenous range of EBBs so that the fact that they are nesting and surviving in this habitat is an excellent result.



Figure 4. Not a bad view: radio-tracking EBBs at the Bluegums site.

During my time on French Island, I was lucky enough to see some of the other beautiful wildlife that calls French Island home including many, many Copperhead Snakes, koalas, echidnas, Swamp harriers, even the elusive Long-

Nosed Potoroo. It was such a unique experience living on the isolated French Island. As a zookeeper involved in breeding this amazing animal, it was unbelievable to see EBBs doing so well in the wild: surely every zookeeper's dream.

The EBBs on French Island will continue to be monitored closely, if they successfully establish, this site adds approximately 10,000 ha of suitable habitat for EBBs. It was truly amazing to be a part of a project releasing a species declared extinct in the wild. In fact, the successful addition of French Island to the range of EBBs could help them be the first mammal removed from the threatened species list in Victoria.

The Eastern Barred Bandicoot Recovery Team has members from (in alphabetical order) Conservation Volunteers Australia, Department of Environment, Land, Water and Planning (DELWP), Mt Rothwell Biodiversity Interpretation Centre, National Trust of Australia, Parks Victoria, Phillip Island Nature Parks, the University of Melbourne, Tiverton Property Partnering and Zoos Victoria.

Thanks to Dr. Amy Coetsee and Zoos Victoria for supporting my involvement in this project and to Julie Trezise for her help with data collection.

References

- Coetsee A, Harley D, Lynch M, Coulson G, de Milliano J, Cooper M and Groenewegen R (2016) Radio transmitter attachment methods for monitoring the endangered eastern barred bandicoot *Perameles gunnii*. *Australia Mammology* 38: 221-231.
- Groenewegen R, Harley D, Hill R and Coulson G (2017). Assisted colonisation trial of the eastern barred bandicoot (*Perameles gunnii*) to a fox-free island. *Wildlife Research*, 44. 10.1071/WR16198.
- Winnard AL and Coulson G (2008). Sixteen years of Eastern Barred Bandicoot *Perameles gunnii* reintroductions in Victoria: a review. *Pacific Conservation Biology*, 14: 34-53.





COVID ANNOUNCEMENT

The ASZK Committee has made the difficult decision to Postpone our annual bowling event to 2021 due to current restrictions.

In 2021 we will be 'Bowling' for Sun Bears.
Check them out at www.sumatransunbearteam.org

BOWLING

For

Sun Bears



Postponed Until 2021

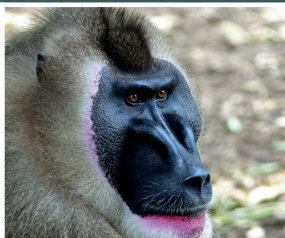
ICZ Keeper Conservation Grant



The International Congress of Zookeepers (ICZ) offers a \$1,000USD grant for conservation projects that work to protect wildlife & their habitat.

In 2015, the ICZ Conservation Grant was created by keepers for keepers in response to the need for them to be able to contribute, collaborate, or even create their own conservation projects. The ICZ Conservation Grant has supported six conservation projects, helping many different species, such as, but not limited to; hornbills, Sumatran sun bears, pangolins, primates & many more.

Please visit iczo.org or email conservation@iczo.org for more information and to find out how to apply.



Grant winner testimonials



"The grant was very valuable in producing bi-lingual brochures & posters for the local Sumatran people. We are increasing our presence & contacts while working through the Government system to reach our goal of building a Sun Bear Rescue & Conservation Centre, while also benefiting the local people.

Thank you for the support".

Lesley Small

Director of Sumatran Sun Bear Team, Indonesia
ICZ Keeper Conservation Grant winner 2018



"...the ICZ has allowed Tacugama to keep all our staff during the Ebola epidemic, which mean we have been able to provide the same standard of care for the chimpanzee & none of our staff members have been left without a job during the crisis. The ICZ grant has covered the salary of two keepers for 2 months (\$250/month/keeper). We want to extend a big thank you to International Congress of Zookeepers for its support."

Bala Amarasekaran

Project Founder & Director, Tacugama Chimpanzee Sanctuary, Sierra Leone
ICZ Keeper Conservation Grant winner 2015

8 IDEAS TO HELP YOU TRAIN FOR DURATION

RYAN CARTLIDGE
THE ASZK ANIMAL TRAINING SUB-COMMITTEE

Having our animals offer behaviours with duration is an important skill to learn and also one my dog Fibi & I worked hard on over the month of June 2020 (with the behaviour of Fibi lying on her side, a.k.a “the Fibi-Flop”). Duration behaviours can also be extremely important in the zoological setting - for example; having an animal hold still for an injection, station patiently whilst a keeper trains a co-specific in the same environment or maybe sit still on a pair of scales.

However, I often hear people mention that they find duration significantly challenging to train! Consequently, I thought I would share some of my own thoughts, ideas from my mentors & also suggestions that peers have offered me on social media over the last wee while.

BELOW ARE 8 IDEAS TO HELP YOU BUILD DURATION BEHAVIOUR.

1) Remember that each animal is an individual

I feel like this tip is just an important reminder to mention at the start of anything to do with training. There’s no recipe to how you train duration (& the speed at which you progress through your approximations). Rather, I believe that the skills come in observing our learners & learning (ourselves) to go at their pace.

2) Train ‘easy’ behaviours to duration first

In my experience I have found that once we have taught what I would label as “the concept” of duration to our animals – it then can become easier for them to generalize it to other behaviours. Consequently, I feel there can be benefit in training the concept with what one might think of as “easy behaviours” first & then using the concept for more challenging behaviours.

Of course as mentioned above every animal is an individual so “easy” is not defined by us but rather by the individual animal/learner in front of us. However, there are some common behaviours that I feel might fall into this category. For example a nose touch to a target stick,

a station or a paw/foot offer and/or a station behaviour. And the cool thing is that after you have these behaviours on duration they can be used for SO many different situations. The “Fibi-flop” behavior [I mentioned above] for example one could argue is just Fibi targeting the side of her body to the ground.

3) Split split split

I feel a big temptation many trainers have (including myself) when training anything, let alone duration, is to push forward before the animal is ready. Training duration in small increments, I find has been something that has been super helpful for me!

One way to do this might be to keep your sessions nice & short, have an idea on what approximation you would like to achieve before you start & also ensure these approximations are based on how your animal did in your last session/s. We can often get there (i.e. our end goal) faster if we go slower (& at the animals pace).

Approximation = a step in the direction towards your final behaviour (from whatever criteria/behaviour your learners is currently on)

4) Ping ponging

Also as we increase duration, we can also throw in reinforcement for smaller durations. One way I like to think about this is via doing something I learned whilst doing Sarah Owings & Helix Fairweather’s cyber scent course last year (a course on teaching nose work/scent behaviour with dogs). This is called ping ponging around a certain duration.

