

thylacinus



Cover photo: Cassowary on eggs.
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FROM THE DEPARTING PRESIDENT

Mike Drinkwater

Dear members,

After six years serving as president of the ASZK, I recently made the decision to hand over the baton and allow for a new group of individuals to steer the society into the future. Aside from the role of president, I've also managed to clock up a decade on the ASZK committee, a time that has been extremely rewarding on so many levels. The ASZK has seen me travel across the region and meet so many amazing zoo people doing the most incredible stuff. It truly has been an honour. So much so, that I am sticking around a little longer as a general committee member and still trying to help out as much as I can.

During my tenure, we are proud of the fact that we have grown exponentially in this time. We now have;

- the strongest membership base in the society's history
- taken a social network from zero, to now fast approaching 8,000 followers
- electronic membership and registrations
- designed and launched two refreshed website platforms
- a growing, robust and active career advertisement platform
- the highest level of financial contribution to conservation ever for the society
- delivered highly successful annual conferences and training workshops year on year
- incorporated the ASZK Animal Training Community

None of these successes would have been possible without the help of so many wonderful people who have served on the committee over so many years. Most notably for me, are the ASZK warriors Liz Romer and Jocelyn Hockley who continue to give so much of themselves for the betterment of others. It is often a thankless task, and these two amazing women sign up year after year and remain the most active committee members, always! A very special thank you from me to you two amazing ladies.

As with all tenures, your work is never done and there is never a perfect time to step down. However, I do truly believe that it is time for individuals who are currently working as zookeepers to become more active in this space. After the recent elections, I'm pleased to say that we have a brilliant, demographically diverse range of keepers that have put their hand up to help, led by Chris Dryburgh, the former Vice President. It's really uplifting to see. I'm looking forward to the next few years, particularly in terms of watching a new era of zookeepers go after and develop the things that are important to them within their profession. Many thanks to all those I have shared a good story, and a laugh with over the years....there's been many!

See you round.... Mike

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IMPLEMENTING NEW STRATEGIES FOR THE IMPROVED MANAGEMENT OF THE WESTERN LOWLAND GORILLA (*GORILLA GORILLA GORILLA*) AT TARONGA ZOO.

Amy Carter, Primate Unit, Taronga Conservation Society Australia



When visiting a zoo, guests often expect to see animals at all times of the day. But what do we do if the animals refuse to cooperate? The breeding troop of Western Lowland Gorilla at Taronga Zoo are a relatively newly formed group, being introduced and integrated over the last seven years. During this time there have been challenges in providing visibility of the gorillas to the zoo guests. In the last 10 months a new strategy has been implemented to improve this while also providing positive welfare outcomes for the gorillas.

By using a variety of behavioural husbandry techniques such as positive reinforcement, operant conditioning, enrichment, recall and cooperative slide movements Taronga's Primate keepers have established some solid foundation behaviours in the gorilla group.

One of the major challenges has been social issues within

the troop. The silverback Gorilla, Kibali, came to Taronga young and naïve and therefore has had to learn a lot about how to form positive relationships with, and also lead and discipline, his troop members. Also, one of the adult females was partially hand raised and does not always display species-appropriate behaviour, particularly with regards to the silverback.

In August 2018, Taronga implemented this intensive reconditioning gorilla project in an effort to improve social cohesion, animal welfare and visibility to our guests.

It is clear that both the physical environment and animal behaviour play vital roles in this. Firstly the exhibit itself was modified making the space more 'user friendly'. This included putting up a retaining wall to make more usable land space and then building high platforms to increase

and provide more complexity and a greater number of resting areas, allowing the gorillas to feel comfortable. The exhibit was also lined with turf and a few trees removed to maximise useable space for the animals. In addition to this some of the electric fences were either completely removed or at least from the base of the trees in an effort to maximise comfortable space for the animals.

From a behavioural perspective, a recall was positively conditioned with the gorillas in the two exhibits and in the dens to make it clear where we wanted them to be. The criteria for the recall in either exhibit are to be present in the area and not displace any other animal. However, inside the dens each gorilla has a station that they must directly go to.

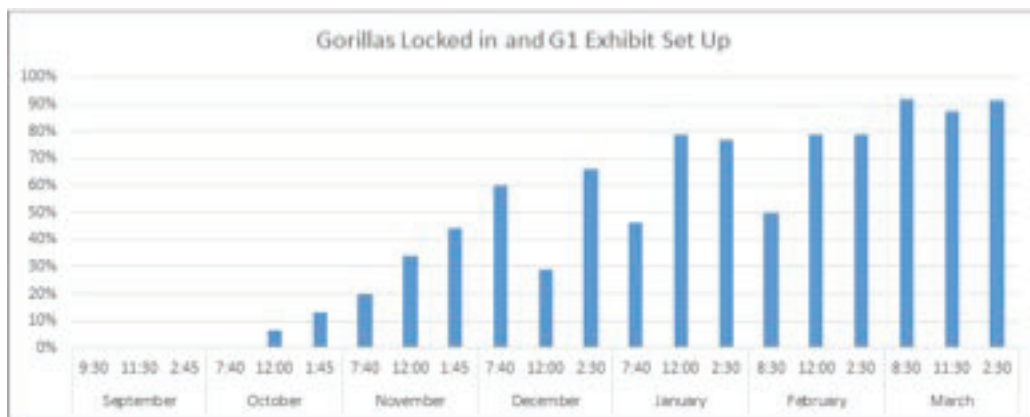
The next step was to condition the animals to allow slides to close and either of the two exhibits to be accessed by keepers. Historically the silverback and female gorillas had been known to block these slides. Therefore the slide movements were trained under stimulus control in small approximations until the slides could be easily closed with no animals leaving their stations. Should a gorilla break station, the slide that was being closed would not be opened until the gorilla went back to their station. The theory behind this is that by using what the gorilla wants most in this scenario (the slide to be opened) we can shape the cooperation and positively reinforce the gorilla when they return to their station. A combination of small amounts of fruit, nuts and cooked vegetables were used to reinforce the gorillas and recondition slide movements.

Once a slide is closed and the exhibit can be accessed, all gorillas are recalled into the alternate exhibit. This is to remove and reduce the tension that could potentially build inside the dens whilst the other exhibit is being set up with food and enrichment. By teaching the animals an incompatible behaviour, it reduces the risk of gorillas displacing each other, and keeps the process positive for all animals. It also gives a place and purpose for excess energy that the gorillas may have.

The exhibit that the gorillas have been locked out of would then be set up with enrichment, preferably fixed items that the gorillas have to work at to get the reinforcement such as mesh cubes, smear boards, or a termite mound.

Initially, set up needed to be quick, 10 minutes, but over the past 10 months this has been successfully increased to over an hour, with the gorillas maintaining calm dispositions.

When the gorillas are given access back to the exhibit data has been collected on the amount of time the gorillas then spend out on display (see graph below).



It is clear from the data collected so far that there is an increase in time spent on exhibit for the gorillas, therefore improving guest experience. In addition to this there are other benefits from this behavioural husbandry project. Group cohesion appears considerably better and less displacement has been observed within the troop dynamics. With further effort, this will continue to improve and will ultimately achieve the goal of providing a reliable and engaging guest experience. By using these operant conditioning techniques paired with positive reinforcement, gorilla cooperation and relationship with keepers has greatly improved, ultimately improving the management and welfare of the Western Lowland troop at Taronga Zoo.



KEEPING GIANT LIZARDS

Jake Meney - Australian Reptile Park

The Komodo Dragon is undoubtedly one of the spectacular and recognisable species on the planet! Whilst most are familiar with the species and its distribution, many are shocked to realise the world's largest lizard went unnoticed to western science until the year 1912. Following its formal description by the Dutch scientist Ouwens it almost immediately made its way into captivity, becoming a highly sought after species for display worldwide.

By the early 1960's a small group of wild caught dragons had reached our shores and in 1965 were first bred in an Indonesian facility. It would be another 23 years before the species was first reproduced outside Indonesia at the National Zoo in Washington DC, USA. The exhibit in which this occurred set the standard at the time and paved the way for continued reproduction in the United States and Europe.

By 2004 *Varanus komodoensis* was a reasonably well represented species in Indonesia, the US and Europe, however this was not the case in Australia. Just eight dragons were being held in only two facilities. There was a need for an import and that import took place in November 2012.

The Los Angeles Zoo had hatched a clutch in August of the previous year, seven of which were imported and quarantined at Taronga Zoo, Sydney. The Australian Reptile Park was fortunate enough to receive two of these newly imported dragons, a male and a female.

Named "Kraken" and "Daenerys", they became an immediate hit with staff and visitors alike.

Whilst housed off display, the two lizards quickly became accustomed to daily walks, incredibly enriching and

beneficial to the dragon and an experience most visitors will never forget! When else to you see an 8 foot lizard on a leash!?

In November 2018 the time had come to finally construct an exhibit for the two growing lizards. Our male is currently a touch over 40 kilograms and is about twice the size of the female as is typical in all Varanid species.

The exhibit follows the design of a Balinese temple with detailed features in the entrance and viewing area of the exhibit. Underfloor heating and reverse cycle air conditioning keep the exhibit hot and humid just as would be experienced stepping off the plane in Indonesia. A creek flows through the two exhibits and is used frequently by both lizards. It is not uncommon to see the girl swimming completely submerged.

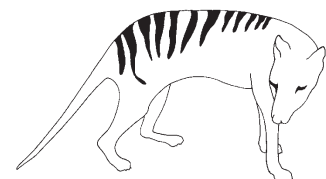
This is the first time the Australian Reptile Park has had this incredible species on display and this exhibit has only increased the level of education and interaction that takes place with these two beautiful lizards! As a reptile keeper there really is nothing that comes close to a Komodo! Their naturally inquisitive nature and level of affection is truly unique and they are an absolute pleasure to work with! I can only hope I get the chance to work with this species for a long time to come and that this special lizard has a long and successful future within the Australasian region.



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Please let us know so we can continue to send you thylacinus.

Contact Caroline Monro
Caroline.Monro@merlinentertainments.biz





ANNOUNCING A KOMODO DRAGON AND OTHER LARGE VARANIDS WORKSHOP- 21ST – 23RD OCTOBER 2019

The Reptile Taxon Advisory Group (Reptile TAG) in conjunction with ASZK will be running a joint workshop Komodo Dragons and other large Varanids – Ecology and Captive Husbandry hosted by Alice Springs Desert Park.

This workshop will concentrate on both the wild ecology and contemporary captive management techniques, husbandry, breeding and special requirements for the care of both Komodo Dragons and other large Australian monitor lizards. This will be a professional development opportunity for Reptile Keepers to increase their understanding of these areas, the principles of which are also applicable to a number of other reptile species, and network with other like-minded individuals. Hosted by Alice Springs Desert Park, this unique location will also allow for field observations of reptiles and other wildlife to take place.

More information and how to register will be on the ASZK website shortly.

CALL FOR PAPERS

We are open to abstracts in all areas of both captive management and wild biology of Varanid lizards for presentation at the workshop, 21-23 October, Alice Springs.

Please send a short abstract of your proposed paper or poster to Alex Mitchell at amitchell@zoo.org.au

The abstract should include:

- The paper or poster's title
- Presenter's institution, name, title, and a short biography
- Presenter's email address
- No more than 400 words summarizing the intent of the paper.

Presentation of papers must not exceed 15 mins, except with the prior approval of workshop organisers. An opportunity for questions and answers will be conducted at the end of each paper session.

A complete written copy of the presentation paper, suitable for publication must be submitted at the time of paper presentation. Full presentation papers may be published in upcoming issues of the Reptile TAG newsletter and/or the ASZK quarterly journal, "Thylacinus"

Please note that due to high demand and limited space, some paper abstracts may not be selected for the program. Papers that are not selected may be offered the opportunity to present in a poster format as an alternative option.

Supporting

KOMODO
SURVIVAL
PROGRAM



Bush Stone-curlew Conservation – Using Broody Hens to incubate and raise Bush Stone-curlews

Kara Stevens - Oakvale Wildlife Park

Bush Stone-curlews are listed as a Threatened species in New South Wales, Victoria and South Australia with declines seen over much of its former range in Southern Australia. Curlews are under threat from habitat destruction, land clearing, uneven fire regimes and invasive species.

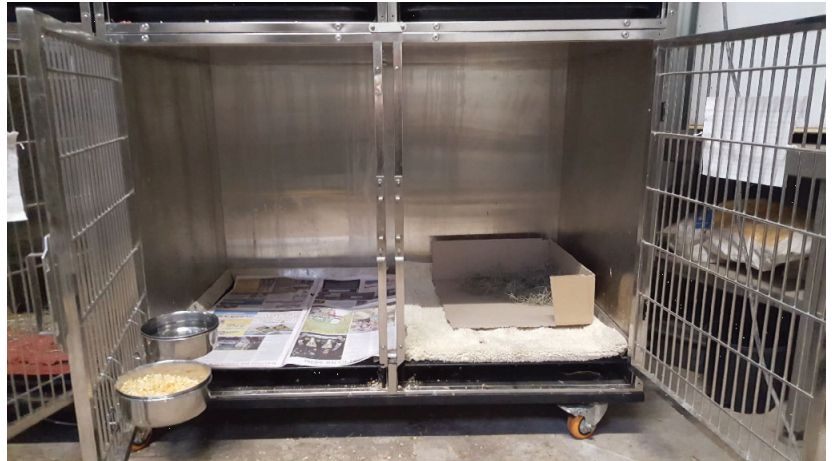
At the Curlew Summit held in May 2018 our Curator met with Bertram Lobert who presented a proof-of-concept trial to determine whether brooding chickens could incubate, brood and raise Bush Stone-curlews in a controlled environment. The trials will assist development of husbandry techniques aimed at helping rural communities and landowners becoming actively involved in Bush Stone-curlew conservation and re-build the human-curlew bond. A broody hen working group had been formed including Bertram Lobert (TFN), Els Tack (NSW LLS), David Watson (CSU), Helen Murdock and Jenny Wilson (GBCMA) and with collaboration with the GBCMA (Goulburn Broken Catchment Management Authority). To proceed the working group needed an institution who could facilitate the trials with Bush Stone-curlew breeding pairs and chickens.

Oakvale Wildlife Park decided to conduct the trials on site with project rationale, outline and goals developed by the GBCMA and the team at Oakvale developed the operational protocols and set up quarantine facilities to conduct the trials. At Oakvale there are two pairs of Bush Stone-curlews and multiple species of free ranging chickens.

Trials Begin

The trial was conducted between October 2018 – March 2019 where overall Six Bush Stone-curlew eggs were removed from breeding pairs and set up under different hens. As this concept was new to the industry there were multiple variables to be considered and to detail as much information as we could. Multiple species were used and documentation filled out daily so that some of these could be excluded over the trial.

The team at Oakvale all worked together to find hens brooding their own clutches of eggs



Quarantine facility for the trials

around the park. These hens were set up in the quarantine facility with some, if not all, of their own eggs, these hens were given curlew eggs when they were available.

A total of six hens were set up over the trial period, with only four being used in the trial. Six curlew eggs were transferred under the four hens throughout the season. The first four attempts were unsuccessful for a variety of reasons: cracked egg, disinterest, infertility. But later on in the season, after letting each breeding pair of BSC's incubate and raise their own clutch, we knew the viability was not compromised.

Some questions and variables that came up through the initial trials and became a discussion point. These included:

- Will different species be better at incubating eggs than others?
- Will the difference in egg colour and pattern be a factor for rejection under hens who typically have white or brown eggs with no patterns?
- Will they sit longer on curlew eggs? (Chicken ~21 days, Curlews ~26 days)
- Do we need to provide additional nesting material or keep it simple?

Some of these questions are ongoing but for the rest of the trials we were hopeful we would get another clutch and be able to change some of our set up. By the end of December, we had the two breeding pairs of curlews with their own parent raised chick and had transferred four eggs under surrogate hens.



Our last Clutch

In January 2019, we had great news about one of our pairs laying their last clutch for the season. Naturally, we were excited to try again with the surrogacy and before the lay date had two new hens set up. To minimise any variables, we took the simple approach and offered basic nesting material, taking what material was around the hen's clutch and leaving them throughout the entire incubation period. An egg from each hen's clutch was marked with permanent marker to see whether the marked egg would be rejected by the surrogate hen and then relate it to a curlew egg.



Transferring Curlew eggs

On the 11th February and the 15th February both eggs hatched under their surrogate hens. This was exciting news for the team and a great end to the season. But now... what next? We were so focused on getting any eggs through we had to now plan for the next stages.

Unfortunately the first chick to hatch out was compromised from the start, eyes not fully open, toes inverted, and vocalisations minimal, feeding response was also slow even with the surrogate hen trying to present the chick with food. On the 15th March the chick had passed but the second chick of the clutch hatched out. Immediately this chick was noticeably stronger, vocalising well, following hen and by end of the day, seen eating on its own.

There was a question as to whether the hen would brood the chick and offer the chick food and the right foods. Multiple items were set up at all times in the enclosure including: vegetables and fruit, scratch mix, mealworms and crickets and chopped hard-boiled egg and meat items. Surprisingly, the hen would only offer the curlew the insectivorous diet and there was no change in natural feeding behaviours.

Next stage and more questions

As the chick grew we had few more questions:

- Will the circadian rhythms be affected due to the diurnal/nocturnal differences?
- Will there be imprinting unsuitable for curlew release in the future?
- Can a healthy curlew be raised by the surrogate hen?
- Will the curlew continue with its natural feeding behaviours?

Each week we weighed the chick, noted close observations and kept hands off as much as possible so we could see if this trial could be implemented in future collaborations for successful releases. The chick grew remarkably, sticking close to its surrogate hen but also starting to show normal curlew behaviours. As time went by the bond between curlew and hen was strong but also some autonomy seen as the chick started to tower over its surrogate.