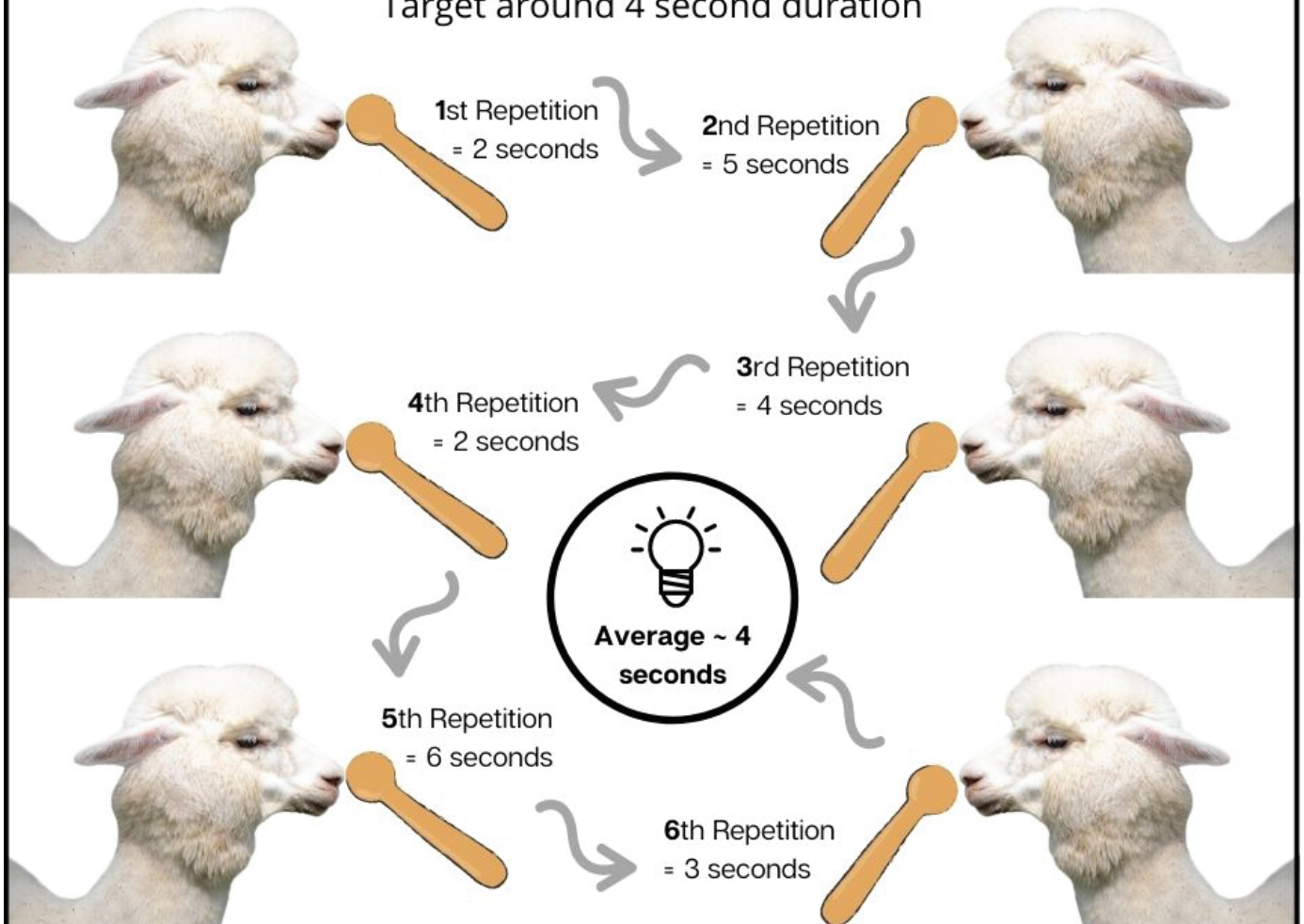
So for example I might be working on a 4 second duration nose target to a stick with my Alpaca. And rather than only reinforce 4 seconds I might Ping pong around this number... So I might first reinforce 2 seconds... then 5 seconds, then 4 seconds, then 2 seconds, then 6 seconds, then 3 seconds.

The idea is the average should be about 4 seconds. And in the above example I went 2 seconds higher/lower on either side. Logically this means the behaviour isn’t just



PING PONGING

Target around 4 second duration



getting harder and harder – there are also reinforceable opportunities at easier approximations.

5) Relax criteria on other elements of the behaviour

As we shape the criteria of maintaining (&/or repeating) behaviour for longer and longer durations we might choose (& often there is huge value in) to lower the criteria of other aspects of the behaviour.

For example with the “Fibi-Flop” behaviour the ideal criteria is my dog Fibi lies on her side with her head resting on the ground. However as I started to go past 10 seconds I relaxed the criteria of head on the ground & started to count my duration as soon as she had finished eating her last piece of food - as long as she was still lying on her side. I can “tidy-up” the head on the ground behaviour later.

Criteria = the observable/describable behaviour we can see our animal doing and that we are intending to reinforce.

7) Mix with fun easy behaviours

As doing a single behaviour for long durations might not be SUPER fun – for example lying on your side for 20 seconds. Mix asking for this in amongst other behaviours with long reinforcement histories for our animals. Behaviours that we might label as ‘fun’!

For example you might be training your Orangutan to present it’s arm in a chute to receive an injection. Potentially boring right? But maybe your Orangutan also knows to target it’s hand to a laser pointer. And you can use that laser pointer to ask your Orangutan to move around it’s training space (which it loves doing). You might do the laser pointing target behaviour a few times then do some duration of arm in chute and then a few more

targets around the enclosure.

What trained behaviours do you think your animals find the most fun?

8) Always work on improving your observation skills

Another challenge people sometimes have is knowing when to move from one approximation (baby-step) to another. Trainers might describe knowing when to do this as a gut feeling, but I feel in reality this comes from being great observers of minute changes in body language. For example... What are your animal's eyes doing, what are the muscles doing? Ears? Legs? Tail?

A great way to do this is to film your training sessions and watch them back. Observe areas of your animal's body language and see if there's anything you might have missed whilst the animal was in front of you in the session. These further observations might help you hypothesis how your animal was feeling and therefore whether we should or should not move forward in our training plans.

I hope that these tips are useful to you! And I would love to learn more about what you have found helpful to help teach duration? And/or if you have any questions please feel free to reach out to me directly at ryan@animaltrainingacademy.com

And to learn more, see video examples, access bonus links & also see an extra 9th idea you can access an expanded article here >>> www.animaltrainingacademy.com/duration/

• ASZK • NEW MEMBERS

*The ASZK Committee
would like to
welcome the following
new members*

FULL MEMBERS

COURTNEY HAWKINS
Lone Pine Koala Sanctuary

ANNABEL THOMAS
Koala Park

ADAM DANIELS
Symbio Wildlife Park

YO-ANNE EASTLEY
Bonorong Wildlife Sanctuary

ANGELICA AGUILAR
Melbourne Zoo

JOHN RICE
Sydney Zoo

CAITLIN ONDRACEK
Moonlit Sanctuary

ASSOCIATE MEMBERS

GEORGIE MARTIN

JAKE CORBETT



The “forgotten” bear, the Sun Bear, in Sumatra.

**LESLEY SMALL, CARNIVORE KEEPER, TARONGA CONSERVATION SOCIETY AUSTRALIA
FOUNDER AND DIRECTOR, SUMATRAN SUN BEAR TEAM**



Why are we working/needed in Sumatra? Because the Sun Bear needs our help. Sun Bears are primarily threatened by commercial hunting and deforestation.

The Malayan Sun Bear, *Helarctos malayanus*, is classified by the IUCN as Vulnerable, and is listed as CITES Appendix 1. The distribution of the Sun Bear is in South-East Asia and other areas within Asia, though it is now extinct in Java and Singapore with some rare recent discoveries of it still existing in China.

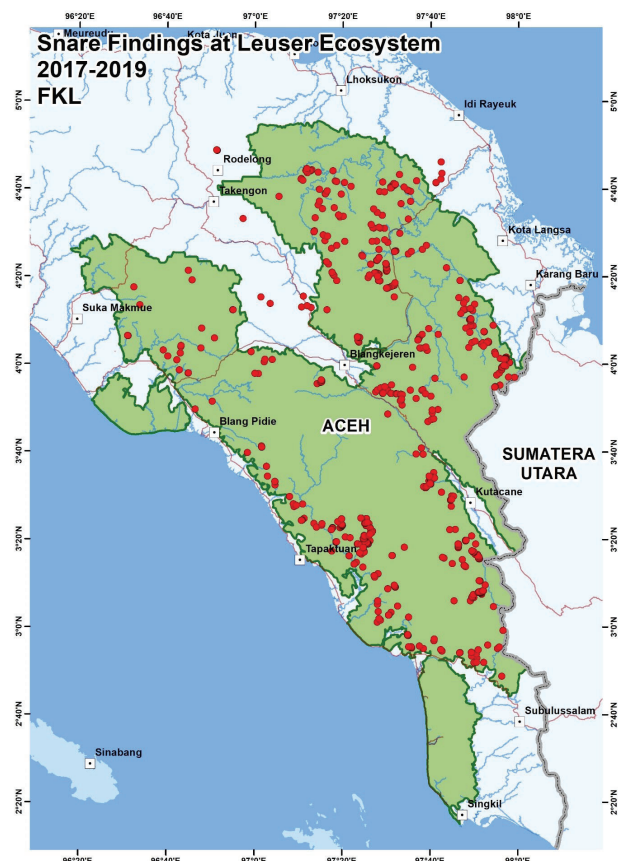
Sumatra is an Indonesian island that is as beautiful as it is troubled. The size, scale and population of the island is surprising, being almost half a million square kilometres in size with a population of over 50 million people. In comparison, it is bigger than New Zealand and Cambodia combined, while the population of people there is higher than Australia, New Zealand and Cambodia combined. On this type of scale, and with some of the most diverse rainforests in the world, home to hundreds of rare species of birds, mammals and reptiles, and millions of invertebrates, it's clear that this island needs protecting. With habitat destruction and fragmentation due to logging, plantations and human settlement, the keystone species, the Sun Bear is rightly described as vulnerable.