Immediate bond from hatching



Daily weights were taken for the first two weeks

Over time, the hen and curlew chick were transferred to larger enclosures, slowly introduced to other curlews and then by May, the curlew juvenile now separated completely from hen at 11 weeks of age. To this day there has been no adverse implications to the chick, however these are still early stages. Two important findings have been established: 1) that a chicken can successfully incubate a Bush Stone-curlew egg to hatching and 2) the hatched curlew can develop into a healthy young curlew whilst in the care of its foster chicken mother.

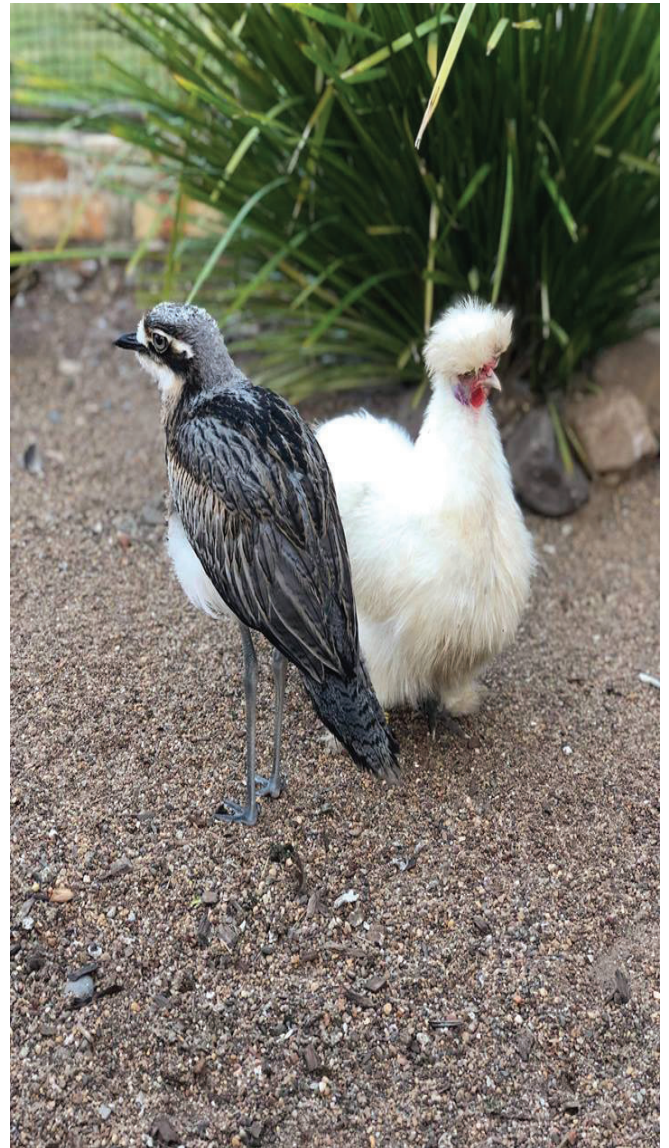
Additional trials using different chicken breeds under varying conditions would improve our understanding of the relative importance of different variables. But the successful completion of the initial trials is an exciting step in the research and to have this result in the projects infancy means future prospects look promising and we are very excited to see what the next season holds.

Special thanks and acknowledgements go to the following: Bertram Lobert (GBCMA Bush Stone-curlew project leader, who helped our research every step of the way)

Lachlan Gordon (Former Oakvale Curator who suggested Oakvale to hold trials)

Jan Lubke and Els Tack (For advice when our first chick hatched)

Victorian State Government (For funding this project)



Curlew and hen now



Walking with Meerkats – Applying learnings from the wild into the captive care and management of meerkats.

Louise Ginman Unit supervisor Carnivores, Taronga Zoo and Karen James, Senior Keeper Taronga Western Plains Zoo

Abstract

Zoo keepers the world over strive to provide the animals in their care with the highest quality husbandry and management available to them. The authors of this paper are no different and across both Taronga Zoo sites, have developed extensive experience in meerkat husbandry, exhibit design, introductions, breeding, managing aggression, capture and restraint, enrichment, training and conditioning. Despite their combined 30 years of Meerkat keeping experience, there is still a lot to learn about the social dynamics, behaviour and care of the Meerkat *Suricata suricatta*.

On a recent trip to the ‘Kalahari Meerkat Project’ in Kuruman River Reserve, South Africa, the authors were able to spend time with the projects researchers including the projects founder Professor Timothy Clutton-Brock to glean first hand and up to date information about wild meerkat behaviour, habitat use, diet and social dynamics while spending each day walking in and among wild meerkats. The experience bridged the gap between their collective knowledge of captive and wild meerkats.

Armed with this new knowledge, this presentation will highlight the latest information about wild meerkat behaviour, social dynamics and habitat type/use and inform future decisions on the housing, enrichment, husbandry and management recommendations for our captive populations.

Introduction

The Kalahari Research Centre (KRC) is located in the Kalahari Desert, on the Kuruman River Reserve. Described as one of South Africa’s most remote areas, the reserve is over 300km from the nearest town of Upington along an extremely rocky, unsealed road.

Serving as the field site for the Kalahari Meerkat Project (KMP) as well as several other long-term research projects the KRC has been operating on this site since 1993.

Founded by Professor Tim Clutton-Brock of Cambridge University, the Kalahari Meerkat Project continues to contribute to the understanding of meerkats. KMP is responsible for producing more than 200 publications

on the species, as well as providing access to film crews including the BBC and National Geographic. It sees interns work on the field for one year, collecting data and also provides a location for Masters, PhD and Post Doc students to study.

In 2018, Duma Safari’s offered a photographic safari including the Kalahari Research centre. The first of its kind to be allowed through the centre due to tour leader and co-owner of Duma Safari’s, Bobby-Jo Vial having previously volunteered there. Bobby-Jo, also an experienced Meerkat keeper, easily persuaded us to sign up.



Each day at the project saw us shadow the field scientist, observing and assisting in their research whilst tracking a group of meerkats. In total we were able to visit four groups ranging in size between 9 and 21 members. We would locate the groups in the morning, before dawn, using GPS if the location of the burrow they chose to nest at was known. Otherwise we would use radio tracking, as each studied group had one collared individual. Positioning ourselves at the mouth of the burrow ensured the best view as the meerkats would start to emerge, seeking the warmth of the sun.

As the meerkats were habituated, they seemed indifferent to our presence and only sought out interaction if reinforcement was on offer for weighing. The researchers would attempt to weigh each member of their assigned groups three times a day: as they emerged, after their morning forage and as they were preparing to nest in the evening. There were two primary reinforcers used to encourage the meerkats onto the scale - cooked egg and water. With little water available in the Kalahari individuals would drink from a water drinker similar to that found in a rabbit hutch. This would not only provide encouragement to station on the scales, but also allowed for a thorough visual examination of the individual.

In the mornings we would track the groups closely with the researchers making observational entries every 15 minutes into a programmed tablet. This would involve them locating and identifying each individual using hair dye markings, similar to that seen on captive populations at Taronga Western Plains Zoo. The observations would contribute to an ethograph and track the members activity. The hierarchy of each group was also monitored closely as well as interaction with neighbouring groups and reaction to predators. We would track the groups in the morning for approximately three hours of foraging, at which time they would be weighed again and left until the afternoon.

Each afternoon, as the heat of the day eased we would head back out to look for meerkats. Starting where the group had been left in the morning we would use radio tracking to locate them. Some of the groups would have travelled several kilometres and we would have to climb fences onto neighbouring properties to find them. Always located foraging, the first job would be to identify each member to ensure no one had been lost during the middle of the day (with predators such as Marshall hawks and African Wild cats everywhere this is a real risk). As the sun set we would then track the group as they moved towards their selected burrow. Before nesting, each member would be weighed to see what foraging weight they had gained throughout the day. We would then

wait and record who was the last member down into the burrow. The researchers required us to wait 10 minutes after the last individual nested to ensure the group didn't re-emerge, sometime it could be a 45minute wait as Meerkats popped their heads in and out of the burrow (Below).



The overall project has several current projects including:

- Cost and benefit of cooperative behaviour.
- Hormonal regulation of cooperative behaviour.
- Demographic consequences of cooperative breeding.
- Communication mechanisms and evolution.
- Anti-predator strategies.
- Patterns of decision making in cooperative groups.

Our learnings

During our stay we were keen to learn as much about meerkats as possible so that we could bring that information back and continue to improve the welfare of captive meerkats.

We were surprised by the habitat. Whilst most captive Meerkat enclosures are covered in a sand substrate with only sporadic trees, the location in the Kalahari was



scattered with small shrubs and a multitude of grass tussocks. Bright colours highlight the environment with yellow flowers from the Black storm and Devil's thorn bushes. Remnants of fallen trees provide the ultimate enrichment opportunities for foraging, whilst also allowing for sentry duty and providing shelter from predators.

The meerkats spend the entire day foraging and feast on almost any invertebrate. From beetle larva, worms and of course scorpions, the only insect that meerkats will not eat is the African Giant Millipede. The exoskeleton of the millipede is toxic and makes the meerkats ill. As for water, being desert inhabitants means the Meerkats can live completely independently of water. However they will draw water from the insects they eat and also by eating the roots and bulbs of shrubs.

Breeding general occurs in the summer months, with food becoming too scarce throughout winter. Females have been known to breed as young as nine months of age. With only the dominate female being allowed to reproduce within each group, researchers speculate that the subordinate females are able to delay showing signs of pregnancy as a strategy to avoid being ousted. Only if the dominate female is not pregnant will the subordinates pups have the possibility of being raised. Females can give birth up to six pups, but two to four is more common. Interestingly, the sex ratio seems to be skewed to males during harder seasons and females when conditions are favourable.

Most of our time was spend monitoring the group behaviours. Often the dominate male or female would emerge from the burrow first in the morning to ensure the safety of the group. As the rest of the group emerges they will sun themselves for up to an hour. This can be longer in winter months. Sunning is occasionally interrupted by grooming, play and a bit of foraging before the group sets out for the day. Whilst foraging there is usually an adult on sentry. This individual has had a feed and only remains in that position for a few minutes whilst the group moves past. They are more alert when predation is high and use a range of vocalisation to communicate to each other. They are not only looking out for predators, but also neighbouring Meerkat groups. When they come across other group territories, they display war dancing, scent marking and aggravate behaviour.

Mortality of meerkats in the wild is due to predation, illness or poor conditions. The average age is only six-seven years for males and four to five years for females, where we see meerkats well over ten years old in captivity. Females may also abort when times are hard

and there is up to 70% mortality in pups when conditions are hard. During this recent summer only two pups from 20 litters have survived. The oldest Meerkat living on the reserve is an eight year old male who has worn teeth due to his diet of invertebrates.

The higher turnover of Meerkats in wild groups due to mortality and dispersal relieves pressure and group tension often seen in captive groups. Subordinate males may leave the group for short periods during the day, but rarely for more than a day, as longer absence can lead to their expulsion by the dominate male. Subordinate females often fight when they are cycling. In all cases in the wild individuals are able to escape aggressors, often ousted individuals will hang on the fringe of the group until hormones or aggression subside and we need to allow for this in captivity.



Application of learnings

So how can our captive meerkats benefit from what we have learnt?

It starts with their housing. Considering how far meerkats can roam and their social complexities, we need to offer them larger housing. Just because they are small mammals, doesn't mean they need a small space. They need places to bask, play, forage, sentry, escape, interact and even avoid each other when necessary.

We recommend that two to ten Meerkat should be held in no smaller than 100sq metres and have at least two off-display housing areas where they can be rotated and separated when needed.

A good substrate is vital, with Meerkats spending most of the day digging. The substrate should be light weight (like brick layers sand), as dense sand can lead to tunnel collapses. Substrate depth should be up to 20cm to allow for foraging without excessive tunnelling.



Plants can, and will grow in sand, providing there is a good soil quality underneath. It is recommended that you layer mesh between the sand and soil to allow plants to grow but ensure containment. Growing plants from seed can assist with establishment and are less likely to be dug up.

Ensure that exhibits have plenty of unfiltered light, but also some shaded areas where they can escape the weather. Ideally allow meerkats access to their exhibits overnight so that they can choose where to nest and emerge. Holding yards with natural light and heat lamps are an appropriate alternative if they are required to be locked away overnight. Providing meerkats with access to holding areas and nests prior to the sun setting is also important.

Typically captive Meerkat are overweight, with wild Meerkats ranging from 500-800 grams. Their full name is 'Slender tailed Meerkat' and they really do have slender tails, with a width of only 1cm. As opposed to their captive counterpart who can weigh over 1kg and have a tail width of closer to 2cm.

We need to aim to get our meerkats lighter, with a diet closely mimicking their wild diet. Feed a diet that is primarily insects and reduce sugary foods, such as fruits. Create multiple foraging opportunities throughout the whole day so that they are kept busy and can expend energy as they would in the wild.

Every Meerkat group is governed by a dominant pair, so it is our recommendation that every group begin with a single male and female.

A Meerkat chosen for a breeding pair should have displayed the ability to be dominant in their previous group to ensure they are a strong and capable individual who will not be overthrown by their offspring. This selection can be made by watching pups squabble when they are young, as hierarchy is determined early in life.

So in summary, we can't stress to you all how important it is to go and

see where the animals you care for live. It opens your eyes to the full spectrum of their life in the wild and also reinforces and expands your knowledge of their biology and behaviour.

Typically, our Zoo meerkats are overweight and living in small and barren sand exhibits.

Lets do better for them:

- Lets plant out those exhibits whether by seed or mature plants, shrubs and trees.
- Lets fill the exhibit with constantly changing and interesting furniture.
- And when the opportunity presents redesign their exhibits,
- Lets make it bigger, vaster and more varied.
- Add multiple holding areas to manage any hierarchy fighting or breeding

Because they deserve it.



• ASZK NEW MEMBERS •

The ASZK Committee would like to welcome the following new members

FULL MEMBERS

BRETT FINLAYSON	Taronga Zoo
SASHA BROOK	Taronga Western Plains Zoo
LISA CAVANAGH	Taronga Zoo
GRACE BLACK	Taronga Zoo
DOUG RUSSELL	Australian Reptile Park
SIMON BROWN	Taronga Zoo
KANE CHRISTENSEN	Australian Reptile Park
ALICE TSE	Dolphin Marine Conservation Park
HAYLEY WILSON	Taronga Zoo
HAYLEY SHUTE	Australian Reptile Park
FAYE SAMBELL	Moonlit Sanctuary
DAYNA HOADLEY	Raptor Domain
DANIEL STUART	Snakehandler
JESSICA NELSON	National Aquarium

ASSOCIATE MEMBERS

ROY PAILS
PETER DE LAURENTIS – LARKIN
ASH-LEIGH BARR
LACHLAN VENN
MORRISON GUINANE
NATALIE LANE
JULIE MARTEN
TYLER GRALTON
PAT MILLSON

CORPORATE MEMBERS

THE EDUCATION AND CONSERVATION OF MACROPODIDAE
KOALA RETREAT



• ASZK •
**MEMBERSHIP
STATISTICS**

285 FULL MEMBERS

3 FULL PARTNERS MEMBERS

69 ASSOCIATE MEMBERS

1 ASSOCIATE PARTNERS

17 RECIPROCAL

19 CORPORATE

13 LIFE MEMBERS

3 OVERSEAS

4 OVERSEAS CORPORATE

TOTAL 414

AUSSIE ARK

Brush-tailed Rock-wallabies

Aussie Ark's species count grew in December 2018 as we finished our 6 breeding enclosures for our new Brush-tailed rock-wallabies. This was a particularly satisfying achievement as it was no easy task transporting six large boulder piles up to our facility which sits at 1300m above sea level! We are currently stocked with three females, however the plan is to have an initial founding stock of nine individuals to initiate our breeding program. The population will slowly be released into our 400ha sanctuary where they can create a self-sustaining insurance population in a feral free environment that they were once abundant in.

Opened to the Public

January 2019 was an extremely eventful month for the team at Aussie Ark as we opened our gates to the public for the first time since the facility was first established in 2011. Up until this point public have only been able to see our facility in the form of private tours. However, given the large amount of interest, we decided to open the gates for the month of January and allow people to come up and visit during the school holiday period. The month was an incredible success with over 150 people visiting each day which, given our remote location, far exceeded our expectations!

Our open month not only allowed us to gain funding for our ongoing expansions, but it also allowed our staff to proudly show off what we have all been working towards for the past 10 years. Given it's success, we plan to have an open month every January to allow people to come and visit each year and witness our ever expanding project for themselves.

As all of our animals are subject to potential releases into the wild, it is imperative to maintain their natural behaviour which is why we are choosing to only open for one month a year.

Booderee National Park Release

Easily our most exciting recent achievement has been contributing towards the re-establishment of Eastern Quolls to mainland Australia! This species has been extinct on the mainland for almost 60 years, primarily due to feral foxes/cats, and has only survived on the island-state of Tasmania.

In 2018 20 Eastern quolls were re-introduced into

Booderee National Park, NSW as a pilot project. Due to the park's effective feral control program a number of these individuals successfully bred with the fast-developing offspring reaching breeding age this year. Aussie Ark was able to donate a further 17 Eastern Quoll yearlings to the project which, in combination with other facilities, was able to boost the mainland Australia population by 40 breeding individuals. This was an extremely exciting project to be associated with and currently it seems our quolls have fitted into the wild lifestyle well and can hopefully continue to expand the Booderee population.