Coupled with the worrying increase of habitat destruction is the continuing evidence of illegal activity targeting the Sun Bear. While this species is legally protected by the Government, people are devising new ways, means, and reasons for threatening the Sun Bear. Some causes for alarm are that the Sun Bear doesn't align with the activity of the people causing human bear conflict in plantations and villages. A recent study included interviewing known local hunters who admitted to hunting the Sun Bear and receiving the equivalent of AU \$150, by selling the meat, claws, teeth and gall bladder – (source not provided in order to protect the identity of the NGO who has the trust of the local people). In Northern Sumatra there have been snares found that are specifically designed to trap the Sun Bear; a bamboo, cone shaped trap with the strangling snare at the neck of the cone, with a piece of fruit pushed into the trap where the bear uses its paw to try and retrieve the lure. The trap is secured, and the struggling, frightened bear has nowhere to go and must wait until the poachers return.



A snared Sun Bear. Photo credit Haray Sam Munthe

In Aceh, the most northern province, over 1800 snares were retrieved from primary and secondary forest over a two-year period. It is estimated that in Aceh alone, 15 Sun Bears are snared each year.



In Aceh between 2017-2019 1,830 snares found in the marked areas. Data: Forum Konservasi Leuser, 2019

In the province of North Sumatra, a juvenile Sun Bear has been seen on a camera trap with a rope snare around his neck, he has either managed to escape or the rope has been cut to free him, however the evidence shows that the rope is tight and will probably severely affect him as he grows. There are no teams available on the ground available to assist or rescue this little bear.



Sun Bear with rope around neck. Photo credit Vanessa Rowe, Stay Wild Tiger Trust

Young Sun bears are also captured for the pet trade - in most instances the mother bear must be killed first. She could have been wandering close to human settlements, or in plantations or farms causing human conflict, or she could have been taken from her natural habitat in the forest.

If “pet” cubs are confiscated by forestry officers, there is nowhere adequate to place them and they usually languish in small cages for years. (below)



Some practices have involved releasing the bears once they get to adulthood. This is not good news. Sun Bear spend up to three years with their mum, and being a

highly intelligent animal, they have a lot to learn in that time. They must learn what foods they can safely eat; mum teaches them what is or isn't toxic. They can't afford to experiment as it could be deadly. Without this skill they are likely to die from toxicity or starvation. They also need to recognise the smell of a wild male Sun Bear who will kill them if they are in his territory unless it is a female in oestrus. There are several documented cases of adult male bears killing un-skilled bears

Undisturbed Sun Bears do live well in the depths of the forest and have been seen on camera traps with mum and up to two healthy cubs -usually they only have one cub so it's nice to know that when left alone in their natural habitat, they can flourish. They are needed in the forest as seed dispersers, they keep the forest healthy and diverse. They tear apart logs containing larvae and termites, which releases vital nutrients into the forest. They are the most arboreal of all bears and climb extremely high to excavate to get to honey or sap in tree trunks. This then provides a breeding cavity for a female hornbill to safely raise her young

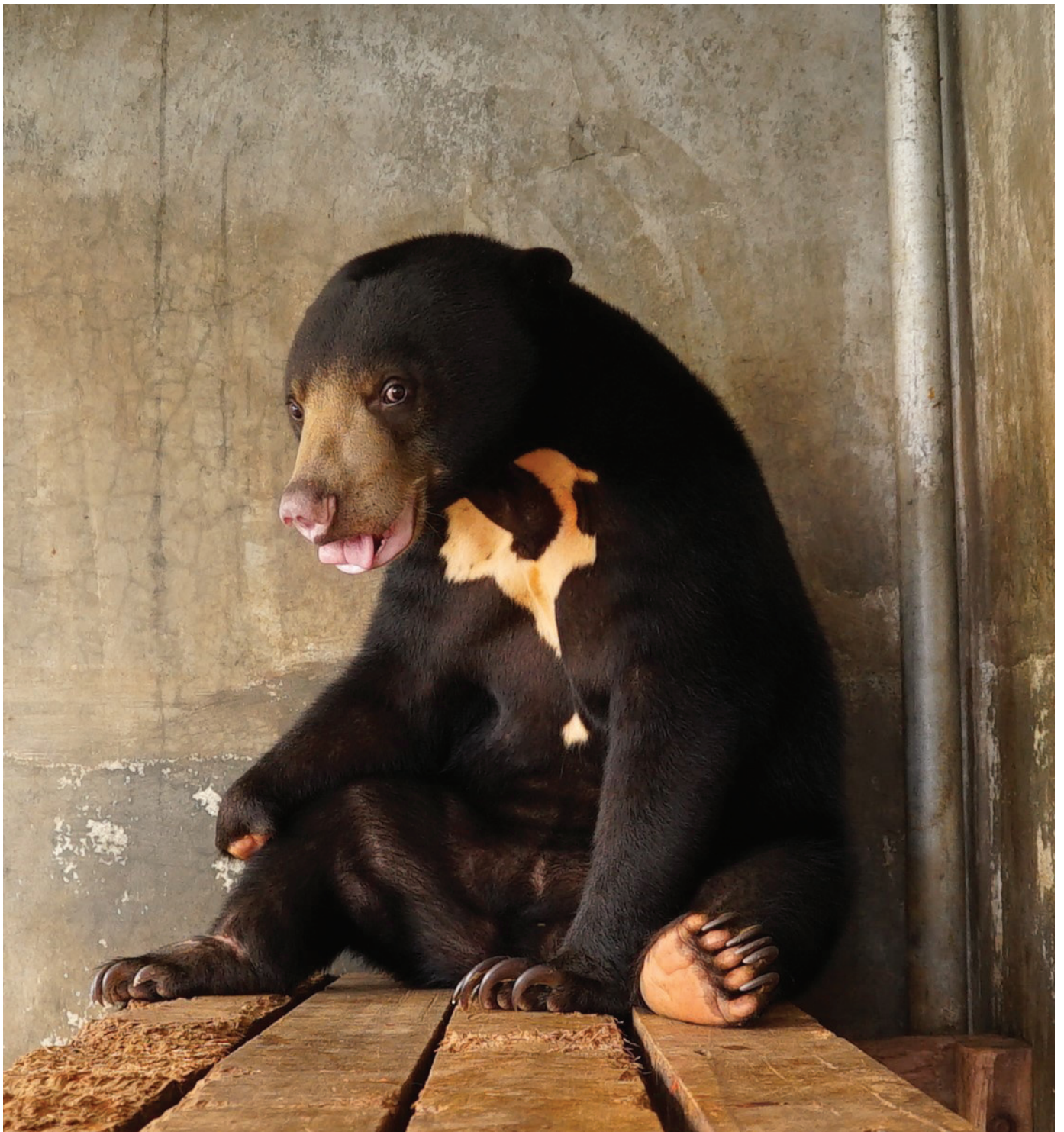


Sun Bears live well in the depths of the forest. Photo credit: Harry S M, 2019

There are currently no conservation or rescue centres for Sun bears on Sumatra. An island this big and with enormous human activity and impact needs a facility where a confiscated bear can be placed. The bear can then be evaluated for either rehabilitation for release into the forest if they are suited and have previous forest skills, or into a purpose-built enclosure for bears too compromised for release. There must be post release monitoring, and there needs to be veterinary teams ready to action a rescue, treat and release a snared bear, getting to the victim while the limb is still healthy.