Max Jackson
Supervisor Aussie Ark

AUSTRALIAN REPTILE PARK

Reptiles and Venom

The reptile team at the Australian Reptile Park have been very busy over the last few months, with the opening of a brand new Komodo dragon facility, construction of the Manning River turtle breeding facility as well as continuing the vital work in both the extraction of venom from native terrestrial snakes and also Sydney Funnel-web spiders for the production of anti-venom.

Opening in November 2018, the upgraded Komodo dragon facility has enabled the pair of Komodo dragons "Kraken" and "Daenerys", who reside at the Australian Reptile Park, to be housed on display permanently for the first time since their arrival. Both lizards have settled in well whilst continuing their daily walks around the park which allows visitors to get up close to these amazing lizards.

Recently, I had the opportunity to present at the ASZK annual conference on the Manning River turtle project. The Manning River turtle (*Myuchelys purvisi*) is endemic to New South Wales and only found in the middle and upper reaches of the Manning River system and its tributaries. Like many other native species this strikingly beautiful turtle is in decline across its range due to habitat degradation and predation of nest sites from the introduced Red Fox. Aussie Ark has built a captive breeding facility for the Manning river turtle on the back of a successful crowdfunding campaign raising over \$100,000, on site at the Australian Reptile Park. Aussie Ark plans to maintain a small insurance population of the Manning River turtle with the ability to breed and start juvenile turtles for future release.

We have added a number of new species to the park's

collection in the last six months including Midline Knob-tailed Gecko (*Nephrurus vertebralis*), Mulga Dragon (*Diporiphora amphiboluroides*) and Pygmy Spiny-tailed Skink (*Egernia depressa*).

Since the last update, we have also hired another fulltime reptile keeper, Brandon Gifford who had previously worked at Australia Zoo. Brandon has become an integral part of the daily operations and we are very lucky to have him as a part of the team at ARP.

Dan Rumsey
Head of Reptiles

CURRUMBIN WILDLIFE SANCTUARY

Things have been pretty quiet on the native mammal front at Currumbin. We have had the emotional rollercoaster of dealing with a number of aging animals that have passed over the last few months, but it is reassuring to know that we provided them with a great life while they were here with us. On a happier note we recently received a Southern Hairy-nosed Wombat, 'Holly', from Safe Haven – AACE. Holly has settled in very well and has the most luxurious coat of fur we have seen on any wombat before!



We have also had a great breeding season with our koalas with a number of joeys starting to emergence from their mum's pouch over the past few weeks (above).

We have experienced a very late breeding season for our birds due to an unusually hot dry summer on the Gold Coast. Many of our bird species, only now at the end of May, are showing signs of slowing down. We have successfully bred a number of species this year. Our Sacred Kingfishers produced a total of nine offspring this season which would be the biggest standout. Our Glossy Black-cockatoo are currently nesting and due to hatch early June. This pair have been consistent breeders for us over the past five years and we hope to continue to be able to breed them (and find homes for offspring). The Eastern Bristlebird Recovery Program took a big step forward with the acquisition of four wild birds which will hopefully provide new genetics to reinvigorate our captive population. This is subject to genetic testing to ensure they are compatible with our population.



We are currently in the planning stages of a revamp of our Reptile/Amphibian back of house area as we have outgrown our current space and are looking at different ways to accommodate our reptiles that provides them with more space and opportunities. Recently we phased out our guest crocodylian photo opportunities. We are now focussing on the training and conditioning of our juvenile alligators in order to provide guest encounters where the guests can enter the alligator enclosure and the alligators can choose to participate in a training/contact session with the guest. Apparently our gators can't get enough of a back scratch with a dishwashing brush! (See above)

Our Lost Valley precinct is going well and we are very excited to have received a Binturong, 'Enam', from Perth Zoo recently. Like many of the species in the Lost Valley precinct this is the first Binturong that has resided at CWS and we are all very taken with her (and her amazing smell).



Binturong 'Enam' at Currumbin Wildlife Sanctuary

Saskia Lafebre

BROOKLANDS ZOO *Primates*

There have been changes to our Cotton-top Tamarin husbandry since seven-year-old female “Inca” was found to be diabetic.

Following a short gastro intestinal infection which required vet care, tests showed she had raised blood sugar levels (confirmed a few weeks later by urine sample after she had had the opportunity to recover and reintegrate with 17-year old dad “Lorenzo”). We were able to source diet sheets and advice from other facilities that house diabetic callitrichids and it was decided to remove all simple carbohydrates and high fructose-value fruits, and increase the low-carb vegetable content by 50% with veterinary approval.

Diet trials were undertaken to gauge which vegetables we could introduce that were palatable to the group and they have surprised us with the amount they are now consuming without always having a fruit option. Historically they have not been keen to consume any type of vegetable!

We also had to take into account “Lorenzo’s” age and health status. A recent full health check revealed that most of his teeth are very worn, which means he struggles with the raw vegetable-heavy diet. X-rays and an ultrasound have shown he also has some issues with his heart and lungs, which are most likely related to his advanced age. Increased glucose levels in his blood mean any extra foods we provide for “Lorenzo” also need to be low in sugars and carbohydrates.

So far the diet change has been successful in reducing “Inca’s” urine glucose levels to that of a non-diabetic individual, although the most recent urine sample has shown minimal levels of glucose present. These dietary changes are currently enough to keep the disease at a stage that does not require medication but we will continue to monitor both tamarins closely and analyse urine samples regularly.

Training has continued throughout this time, with Inca more and more comfortable in her crate every day. This is often where we obtain the urine samples. Crating Inca also allows us to supplement “Lorenzo’s” diet without Inca taking the larger share.

Station training with Inca allows “Lorenzo” access to the scales for weekly weights, as previously Inca has dominated them. “Inca” is also doing well with having her microchip scanned and topical liquids applied (at this stage, just water).

Small exotic mammals

Another big change has been the arrival of two male Red-rumped Agouti from Hamilton Zoo in December. Due to each agouti requiring their own space, we now have two mixed-species habitats with one agouti sharing space with our bachelor squirrel monkey group and the other with our Cotton-top Tamarin group. All have settled into their new arrangements well.

Motion camera footage has revealed that both agouti have very different eating and activity patterns. “Carlos”, in with the tamarins, prefers to eat the majority of his diet in the early hours of the morning; while “Felipe”, in with the Squirrel monkeys, is tucked up in bed each night from 7pm to 7am.

This difference in behaviour has meant that while they receive the same quantity of diet, they are fed at very different times to ensure their produce is as fresh as possible when they want to eat, ensuring optimum animal welfare.

We also had another new arrival to the zoo: female meerkat Tamela, who arrived from Wellington Zoo in March. We are lucky that our current all-female mob is very open to new members and the last two additions to the group took less than 24 hours each time to integrate. Tamela joins her older sister Aziza and three aunts in the habitat. The habitat contains a network of platforms at various heights along the rear and side, and Tamela enjoys sentry duty at the highest point of 2m which allows a wide vista of not just the zoo but the back-of-house areas as well.

The group is crate-trained and Tamela quickly became one of the most eager to participate. This has been especially useful recently, not only to easily weigh each meerkat but also to move them to neutral areas for introductions. The group also has an emergency recall and it's always a small thrill to see the speed at which they race inside their den.

Maxine Jenkins

MONARTO ZOO *Carnivores*

Painted Dogs

We acquired a pack of four males from Perth Zoo several months ago and eventually hope to have an established breeding pack with our two females. One of our males has had a chronic infected toe which was recently amputated, which once healed will hopefully allow a progression with our future introductions and eventual breeding.

Spotted Hyena

We have a nice established clan at the moment of two adult females and three older cubs. Our training program is progressing nicely with all hyena also, especially the cubs, moving towards eventual neck blood draws among many other behaviours.

Cheetah

Our current number of cheetah at Monarto is fifteen. Our last litter of 1.3 cubs has just turned one. The single male in the litter has just been sent to Taronga Western Plains Zoo to be eventually joined with their 3 young males, who are just two weeks younger. This is a best case scenario with these males integrating into a large 4.0 coalition. The four females from Kesho's first litter are still in their sister sibling group and are a fabulous display for us and are great running on our cheetah lure.

Lions

We have acquired three beautiful young three year old males from Werribee Open Range Zoo, Kito Kubwa & Kashka. Our eventual plan is to have a pride out in our large 11 hectare exhibit, which we haven't had for a number of years. For now we are progressing well with fence contact between the males and the young females that we have. The three new males are also a great addition to the Lions 360 encounter.

Natives

Our Tasmanian Devil breeding season is coming to a close with females starting to go through their 3rd oestrous. So far, our female Thumbelina is carrying four pouch young. We have a female Yellow-footed Rock-wallaby joey in pouch from a mating with wild caught male Yooti. Our elderly male Brush-tailed Bettong has proved he still has some life in him, recently fathering a male offspring.

Following a Warru Recovery Project field trip to the APY Lands in late March two female pouch young joeys were brought back to Monarto Zoo to be ambassadors for the program. "Inuntji", meaning pretty yellow flower or mulga flower, was named by children from Kenmore Park School and "Tjawi", meaning joey, was named by the Warru Minma.