Slow response by rescuers has consequences. (next page “Cantik lost a hand”)

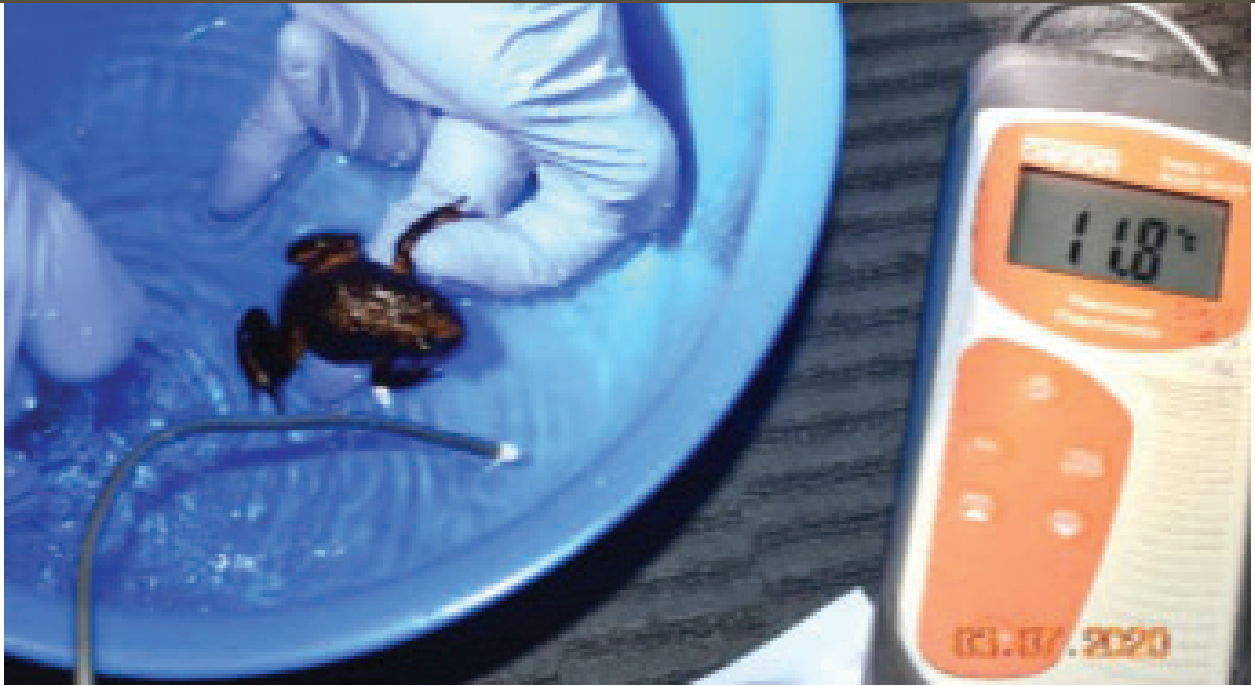




”Cantik” above is an amputee that has nowhere to prove that she can survive back in the forest.

There needs to be facilities and personnel to provide education to the local people, and to be able to work with them to help provide a livelihood so they don’t have to rely on illegally poaching this protected species, the Sun Bear. The Sumatran Sun Bear Team are the first and only organisation to take this ambitious duty on.

Editors Note: ASZK will be “Bowling for Sumatran Sun Bears” in 2021.



MELBOURNE ZOO *Ectotherms*

The Southern Corroboree frogs (SCF) in Melbourne Zoo Endangered Amphibian Complex (EAC) has completed its upgrade. New shelving has been installed to make way for larger micro-habitats for these alpine frogs. Twenty-two new enclosures to replace the Pal Pens have been designed and constructed by our Amphibian Specialist - Damian Goodall. These enclosures now give our adult SCF four times the space to live in when they are not in their breeding habitats. The design features include elevated perforated flooring allowing the gravel to flush clean via the automated irrigation system. Each habitat has sufficient drainage, which is plumbed up to waste making the environment hygienically clean. The live plants act as perfect shelter and also help reduce any bio waste. New T5 technology lighting fixtures have also been installed. This has been a huge step forward in welfare and husbandry management for the 223 frogs housed in this bio secure facility, which plays an important role for the recovery program for this critically endangered species.

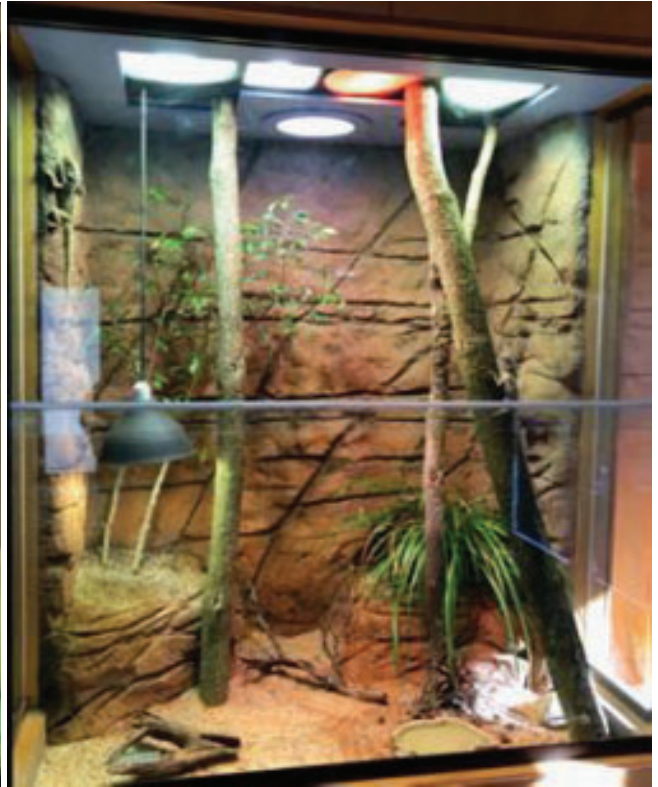
One of our Baw Baw frogs developed an eye infection that did not respond to treatment. Along with the vet team, it was decided that the only option was to surgically remove the eye. This particular frog was quite significant as he is one of the only wild caught males that we have at Melbourne Zoo and is the last surviving male from Ellery



Upgraded enclosures for Southern Corroboree Frogs at the EAC. Photo Damian Goodall

Creek, one of the sites on Mt Baw Baw that previously had a healthy population of this species. For an Alpine Frog that only weighed 10g, it certainly was going to be a challenging feat. Our regular consulting Ophthalmologist, Dr Anu O'Reilly, performed the delicate procedure using a surgical microscope at her practice. The frog travelled in an esky with ice packs and chilled water. During the procedure, the frog had to be kept between 8-16 degrees Celsius. This was done by setting the frog up on an ice pack platform. It was such an amazing outcome and a successful surgery. The frog recovered well in a chilled water bath before returning to the zoo. He is now looking much more comfortable. (see top photo, Zoos Victoria).

Whilst the zoo has been closed to the public, the keepers have seized the opportunity to undertake major renovations of the reptile, amphibian and invertebrate exhibits within the Learning Nodes: Growing Wild, Digest'ed and Forest Harvest Hut. The renovations allow for increased animal welfare, husbandry, improved keeper servicing and better visitor outcomes; these improvements include better aesthetics, usable space, mixed species displays, better heating, lighting and enrichment opportunities. Check out a couple of the Before and After Shots with the animals that now reside in them.



Frilled Lizard before (left) and after (right)



Leaf insects

The team are pleased to be moving 23 Canberra Grassland Earless dragons, (*Tympanocryptis lineata*) into a newly renovated facility at the Keeper Kids area (below). The area is ideal for these little dragons. It allows for increased animal welfare and micro-habitats that align with this species' natural history and geographic range. Newly established pairs have been introduced in preparation for the upcoming breeding season later in the year.



Carnivores & Ungulates

Binjai our older female Sumatran Tiger had broken off the end of one of her canine teeth. This required her to get a root canal filling as a result. Our consulting dentist, David Clarke, performed the procedure along with our vet team.



Root canal surgery on a Sumatran Tiger. Photo Zoos Victoria

More amazing training on the team, this time on blood draw with male Snow Leopard 'Kang-Ju'. This is progressing well, with him now presenting his tail through the training chute.

The team have been working on some Meerkat station training for some time now. The aim of this was to redirect the unwanted behaviour of the meerkats waiting right at



Blood draw with male Snow Leopard 'Kang-Ju'. Photo Carnivores & Ungulates Team

the keeper door and scratching at it until the keepers open up. The team have made great progress at this and now one of the groups of meerkats currently all go on their stations upon a cue from the keepers on arrival and don't come to the door anymore (below).



Wild Sea

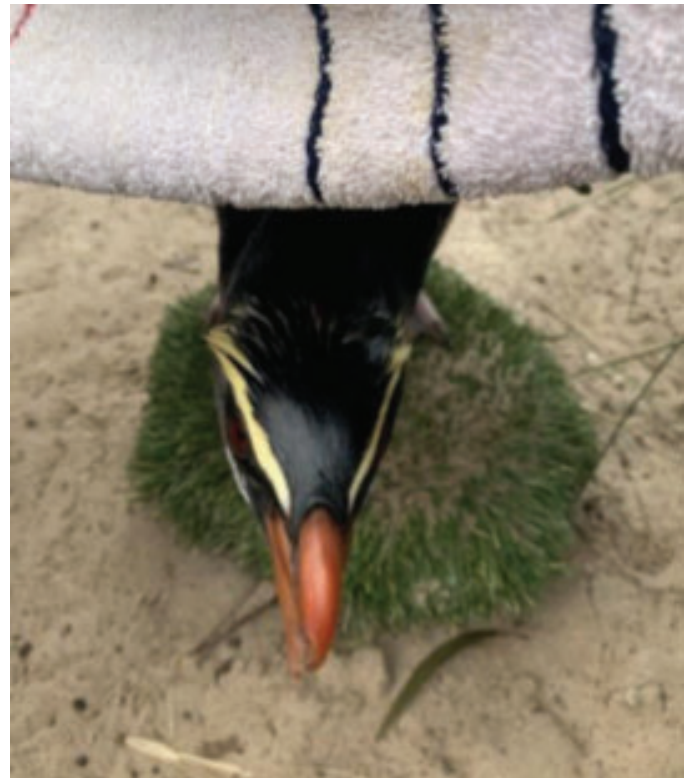
The keepers performed routine health checks on our three Fiddler rays, this includes checking for skin lesions that can be caused by fluke parasites. This includes taking the samples of skin mucus by lightly scraping a microscope slide along the skin surface. Upon examination by vets under the microscope, all three rays had beautiful skin without lesions, but Flo and Barb, our Southern Fiddler rays had a few flukes in their samples. Not to worry, this was easily resolved with some worming medication in their fish.



Photo Credit by Zoos Victoria (pic taken pre-COVID-19 restrictions)

In more fishy news, one of our Mados needed a visit to the vet for treatment of some skin wounds. The fish needed to be anaesthetised in order to scrape away the unhealthy tissue to clean the wound and then apply a special medicated dressing designed for underwater use. The fish was placed into a tank of aerated water mixed with anaesthetic. The anaesthetic enters the fish via the gills in the same way it takes up oxygen from the water. Once asleep, the fish was placed on a tray and nurse Nat used a large syringe to constantly flow aerated water mixed with anaesthetic through a tube placed in the mouth – this liquid then flowed out over the gills, giving the fish oxygen and keeping it asleep while vet Dr Michael Lynch did the surgery. When the job was finished, Nat started syringing in plain water only and then the fish was returned to a tank where it slowly swam around until fully awake, amazing!

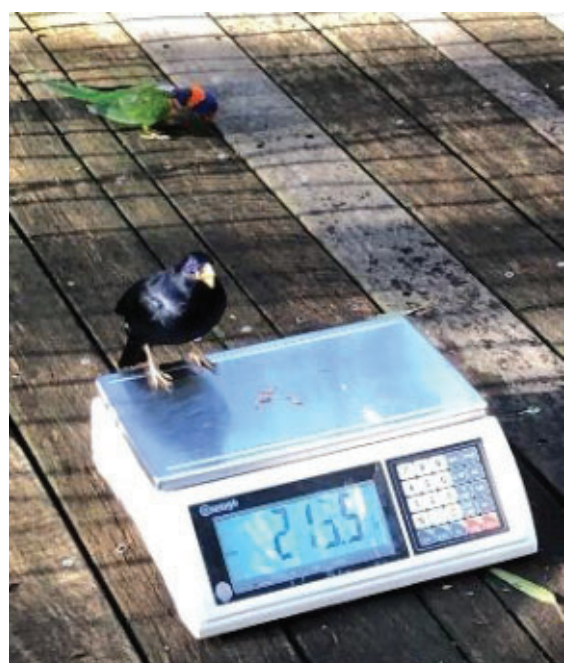
Our male Fiordland Penguin Ed has started learning a new towel restraint behaviour. This training allows him the choice and control over the session to enter the towel to be restrained. This behaviour will help the keepers or vets perform any medical exams if he may need to be restrained.



Fiordland Penguin Ed has started learning a new towel restraint behaviour.. Photo Wild Sea Team

Australian Bush

The team has been doing some amazing work with Scale Training. The team are so close to getting a weight from the emus. Furthermore, a huge shout out to Keeper Cassie for her determination in scale training work with the birds in the Great Flight Aviary. Cassie managed to weigh a Little Friarbird that had not been weighed in 22 years!



Weighing birds in Great Flight Aviary Photo Australian Bush Team

Trail of the Elephants

The team and Mali our young female Asian Elephant are progressing well with unrestrained ultrasound training. Mali has started backing into the training chute in the correct way with her bottom touching the butt bars.

Primates

Although life outside of the zoo walls has slowed during coronavirus (COVID-19) and temporary closures, the primate department has still been busy with enclosure alterations, animal births and milestones. We have maintained split teams and rosters and, although it's starting to feel like the new norm, we can't wait for this to be over so we can be one team again. We welcomed a new spider monkey baby to the family on the August 5. The birth was a little sooner than we expected but everything went perfectly. Mum Isobella is doing an amazing job and the baby is healthy, strong and very alert. We now have a troop of seven individuals. Maya the eldest of our spider monkeys turned 50 on August 2! We held a little party for her with lots of fun enrichment. Maya is still very sharp and in great health, although we do manager her on a Quality of Life program with our Vets. Every day she is seen active and playing with Elena, the two-year-old who she took under her wing after she was mis-mothered.



Maya the Spider Monkey turned 50. Photo Primate team.

Our baboon troop is at a stable number of 25 and all juvenile and adult females have now been contracepted. Interestingly, we are seeing our juvenile females come into oestrus earlier and earlier. No doubt, the increase of breeding animals and infants is speeding up the sexual maturity age. The infants are now playing with siblings and adventuring from mums as early as one month old, which is such a great change from the first few babies we had. It's really heart-warming for our visitors to see 12 kids running amuck!

New ramps designed by our assest team were installed in our baboon dens allowing easier access to the heated platforms for the older and arthritic individuals in the troop. It's really nice to see them using the ramps and to know we're making life easier and more comfortable for them.

We have been closely monitoring the behaviour and health of our sibling group of three Cotton top tamarins. For the past few months, free catch urine samples have been collected several times a week from the two females as they have been having urinary tract infections on and off in conjunction with acidic urine. We have been attempting to manage this with medication and changes to their diet. There were concerns for one of the females, Adriel, in particular as she was presenting with a consistently and extremely wet urogenital region. In house examinations under anaesthetic resulted in a few concerning findings, such as kidney stones and an unidentified mass. Although Adriel's wetness has reduced, Arjona the other female in this group is now presenting with a very wet urogenital region. With both of them having infections and acidic urine, the investigation into the cause, both medically and socially, is ongoing. We have been giving them Ensure daily to hide their medications, which they absolutely love.

In mid-August, we started swab training with the gorillas and orangs, which would allow us to screen them for coronavirus (COVID-19) should we need to. With the aim to be able to swab the back of their throat, after just one week of daily sessions, the gorillas were allowing the swab to make contact with the back of their tongue while holding their mouths open. We have no doubt with a few more training sessions we will be able to successfully test the gorillas for the virus if it is necessary.

Preparations are underway to move our Siamang family from Japanese Garden to the enclosed exhibit at the Orang-utan Sanctuary. Crate training with our male Isidor and young female, Kemala, is underway, while our female, Sampit, will be hand injected as she will be having a dental procedure prior to being moved.

Primates Compiled by Harna Burton & Ashleigh Krievans

TARONGA ZOO TARONGA INSTITUTE OF SCIENCE AND LEARNING,

Institute keepers have had a roller-coaster of a year – with unfortunately more lows than highs – the general feel that 2020 has chuckled at us thus far.