Meanwhile, our Western Swamp Tortoises have just been brought out of aestivation while our Pygmy Blue-Tongues have just entered Brumation. The breeding pair of Malleefowl produced eggs in January but as yet nothing further has been seen. With the rain event that occurred three weeks ago, the mound has been reopened.

The Bustards now have some new enrichment with a mealworm dispenser that they have been utilising. A pair of Rufous Crowned Emu-Wrens and a trio were introduced for around a week and closely monitored. Some of the behaviours that were observed during this introduction mirrored those that have been described in the literature for the genus, with some behaviours not having been seen before in captivity. Unfortunately, the team lost two Regent Parrots that were predated upon by a wild raptor, a Brush-tailed Bettong joey which was thrown from pouch and our lovely curlew.

Ungulates

Monarto Zoo has recently undergone some diet reviews for a few of our Ungulate species. The Black Rhino is a key example of this, where a diet review and change has resulted in a positive health outcome for our two Black Rhino males. Black Rhino have adapted to a low iron diet during evolution and often captive diets do not



always accurately replicate this. Captive Black Rhino have shown to store iron, especially in their livers and this 'captive iron overload' has been associated with many serious disorders. While we have not seen any signs of iron overload in our rhino, we have been conditioning them for blood draws so that we are able to keep tabs on their iron levels. Blood draws in Black Rhino can be done from a few different locations but we found the one that worked best for our rhino is using the radial vein location on the inside of their forelimb. Our conditioning program for blood draws involves two keepers, one to walk the rhino into the correct position next to the fence and provide a drip stream of rewards while the other keeper locates the vein in the leg and takes the sample. We apply Emla cream to the site around an hour before blood draws but with such thick skin we have found this only provides limited relief.

Originally finger pressure only was used, progressing to using a blunt needle and then a butterfly needle for the actual blood draw once the rhino was comfortable with the previous stages. Our original diet consisted of browse, Lucerne, hay, horse and pony pellets and fruit and veg and our blood results showed an iron level of 46.4Umol/L

which is at the upper end of normal. Post diet review we increased our browse and hay, decreased our Lucerne, replaced horse and pony pellets for our specially formulated browser pellet and kept our fruit and veg for training the same. Post diet change blood results have shown a decrease in iron to 35.4 Umol/L which is a great result and puts them steadily in the normal healthy range.



TARONGA ZOO *Carnivores*

It's baby galore right now on the Carnivore division at Taronga Zoo, with Red Panda & Sumatran Tiger triplets.

Our Red Panda trio are six months old now & have started to experiment with solid foods like bamboo and a special panda 'porridge.' They still suckle from their mum, "Amala", until around 7-9 months of age, but are progressing well in weight & confidence with solid foods. They are becoming quite the little climbers & are following their mum high up into the trees each day (whilst providing frequent heart palpitations for us keepers watching from below). "Mishry", the female, is a mummy's girl & often can be found wherever "Amala" is. Whereas our boys, "Rohan" & "Ishwar" like to have brother time wrestling & playing together. They are weighing in at around 1.2-1.5kgs now.

Our other set of triplets, "Pemanah", "Mawar" & "Tengah-Malam", are making leaps & bounds in their development. The Sumatran Tiger trio are 4.5 months of age now & are already such individuals. They are eating all kinds of meat & love to play 'predator' with their daily toy enrichment. All three cubs have settled in well to their on-display exhibit with mum Kartika and are dazzling guests everyday with their playful nature & tiger-like instincts, from stalking each other to even trying it out on mum (which they are still yet to surprise her with). They spend their time with mum, but also have mesh (protected) contact with dad overnight, exchanging chuffs & cheek rubs. They are all approaching 16kgs now & growing every day.

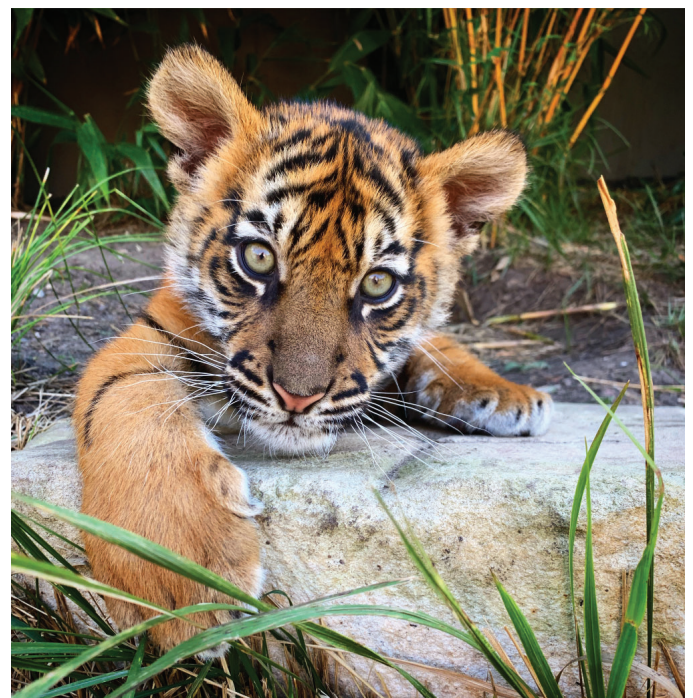
Olivia Clarke

Primates

As always, Taronga's primate unit is a busy place. The 21 strong chimpanzee community has certainly been keeping the chimp keepers occupied. We unfortunately we had to say goodbye to 44 year old female chimp 'Koko' on the 2nd of May. 'Koko' had arthritis in her right knee and following an unseen event, she got dramatically worse and could no longer use her right leg properly. After lengthy discussions about 'Koko's' future and potential treatment options it was decided for her own welfare it was best to euthanize her. After a brief period of conditioning her to be separated into a den each morning, the procedure went well and she went peacefully. The rest of the group was allowed to view her body as it was deemed important that they see where she went. 'Koko' is very much missed.



Three pandas looking down



One of the new tiger cubs at Taronga Zoo



Koko - Credit Bobby-Jo Vial

On a lighter note Chimp keepers were delighted to discover the birth of a tiny female infant on the 16th of May. Mother ‘Shiba’, is a very experienced mother with this being her 5th offspring. The yet unnamed infant is doing very well and is already proving to be quite vocal and is regularly seen responding to the noise of the group.

Behavioural husbandry has become a very important part of our every day on the unit with plenty of training and conditioning happening across all species. The Gorilla training program is going extremely well with increased visibility of Gorillas for our guests and better welfare for our group. Squirrel Monkeys have been recall trained to aid with their daily routine, Cotton Top Tamarins are being scale trained and Francois Langurs are being trained for separating and hand injection for future anaesthetics.

On the 2nd of May, Taronga was treated to a visit from Dr Jane Goodall as part of her Australian speaking tour. Primate keeper, Laura Fidler, was tasked with giving a presentation to the Taronga Zoo donors as well as a chimp talk to Dr Goodall, Roots and Shoots members, YATZ, JGIA staff and volunteers, Taronga Zoo staff, primate staff and even a group of ASZK conference delegates! An intimidating but amazing experience. This was followed by a Q&A session with Dr Goodall at the Taronga Institute

of Science and Learning. We were very fortunate to get this time with her as with many keepers, she has been the childhood hero of many of Taronga’s primate staff.



Taronga Staff with Dr Jane Goodall - Credit - Laura Fidler

Laura Fidler

Institute of Science and Learning

Since the exciting opening of the Institute of Science and Learning in October 2018, we have had a remarkable 10,857 students through our three immersive classrooms. The keepers have been running around training all the B's (bettongs, bilbies, and birds) to station on rocks at the front of the exhibits and to show off their corn eating abilities to the eager students.

A recent visit from storytelling extraordinaire, Dr. Jane Goodall inspired not only the Roots and Shoots and Wild Squad children, but also all of the adults who had managed to worm their way into Janes presence. A highlight and privilege being the dedication of the education classrooms to Dr. Goodall, acknowledging her immense learning contribution. Jane was chuffed to say the least.

After 12 years of patronage to Taronga, we lost our dearly beloved senior keeper Steve (keeper-steve) to the Wild Cat Conservation Centre, and yet his never-ending Taronga posts are still getting likes on the gram.

Grace Black

Elephants

As part of our daily husbandry, we examine our elephant's feet to check the general health and see if there are any changes or maintenance that may be required. To get a better understanding of their foot health, the elephant and veterinary team have taken x-rays. These will allow us to check on the health of the bones and use these images to assess any future issues that may arise.



Asian Elephant foot x-ray

We focussed on obtaining images of the elephant's toes, tarsals and carpal joints for a thorough examination. This

required lots of training and desensitising the elephants so they were comfortable throughout the entire process. At this point 'Tang Mo' has completed her X-rays and we are conditioning 'Pak Boon' for her final x-rays in the coming weeks.

Alexia Dalley

AUSTRALIAN FAUNA PRECINCT (AFP) AFP MAMMALS:

Goodfellow's Tree Kangaroos

There have been a few changes to our Goodfellow's Tree Kangaroo collection at the AFP.