After successfully training seven year old male Quokka, CJ, he stole the lime light in the Woodlands Immersive classroom for only a short time before the pandemic cancelled all school excursions. This gave us time to progress our one year old Quokka joey, Margi, who had been on a long and steady training program to ready her for life in the spot light since her mum, Pep, first started showing signs of pouch young. This all rapidly changed when Margi presented with a swollen eye on a Monday, CJ then started coughing while eating on the Tuesday and by that Saturday they had both passed away. The necropsy showed a novel herpes virus which has never been recorded in any macropods. Our vet and pathology team are still investigating this horrible virus which took over their little bodies so extremely quickly.

Another devastating loss was Southern Hairy-nosed Wombat joey, Waru, who was being hand-raised by two wonderful keepers, Suzie and Andrew. After many struggles with nutrition, bone density and hip operations, the heart-breaking decision was made to euthanize the little man, as the ongoing procedures and life quality would not be fair. All who were lucky to meet Waru were wowed and the learning opportunities about the species will be put to incredible use with scientific papers sure to be published.

In happier times, we have added Fire-tail finches to our bird collection in the Woodlands classroom – filling the room with constant flitters and movement. The Superb parrots and Bush Stone-curlew didn't seem to mind the 'baby car alarms' moving in, with nest-building from the finches commencing only a mere few weeks after move in. The light fitting has so far been their favourite spot (face palm).

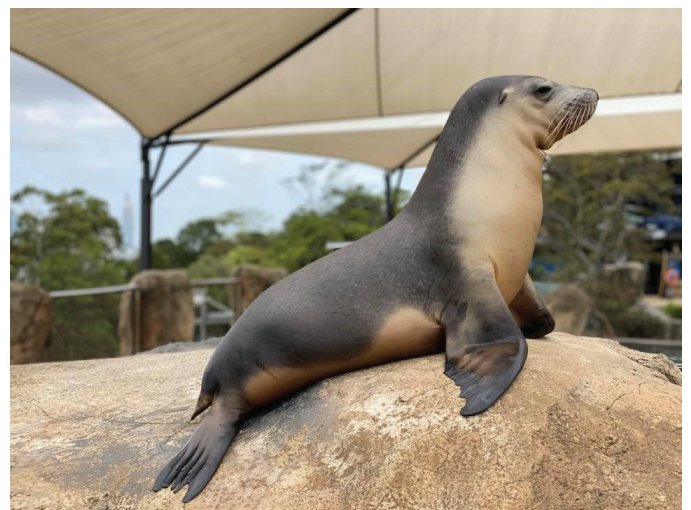
We have added a nestbox for the Superb Parrots which is an amazing talking point for the teachers, especially after the devastating bush loss over the summer. The Superbs have taken to the box immediately, much to the keepers' relief as they decided the leaf litter floor last year was a perfect spot to try – Bush Stone-curlew lurking and all.

Grace Black

MARINE DEPARTMENT

Taronga Zoo is one of only a few institutions in Australia that house the endemic Australian Sea Lion. Currently housed at Taronga are two females; Nala an 11 year old born at Taronga and Tarni a four year old, rescued near Baird Bay, South Australia. We also have three males of various ages, Charlie 13, Moby 3 and Torre (almost two). Over the last six years we have had three male pups born at Taronga as a part of the regional breeding program. In November 2019, Nala was confirmed to be pregnant in an ultrasound, making it her second time with a pup sired by Charlie. Marine keepers were ecstatic with the news and are continuing ultrasounds with vets regularly to get development information of the growing pup. With this information we are also able to predict an estimated date of parturition. Australian sea lions are one of the rarest sea lions in the world and differ to other species of otariids in their gestation. Australia sea lions have a 17.6 month gestation, almost six months longer than other species. We are now coming towards the end of Nala's pregnancy and keepers are beginning to make modifications to holding areas including a short barrier in front of the water which will allow Nala to go in, but stop the pup from following. We will also be utilising our purpose built raiseable-floor pool, which allows us to create a large dry pen and appropriate water depth so that the pup gains confidence in swimming in shallow water before adjusting it deeper.

Our trainers have been working on crate training Torre (pictured below) who will be relocating within the coming months to Sea World. This will make him the second male Australian sea lion Taronga has relocated to Sea World in the last two years.



In June this year, our eldest Australian sea lion 18 year old Malie, was euthanised after weeks of declining health. He was born at Adelaide Zoo and is succeeded by his offspring Nala and Max. The marine department have felt the loss of Malie hugely. He was involved in many media appearances, behind the scenes and in meeting people of

all abilities including many Starlight Wish children and their families. His sweet and gentle nature made him the perfect candidate for these roles. Malie will be missed from Taronga's Seals for the Wild presentation where he was relied on for many years.

In October 2019, Taronga received a juvenile female Fiordland Crested Penguin from Melbourne Zoo, who was brought in through their wildlife hospital. She was named 'Tahi' after Pio Pio Tahi, or Milford Sound in New Zealand. In February this year Tahi went through her moult, and although lethargic during this time she showed additional symptoms that indicated illness. These indicators included drinking sea water from the pool, spending extended periods of time laying down and passing unusual faecals. Keepers sent her to Taronga's Wildlife Hospital, where she passed away overnight and upon necropsy was discovered to have Avian Malaria. Following this, we tested bloods for all four of our Fiordland penguins to check for malaria, but none came up positive. Taronga's marine department have never had a loss of a bird from this disease prior to Tahi.



Tahi a Fiordland Crested Penguin

Bird Show

Bird Show relies on a series of releases (manual and automatic) to be able to manage the large number of birds that free-fly during the experience. Some of these releases cater to whole flocks, as is the case with our Sulphur-crested Cockatoos, which free-fly as a group of five. Within the last 1-2 months, the manual release for these birds required panels to be replaced. These panels were much more reflective than the previous release materials and resulted in the Sulphur-crested cockatoos showing aversion behaviours (and therefore not loading into their release). To address this behavioural concern, two members of the Bird Show team commenced a counter-conditioning program. The birds were removed from our free-flight experience and were initially positively reinforced for being in the presence of the new reflective panels. Each bird had a different "comfort" distance. We only approached (and subsequently positively reinforced each individual with sunflower seeds) when the cockatoo would shift their weight towards their release compartment. The following successive approximations were to consume baited seeds from within the release (initially on hand), to step into/out of the release, to step onto their perch, to allow the door to be closed, to wheel the release trolley (as the release mechanism is on wheels and is shifted into position for free-flying), and then to build duration for all approximations. Within 1-month, two individuals were successfully free-flying again. Recently, another two have joined them, however we are still counter-conditioning "Gilbert". It has been a reminder of the need to focus on the individual and expect outcomes to be varied as a consequence of this focus.



Bird Show also conducts trials for any enrichment strategy provided to the birds in our care. Currently, one team member is trialling our raptors' engagement with frozen duck feet. We use a scoring system of 1-5 (for a complete score of 10) assessing latency to approach and duration of the interaction. Poorer latency scores can reflect disinterest or neophobia, so additional notes are taken to assess engagement. A minimum of five data points will be collected per bird (with the enrichment strategy being provided once every two weeks). Previously duck feet were provided thawed, however over time, engagement duration has decreased. Initial observations suggest the frozen duck feet result in longer periods of activity. Goal behaviours include footing/grasping "prey", shredding via the beak, and feaking (i.e. cleaning the beak by rubbing on a surface), as well as increasing feeding durations.

Brendan Host

PRIMATES

The last six months has been a very busy time across the primate unit.

In early December we sadly lost our alpha male chimpanzee, Lubutu (above right). Lubutu was an incredible alpha male, firm yet caring, supportive and fair and was a great role model for the other male chimps. He died suddenly on exhibit one evening from what was later found to be a heart attack. Thankfully some primate staff were still on site and witnessed the chimpanzee group's reaction to his sudden death. They were seen trying to rouse him and trying to get him to move but showed no aggression towards him at all. With a large group of 20 chimpanzees that have the ability to inflict damage on each other, it was clear to see they had nothing but respect and concern for him at that time. Lubutu was much admired and respected by not just the chimps but by everyone who met him and knew him. It was a tough time for the keepers and is still sorely missed by all. His legacy lives on in his offspring and his son; Furahi's, resemblance to Lubutu has keepers doing an occasional double-take thinking he's still there. The group still has been unsettled yet quiet in the months following his death. They don't appear to have selected a new alpha although the five other adult males have all gone through periods of displaying and confronting each other and the females, but none have appeared to have taken over just yet. It will continue to be interesting times in the chimp community in the months ahead. Vale Lubutu.

In other news the primate unit recently welcomed some new arrivals.



Two male Ring-tailed lemurs, Dia and Toki, arrived from Taronga Western Plains Zoo and have been introduced to the other six males currently at Taronga Zoo Sydney. All appears to be going well with the group now cohesive and new bonds forming between the eight.



Two male Bolivian Squirrel monkeys, Vampir and Vivo, arrived from Brooklands Zoo, NZ, in December and after a few hurdles they have now been introduced to our group of ten females. Although the introductions were nerve-racking with added complications of a large moat surrounding their exhibit, Vivo being quite an inexperienced male and us not having a breeding male in several years, all has gone quite well so far. There have been the usual scuffles and wounds and Vivo even sustained a broken jaw, however fingers crossed they can all continue to live together now that breeding season is coming to an end. All ten females were mated within the first week and we may start to see some squirrel monkey

infants appear in the next couple of months.

In March we also welcomed another set of twin Cotton-top tamarins to parents Esme and Diego. This brings our total to seven Cotton-tops. Older siblings, Teo, Nacho and Lolita are proving to be excellent siblings and were all seen carrying the new arrivals although they are now big enough to fend for themselves. The twins are two males, Mateo and Santiago. Their oldest brother, Teo, will soon be heading off to Brooklands Zoo to join with their female. He has had plenty of experience with assisting his parents with child minding so we hope he will make an excellent father himself.

We managed through our shut down earlier this year and our thoughts are with all Zoos Victoria staff as they get through their second round in this crazy time of uncertainty.

Laura Fidler

BROOKLANDS ZOO

The recent introduction off-display of two young female meerkats from Wellington Zoo to our existing mob of three females was the perfect opportunity to engage in some habitat maintenance that we have been looking forward to implementing. The meerkat habitat is a repurposed older style mesh-covered bird aviary with glass panels running along the front for our visitors to view the meerkats. While the meerkats did and still do utilise these panels for sentry duty and out of interest in the goings-on in the zoo grounds, they also enjoyed using a basic ramping system we had installed at the rear of the habitat that allowed them views from heights of up to 2.5m above ground level. A small platform area let them see both keeper areas and a majority of the zoo grounds as well as accessing various areas of sun throughout the day. Due to the success of the initial ramps, we decided to extend and increase the complexity of these ramp systems, installing 4 platforms in various locations (including one with a heat source) and heights, as well as multiple ramps on half of the habitat walls. Not only do the ramps increase the fitness of our mob and reduce unwanted behaviours to nearly non-existent levels, but natural behaviours such as sentry have increased, the meerkats have significantly more usable habitat space and our visitors love seeing active meerkats at various locations throughout the habitat.

Maxine Jenkins



Brooklands Zoo Meerkate exhibit is a repurposed older style mesh-covered bird aviary - above and below.



MONARTO SAFARI PARK *Lions*

It has been an incredibly busy time on Lions over the last few months despite the unfortunate closure of the park due to COVID.

We welcomed four cubs from first time mother Husani in January after the successful introduction of three males in September 2019. Keepers monitored behaviours and interactions then when the time was right, successfully introduced the cubs to the rest of the Pride. The boys appeared unsure what to do with these fluffy little bundles to begin with but quickly realised they are nothing to be afraid of and in fact make pretty good playmates!

The cubs are now six months old, they are confident, have their own individual personalities and are regular visitors at our Lions 360 experience.

Unfortunately, just a few weeks after the birth of Husani's

cubs, another of our females, Nia, lost her litter of five due to complications during birthing. We are happy to say she has recovered well from her caesarean and we are hopeful that she will soon be able to contribute to our growing Pride.

Hyena

We welcomed back two males, Gamba and Mkoko back from Adelaide Zoo. Gamba is happily paired with Forest with the aim of increasing our hyena numbers. Gamba has had some issues with his eye over the last few weeks and has been suffering with uveitis. We were very lucky and our maintenance department jumped at the chance to create a special chute (below) for us to successfully administer his eye drops and are happy to say he has now almost fully recovered. Training has resumed since COVID restrictions have been lifted slightly, the hyena have been very receptive and we are working towards being able to conduct conscious blood draws in the near future.



Painted Dogs

On the 31st July the difficult decision was made to say goodbye to one of our Painted Dogs Jengo.

Jengo was 11 ½ years old and was suffering from some age-related issues. This has been a difficult time for his son Gibby with whom he was housed, keepers have been spending extra time with him and coming up with creative forms of enrichment to keep him busy. We are hopeful for a positive future for Gibby and looking forward to confirming dates for his transfer to Perth Zoo to begin his own pack.

After months of mesh contact, keepers were successfully able to introduce our pack of Painted dogs late last year. During the closure of the park, keepers and maintenance

worked hard to build two incredible dens in their exhibit fitted out with cameras in preparation for the birth of two litters of puppies. Unfortunately, both Bulu and Penda mismothered but the cameras did show some really positive behaviours and keepers were happy to see the males step up and support them. We are hopeful for a more positive outcome next breeding season as the pack appears more cohesive and continues to thrive.

Cheetah

Keepers are eagerly awaiting the arrival of our new breeding male called 'Lion' from Symbio Zoo once borders are opened and restrictions lifted, so we can begin another successful breeding season. We would be hopeful to breed at similar times to other institutions, resulting in litters being born of similar ages. This would give us the possibility of establishing more coalitions and therefore freeing up space for more regional breeding.

Keepers had to take a step back from training during COVID but have now been able to resume their programmes while following the regulations and PPE guidelines that are in place. The cheetah have responded well with the training and we have been successful in conducting conscious blood draws as well as vaginal swabbing on our breeding females. The vaginal swabbing enables us to map their oestrus cycles as well as assisting one of our vet's, Dr Jerome Kalvas, in his exciting research in vaginal cytology.

Ungulates

We welcomed a little female White Rhino calf on July 22nd 2020. She is doing very well and as rhino calves seem to do, she tears around the exhibit flat out, until she's exhausted, then sleeps the rest of the day. Keepers needed to treat her for an umbilical abscess which luckily cleared up and never seemed to impede her.

Our single male Bongo 'Isaac' was partnered up with two male Nyala and all seems to be going well in their very scrubby area.

The keeping team are planning for the upcoming move of various ungulates into our new Wild Africa precinct. The fencing is almost complete. The first paddock is 180 acres, with various undulations, scrubby areas and safari tracks. We have been in discussion with The Wilds and Fossil Rim in the USA on how they manage and count all their animals each day. Once this paddock is stocked, we will begin focussing on the next area which is 570 acres, so this first one is our taster for things to come.

Primates

The Chimps have reacted well to Monarto Safari Park re-opening and having visitor's onsite. The team did notice a few changes in the chimps behaviour during the closure period such as the males displays being of shorter duration and the younger chimps being very interested in everything keepers were doing (they can be quite interactive with visitors at our viewing windows).

The youngest member of our troop, Zola, turns one this month. It has been fascinating for the team to watch the interactions between different family groups (a first for our troop) with 18 month Hope (offspring of Hannah), 4 year old Enzi and nearly one year old Zola (both offspring of Zombi) spending large portions of the day together. The first chimp ever born at Monarto - Zuri turned eight in August and is proving to be a fantastic big sister to Zola, often watching over her whilst Zombi naps.

The last few months have been very busy completing the final finishes on the new Lemur exhibit. At the end of August we recieved 1.8 Ring tail Lemurs from Australia Zoo. They have settled in to quarantine well. We are also set to receive a male from Perth Zoo and will be working on introducing the two males together over the coming weeks before adding the females to the mix. It is great to have Lemurs onsite. In the new year we hope to start up our walk through Lemur experience.

ADELAIDE ZOO

As many may know, Adelaide Zoo added aerial walkways to our Black and White Colobus Exhibit in late 2019. The original Colobus Exhibit was 100m2 and the tunnels themselves added another 83m2 of space, almost doubling the area available to the colobus. We have been pleased to see that not only have keepers been seeing many positive behaviours since the addition of the tunnels but data now supports the same conclusion! Our Zoo Watch team carried out activity budget studies both before and after the addition of the tunnels and we have been pleased to see a significant increase in locomotion, feeding and social behaviours and a significant decrease in resting behaviour. The results of the study show that after the tunnel addition, the behaviours of the Colobus at Adelaide Zoo were increasingly similar to that of wild colobus.