One of our females, "Kimbe", was relocated to the Australian Reptile Park to be paired with a genetically suitable male. Sadly a few months ago we lost our male "Parum", due to old-age-related complications. "Parum" was not only a great ambassador for a species that is considered endangered, but he also sired two joeys with our female "Kwikila", a female "Nupela" who now resides in Singapore Zoo and a young male "Torembi". "Torembi", who will be turning two in September, is thriving and has recently graduated to having his own enclosure after behavioural observations between him and his mother indicated that she was ready for him to move on.

Both "Kwikila" and "Torembi" will continue with their conditioning routines that will facilitate improved husbandry, medical procedures, keeper talks and any movements that might be required in their futures, as they are part of an international breeding program.



Goodfellow's Tree Kangaroo "Torembi" scale training with food and mum "Kwikila" as reinforcement - Credit - Claudia Bianchi

Fat-tailed Dunnarts

Late last year we introduced Fat-tailed Dunnarts into our collection.

Five females and two males were the founder individuals and after a productive breeding season 32 joeys were born.

These little nocturnal carnivorous marsupials have proven to be great exhibitors, delighting our guest with their inquisitive nature and endless energy. They are regularly observed hunting for insects, interacting with whatever enrichment is placed and sand bathing.



Fat-tailed Dunnarts - Enrichment of snake slough and fresh grass - Credit - Natalie Tees

Claudia Bianchi

Long-beaked Echidna

One of the most unique animals in the AFP recently passed his aged animal assessment with flying colours.

“JR” is an Eastern Long-beaked Echidna (*Zaglossus bartoni*), a critically endangered species from New Guinea. At over 50 years old, “JR” is showing no signs of slowing down, and it is currently unknown how long this species can live.

Long-beaked echidnas have unusual backwards-facing barbs on the roof of their beak and on their tongue to assist with consuming a diet of worms and insect larvae (rather than ants or termites).

As the only long-beaked echidna outside of New Guinea, JR is important ambassador for his species and a firm favourite of anyone that meets him in his Australian Nightlife display.

Natalie Holdsworth

AFP BIRDS

The bird department have a busy year ahead with two major conservation projects being completed.

Currently we have staff from both TWPZ and Sydney across all precincts taking part in the Lord Howe Island Rodent Eradication Program (LHI REP). Keepers will be caring for 127 Currawong and 177 Woodhen, both endemic species to the island (with more to come) while the rodent baiting takes place on the island. With the project due to wrap up in November, those taking part are spending long periods away from home so everyone’s efforts are immensely appreciated.

Preparations have begun for our Regent Honeyeater Release later this year. Currently we have bred 20 birds at the zoo for the breed for release program, with a hopeful total of 42 to be released with the help of all the other participating zoos.

Finally, we would like to thank Adelaide Zoo for our latest arrivals. After more than 20 years Palm Cockatoos are now on display at Taronga Zoo. Seisia and Hoppy, two females sent from Adelaide are settling in well to their new exhibit and the public are delighted with the new display.



Palm Cockatoos now on display at Taronga Zoo

Leanne Golebiowski

HORTICULTURE MATTERS

A DIFFERENT TYPE OF ZOO KEEPER

Alicia Clarke - Taronga Zoo

Welcome to the world of plants. Zoological horticulture is, like all other zoological trades, a highly valuable yet mysterious commodity in our workplace. Is it really any different to commercial hort or even domestic gardening? From an overly simplistic perspective, it's all plants.

The gardens, landscape and topography of our zoo contributes a huge amount to the experiential precincts and historical value of a zoo itself. They give our guests the opportunity for escape, adventure as well as reminding them of the value that habitats, ecosystems and conservation holds in the world around us. We are part of a giant puzzle of moving parts, with a myriad of stakeholders which changes, challenges and inspires us on a daily basis.

I care deeply for the gardens I'm responsible for, but with care comes self-imposed expectations that nature can sometimes override. Weather is the wheel that we horticulturalists depend on, and we haven't had rain in almost four months. We have just been placed under mandatory water restrictions for the first time in 10 years and the idea of future droughts feels inevitable.

Taronga is on a 110 year old site situated on a south facing slope. With this, we are confronted by a worksite of tiered and sloped gardens, with many being restricted access due to their location at heights or on the boundary of an exhibit. There are very small windows of opportunity to maintain these areas and it is common for us to have all intention of tackling a seemingly simple task on paper, but come across too many variables to make it happen. Additionally, road closures and blocked access are becoming a daily challenge due to our worksite currently housing three construction zones, a double-edged sword when it comes to building amazing, new and contemporary exhibits. It is common for clashing concrete pours and earth works to close multiple roads throughout the zoo on the same morning, leaving only one road for access in and out for every zoo vehicle and delivery truck. I'm becoming more and more competent at participating in a multivehicle reverse around blind corners, a skill I never knew I needed but am pleased to have learned.

Each season offers its own surmountable challenges, we are evaluating and re-evaluating the state of our gardens constantly and given that we are opportunistic and use

best horticultural practice, there is often straightforward and easily manageable busy work required to keep the zoo green and gorgeous. This can be the challenge in itself though, with various stakeholders and departments raising new priorities that need to be addressed prior to any non-specific but essential maintenance, resulting in what could appear as a self-feeding cycle of working behind the 8 ball. To combat this, we evolve with the priorities placed upon our task list, intermingling days of team jobs with days of solo maintenance to facilitate the balance of greater good and personal goals.

Due to the zoo's topography, we can get hit by significantly high winds which can create an air of tension around any tree standing in a public or otherwise occupied area, putting a lot of pressure on our department to have all potential risks neutralised before there is questionable weather even forecasted. We also have mounds built by one of the many brush turkeys that call our zoo home. Brush turkeys scratch all leaf litter, mulch and soil in to spectacular mounds the size of small cars. These mounds can affect the overall appearance and health of a garden, which can pose as a very personal battle for anyone working in the zoo, but with Taronga being an important habitat for these animals it is necessary that we remove ourselves from the situation and allow nature to behave as it would in the wild.

There can be a great deal of internalised conflict when an animal's basic behaviour is inhibiting plant vitality. Horticultural solutions are easy to come up with, however they are commonly impossible to implement with the restrictions that animals and their exhibits impose. As horticulturalists in this environment, we are often asked the question: how can we best care for the landscape entrusted to us, allow the animal to thrive and keep guest experience at a premium? With collaboration, connection and a conscious vision (and often some trial and error on the side). In other words, it's a balance of control and chaos.

I have experienced a huge amount of horticultural growth in my time here at Taronga, sometimes in the context in which we work we need to find alternative methods of care that are beyond the bounds of traditional horticulture. Exhibit landscaping is a complex and exciting practice that teaches us something new about a



plants resilience or vulnerability that we wouldn't have known otherwise and for that, we are lucky to have the opportunity to learn and experiment in the conditions we are allowed.

Plants can sometimes be seen as filler, nice but not necessary. However, it is important to remember that our botanical environment contributes and reflects both our and the animal's experience, and in the wild, we can't have one without the other.



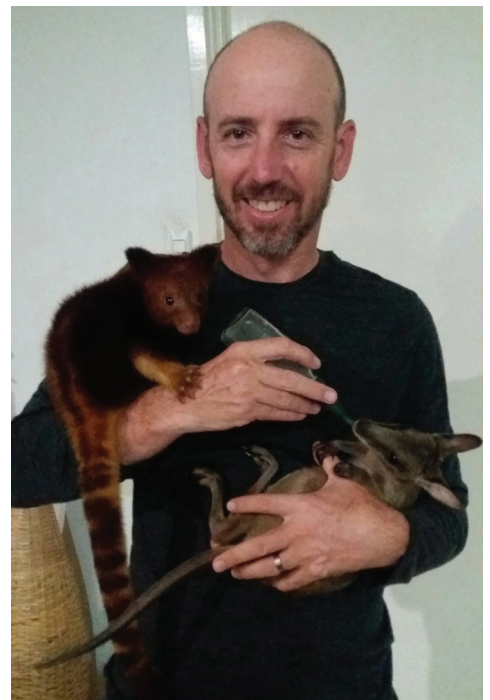
Every few month our team gets together to turn and re-plant the Taronga Zoo Floral Clock with seasonal annuals. The clock face itself is done once a year over five days, the border and moon beds each quarter over 2-3 days.

ASZK Award Winners

Congratulations go to the winners of the ASZK Awards for the period of 2018.

HEIDI HELLINGMAN AWARD FOR SERVICE TO INDUSTRY

**Brett Smith from Port
Moresby Nature Park**



CONSERVATION AWARD

**Lachlan Gordon - formerly
at Oakvale Wildlife Park
(now Kyabram Fauna Park)**





• MEET AN ASZK MEMBER •

Jose Gomes

ANIMAL KEEPER
WILD SEA, MELBOURNE ZOO

How long and whereabouts have you worked within the

zoological industry? . I started working in the industry as a marine mammal trainer at Zoomarine, Portugal. I did that for three years. Now, I work as an animal keeper at Melbourne Zoo with the Wild Sea team where I started in early 2016. I have also spent quite some time (too much, actually) at University studying Marine Biology and Experimental Psychology. Outside of my Zoo career I have been training dogs and cats. Australia is the fourth (and the best) country I have lived in so far.