In December 2019, Adelaide Zoo also imported three female Black and White Colobus from France and after a month in quarantine we moved them to their new exhibit. Currently the three females are housed separately to our existing group of two males and a single contracepted female. Our plan is to create two groups of colobus (1.1

and 1.3) later this year and with any luck 2021 we will see Black and White Colobus born at Adelaide Zoo for the first time in our 137 year history. We will keep you updated

Jodie Sheridan



• ASZK • MEMBERSHIP STATISTICS

237 FULL MEMBERS

1 FULL PARTNERS
MEMBERS

37 ASSOCIATE
MEMBERS

0 ASSOCIATE
PARTNERS

7 RECIPROCAL

22 CORPORATE

13 LIFE MEMBERS

1 OVERSEAS

3 OVERSEAS
CORPORATE

TOTAL 321



• MEET AN ASZK MEMBER •

Michael Vella

REPTILE KEEPER
CURRUMBIN WILDLIFE SANCTUARY

How long and whereabouts have you worked within the zoological industry?

My zookeeping career started as a volunteer at Ballarat Wildlife Park back in 2001. Since then I've worked for Zoos Victoria at Healesville Sanctuary, with a short stint at Melbourne Zoo in between, working native mammals, birds and moving onto a training and presentations role with Healesville's Free Flight Bird Show. I spent a year as a Vet tech at Massey Universities' wildlife hospital in New Zealand before coming back across the ditch to Currumbin Wildlife Sanctuary (CWS)

What is your favourite animal and why? !

My favourite animals are my dogs Goldie the red and gold Kelpie and Whiskey the staffy x lab. I love their quirks and willingness to impress us. I've managed to train Whiskey some detection skills of finding my often lost wallet and keys. Goldie is a retired sheep dog who is more of a couch potato these days but loves rounding up white fluffy sheep like dogs. To answer the question as intended, among my favourite species are bats, especially micro-bats, snakes and crocodilians. I'm generally attracted to misunderstood and commonly unloved species

What is your favourite thing about Currumbin Wildlife Sanctuary?

The people that work at CWS are nothing short of amazing. The skills and passion of the staff here constantly inspire me to better myself. I love the natural setting of the property and the fact that it is protected land, safe from the ever increasing development that surrounds it makes it a very special place!

What changes or improvements would you like to see in the future of zookeeping/aquarists?

The progression toward improving animal welfare has given me strong hope for zoos in the future. I want to see this trend progress in to the future where the species kept are chosen for their suitability to captivity and our best ability to provide them with rich and fulfilling lives. Increased resources based around improving the livelihoods of our captive animals.



What is your greatest animal achievement thus far?

I have been involved in wildlife rescue and rehabilitation with local wildlife. I do find it quite rewarding to successfully get critters back to health and back to their freedom. I've rehabbed quite a few snakes and lizards over the last four years or so and have done some work rearing and rehabbing wild micro-bats too. As far as achievements in the zoo industry go, although we haven't achieved breeding just yet, working with the critically endangered Kroombit Tinkerfrogs would have to be one of the more important projects I have been a part of.

What is your most memorable experience with wildlife?

Having Yellow-eyed penguins walk right passed me from the beach and up into their burrows. I experienced this in New Zealand, just south of the Otago peninsula.

What is your most embarrassing zoo/Aquarium moment?

I've got a fair amount of public presentation experience where you can quickly learn not to take yourself too seriously and embarrassment occurs less and less. In saying that, going back to my earlier days as a presenter, after having completed a wildlife presentation, I happily walked off stage and headed to an enclosure where the Golden Brush-tailed Possum I was handling lived while singing to myself "a little less conversation, a little more action" in an exaggerate Elvis voice. Returning to stage I was welcomed by the remaining guests with a big round of applause (I'd left my microphone headset switch on without realising). On another occasion, I giggled my way through a bird show while one of my female work colleagues performed a mock strip tease from the side of the stage hidden from public view.



Coming out of her shell

MARINA AXIA, WILDLIFE SYDNEY ZOO

Piggy is the (very original) name given to the beautiful pig-nosed turtle, *Carettochelys insculpta*, that lives in the Kakadu Gorge exhibit at WILDLIFE Sydney Zoo (WLSZ). She has been housed at WLSZ since 2015 and has always been a very timid creature who seemed afraid of her own shadow until a dedicated team of keepers began to work on encouraging her to come out of her shell. Up until recently her shy nature made husbandry tasks very stressful for both her and the keepers. Even enrichment items were often being rejected and if it was an item she was unfamiliar with she would panic and dart around her pond displaying strong avoidance behaviours and high levels of stress. Increasing her confidence around enrichment items, cleaning equipment (nets, etc) and keepers was the purpose of the training with the long-term goal of performing voluntary weights & body condition checks.

How I started

Piggy's pond consists of two parts. A deeper end that is hard for keepers to access which consists of the public viewing glass, and a shallow end that ends with the gate where keepers access. My initial goal was just to get piggy feeding from the shallow end. I started by just throwing her diet in this end and sitting at the end of the shallow pond, watching her feed. This allowed me to see which food items she considered high value, what she ate and didn't eat.

Time of sessions

Piggy's sessions would last anywhere between 10 mins to an hour. I spent a lot of time with her in the early months, watching her behaviour closely and getting her used to my presence.

Training and Conditioning

After figuring out her food preferences, I started to establish a cue. Every time she came to the shallow end to feed, I would put my hand in the water and splash gently. As expected, Piggy was terrified when I did this the first couple times but soon become more and more comfortable and eventually, I was able to get her to come on cue.

After consistently coming to the shallow end on cue I only threw her food closest to the gate where I sat, bringing Piggy closer to me. She adapted quickly to this and was comfortably eating at the bottom of the pond near me.

The next step was getting Piggy used to my hands/arms in water.

I started off slow by just adding my fingers in the water, then my whole hand, then up to my forearm and then... I hit a roadblock. This is where Piggy stopped progressing. She was okay with my hand in the water but that was the most I could get without her becoming agitated and as a result, I had to change my tactic.

There is a little shelf near the surface of the pond close to where I sit during these sessions, I decided to start putting Piggy's food there and see if she would come closer to me. It worked! Piggy had the courage to eat from the shelf! Over the course of a few weeks she got to the point where she was comfortably and consistently coming up and taking part in these training sessions. I still wanted to get her used to my hands and associate it with a positive experience. I started holding a piece of carrot just under the surface and eventually Piggy came right up and took it out of my hand!

I started doing this more often and continued moving her food closer to the surface of the water. Using hand-feeding and shelf feeding, Piggy would start slowly climbing up to reach it and exposing parts of her body out of water by climbing up this shelf!

Today

The next stage was to introduce touching, to establish this behaviour I would slowly start moving my hand near her while she was feeding until eventually, I was making contact. This is where I currently am in my training progress and there have been times where she completely refuses to come to the shallow end but there have also been times where she's allowed me to touch her multiple times without reacting. She is a very timid animal by nature but her progress is incredible and has improved all aspects of her husbandry. Keepers are now able to use large nets to clean her enclosure and she has even started warming up to enrichment, instead of shying away, she actively engages with her items.

We have seen tremendous progress with Piggy over the last eight months and we are hopeful that we can continue to work with her to provide the best level of stress-free care for her.



Masks for Sunbears

We are all aware that this has been an trying year so far, and funding for many organisations has been affected, including the Sumatran Sun Bear Team (SSBT). SSBT have had an offer from a supporter to help raise some funds. Kath Spence has been making and selling masks and will be donating the profits to SSBT. The masks are triple layered, pre-shrunk cotton with some fun designs to choose from. Many of them are beastie themed including bears, zebras, leopards, tigers, sloths, Australian mammals and birds, farm critters, bees and dragon flies, jelly fish and flamingoes to mention just a few. (Kids sizes also available)

They are just \$10 each (+ a couple of dollars for P & H) This is one nice way we can protect each other, the environment and Sun Bears!!

To see the full pattern range or to place an order, contact Lesley at sunybear@bigpond.net.au