What is your favourite animal and why? This is tough one, but maybe pinnipeds or otters. They are highly trainable and being very fast and efficient both on land and in the water, we really need to come up with creative solutions for their training, enrichment, medical programs, etc.

What is your favourite thing about Melbourne Zoo? Being a world leading zoo-based conservation organisation in which each element can be heard and contribute to the overall goals of the entire group. Melbourne Zoo has been making enormous gains in the fields of animal welfare and conservation and I feel very privileged to be part of it.

What changes or improvements would you like to see in zookeeping? . I think that currently most accredited zoos do an impressive work in the conservation space. A bigger focus on animal training programs using the most modern and least invasive methodologies could help the zookeeping industry. This is an effort that many zoos, including Zoos Victoria, are already doing but I believe that these programs are still not spread and known well enough worldwide.

What is your greatest achievement thus far? It is hard to single out one event, but I am lucky to be part of the amazing work that the Marine Response Unit team at Melbourne Zoo does. Being part of that team, I occasionally get the chance to try to help animals that somehow got their welfare state jeopardised.

What is your most memorable experience with wildlife? In recent times, maybe having a group of seven adult lions walking two meters away from me during a safari trip in South Africa.

What is your most embarrassing zoo moment? Perhaps being left on stage in front of a full audience for five minutes during a sea lion presentation waiting for an animal to be sent by other keepers from the backstage area. Sometimes several sea lions wanted to be in the presentation at the same time and this caused some real time backstage trouble, ultimately resulting in me having to stall the presentation for a while until the backstage frantic action got sorted out.



ASZK ANNUAL CONFERENCE MAY 2019

SYDNEY - REPORT FROM MELVIN NATHAN

This year's annual conference was held at the Holiday Inn Parramatta, Sydney, Australia. It was one of our biggest and most successful conferences. The 3-day conference was packed with keynote speakers, presentations from our peers, workshops, field trips to Taronga Zoo and of course the Gala Dinner. We would like to thank our sponsors Sydney Zoo, Taronga Zoo Sydney, Biosupplies Live Foods & Reptile Products & Western Sydney Institute - TAFE for making this event possible.

This year's conference theme was all about Keeping Conservation Collaborative. We were honoured to have had Threatened Species Commissioner, Dr Sally Box launch the conference with her inspiring talk on Partnerships for Conservation – The Role of Zoos and Aquariums in Threatened Species Recovery and encouraged us Zookeepers to keep up the good work. Other keynote speakers included Australian Reptile Park's General Manager, Tim Faulkner who spoke about Collaboration for Impact Based Conservation; The Director of Zoo and Aquarium Association Nicola Craddick with her presentation of The A to Z of ZAA, telling us more about the role and structure of ZAA. Who was then followed by the ZAA Welfare Accreditation Manager, Nicolas de Graaff with his talk on Exploring the Relationship Between Animal Keepers and Animal Welfare. We also had the pleasure of Georgina Groves from the global organisation Wild Welfare telling us about Changing Actions, Attitudes and Perceptions - Animal Welfare in Zoos and Aquariums.

Everyday of the conference was filled with excitement as we witnessed Conservation Detection Dog Demonstrations with TATE Animal Training Enterprises. For the first time we introduced the Global Café group discussions, where everyone had the chance to write down questions/ issues faced in the industry for discussion. This exercise was designed to share each other's experiences and to support to each other regarding issues we commonly faced. Not to mention the great feedback we received from this on what the ASZK can do to help.

At this years Annual General Meeting, we had a few Committee members step down; President Mike Drinkwater, Bowling Coordinator Vikki Quinn, General Committee Ryan Cartlidge and Secretary Stephan Dallywater. Thank you for all your dedication and hard-work for all these years. Following on from this a new committee was elected:





The 2019 ASZK Award Winners were announced at the Gala:

Conservation Award - Lachlan Gordon from Kyabram Fauna Park

Heidi Hellingman Award for Outstanding Service to Industry - Brett Smith from Port Moresby Nature Park with Taronga Training Institute receiving a highly commended award.

Outstanding Achievement

President: vacant
 Vice President: Chris Dryburgh (acting president)
 Treasurer: Jocelyn Hockley
 International Liaison: Liz Romer / Mike Drinkwater
 Secretary: Brit Hides
 Membership Officer: Caroline Monro
 General Committee: Karen James, Melvin Nathan, Stephen Dalleywater, Daniel Rumsey, Richard Roswell, Joanne Richardson, Lisa Tuthill, Jo Walker, Andrew Daly, Simon Husher, Emma Bembrick.

The afternoon visit to Taronga Zoo provided opportunities to get behind the scenes with exclusive tours of breeding programs, new developments, conservation programs and a sneak peek of the Taronga Institute of Science & Learning. One of the highlights of the conference was getting a surprise encounter with Dr. Jane Goodall, what a privilege!

The Icebreaker and Gala Dinner provided some much-needed networking and catching up amongst friends. Not to mention the fun games and auctions with some pretty cool stuff. During the Gala dinner we announced our most successful “Bowling for” event ever. As you may already know, this year we were raising much needed funds for Tree Roo Rescue and Conservation Centre. Thank you for all of your amazing efforts we will be sending them \$30,000!! An incredible achievement, thank you for all the support!

Award - Moonlit Sanctuary Wildlife Conservation Park. Bowling fundraising efforts for the Tree Roo Rescue and Conservation Centre Ltd, they raised over \$9000!

We also announced the winners of the 2019 Wildlife Photography Competition Winners at the Gala:

Animals in the Wild - Matt Cornish for the winning photo of the Southern Cassowary
 Habitat - Shana Chimoko for the winning photo of As Tall As Life
 Zoo & Aquarium & People’s Choice Award - Yvette Fenning for the winning photo of the Cassowary on a Nest (front cover)
 (all photos of our winners can be viewed on our Facebook page)

Finally, we closed the conference with the Bruce Kubbere Best Paper Award. Who went to Jose Gomes from Zoos Victoria for his presentation on “When a Seal Teaches Us About Our Life Support System”. This Award is sponsored by Featherdale Wildlife Park.

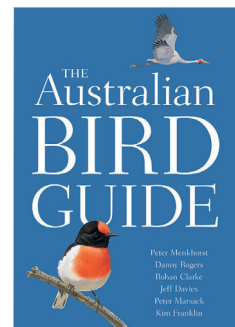
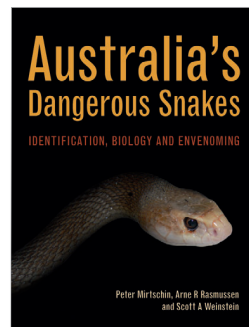
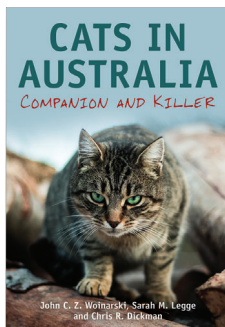
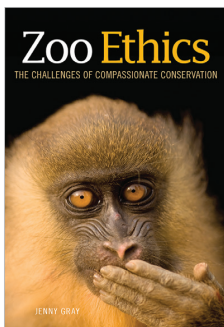
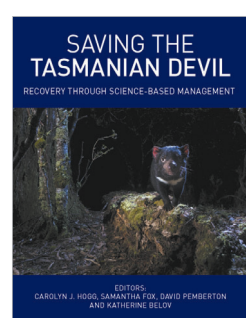
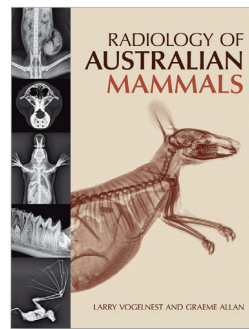
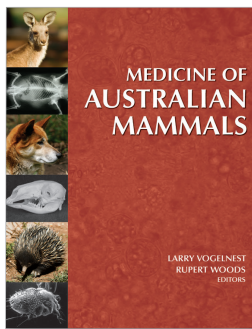
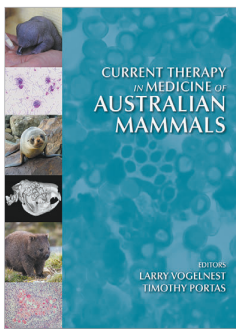
Another successful conference, until the next year, see you all in Rockhampton May 2020!

ZOOKEEPING RESOURCES >

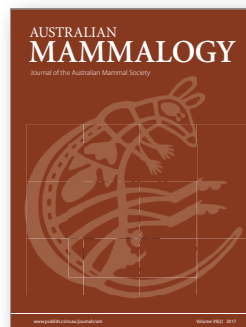
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