NEWS FROM THE ALPS
E-BLAST
THE ALPS PROGRAM. WORKING TOGETHER BEYOND BORDERS.

Far from his Western Australian marine career, Cam Nalder has found his skill-set sits surprisingly well in his ACT Parks role in the mountains circling Canberra.

AQUAMAN = ALPSMAN

Ask ten Australian Alps park rangers why they do their job, and there's a good chance they'll all have the same answer: a love of the natural landscape and a personal interest in helping to protect its values. Then ask each of them to describe their role and prepare for a wide-ranging set of scenarios. What follows is a quick look at the working world of just one - a Threatened Species Officer based at Tidbinbilla in the ACT. What follows throws up a few surprises…

The first two being that Cam Nalder is originally from sea-level Perth and his previous career was at the Aquarium of Western Australia. But when you scrape back to reveal the detail, it begins to make a lot of sense. "The Marine Science degree I took was quite broad, taking in terrestrial-based biology and land management. Then my role with AQWA as an aquarist ranged from the upkeep of the building and dive maintenance of the aquarium to animal husbandry and breeding programs." So when his partner took a job out east, Cam took his experience of corals, sea dragons, loggerhead turtles and grey nurse sharks and ultimately found a place on the Threatened Species team of eight at Tidbinbilla.

Strangely the biggest difference he registered was moving away from the coast to the bush, but apart from that, the new role was surprisingly similar to the previous one. “I’m still out in nature daily: on quiet days I’m in the back country doing gum cuts – gathering forage for the koalas. And my aquarium husbandry skill-set was similar enough to translate to the work we’re doing here with, for example, with the Brush-tailed Rock-wallabies and the Northern Corroboree Frogs.”

Tidbinbilla Nature Reserve sits in the Australian Alps but handily close to Canberra, an ideal place to support threatened species. Depending on the animal, some are highly managed in quarantined and climate control settings (think Northern Corroborree frogs in souped-up shipping containers), while others are more loosely corralled (the wallabies in predator-proofed fenced areas). Which of course means feeding, monitoring, data gathering and the maintenance of those fences and frog release tanks amongst it all. But wait, there’s more, because despite being a specialist threatened species ranger, there will always be other core tasks to cover, like pest species management (spotting and controlling weeds and feral animals) and liaising with people – among them visitors, volunteers, students and academics. Without a hint of sarcasm, Cam declares it wholeheartedly as being, “a pretty fun little job.”

Technically Cam is the Northern Corroborree Frog Program Manager, and this program dominates his time. But given he’s also part of the threatened species team, his potential to-do list taken from the daily roster is broad. He might find himself kitting up in gloves, gown, and clean boots (to keep harmful pathogens at bay) before tending the Northern Corroboree Frogs. Or he may distribute the hand chopped sweet potatoes, carrots, turnips and lucerne to the Rock-wallabies. Another day could see him hoping in a ute or on a side-by-side ATV to check up on the remote cameras which are used to gather information about animals in the captive breeding programs. Same with the electric predator proof fences that surround the various captive breeding areas - these need regular checking to make sure they haven’t been damaged, for example, by a falling tree. “We’ll repair the fence then monitor things for the next three weeks for unwanted animals – cats, foxes, rabbits and even other native animals that might out-compete for resources.”

The captive breeding program for vulnerable Brush-tailed Rock-wallabies involves supplementary feeding for some of the groups: this is a mother with joey at a lucerne feeding station.

Having a clear picture of current conditions is key to success with Tidbinbilla’s various breeding programs: the state of the animals being managed and the environment they’re in. Getting that information involves regular monitoring sessions – of plants and animals. “Once or twice a year we’ll head out and walk transects with a team of between four and six, logging

weed species into our geographic information system and evidence of animals pests.” This makes for more effective and targeted control measures by contractors. Keeping track of the condition of animals in the breeding program is also a routine process. For example, the Rock-wallabies are located in fenced areas ranging from around one acre through to 126 hectares. “In the largest there’s predator proofing but no routine supplementary feeding. In the smaller enclosures monitoring is more intense: we use motion sensor cameras and we collect information from captured animals during scheduled trap nights.”

It's 5:58 am in August and the threatened species team are probably still asleep, but remote cameras are monitoring the Brush-tailed Rock-wallabies being bred in captivity at Tidbinbilla: here a mother is captured grooming her Joey.

With a range of species to manage, the team is open to anything that makes the job easier. “We’re looking at testing thermal drone technology to help us monitor numbers of koalas – something we currently do with labour intensive transects. AI technology could also be useful when we’re identifying animals before entering data into the system”, like the unique belly markings of Corroboree frogs, something that currently is done scrolling through many, many images. Then there is the husbandry hack that’s used in aquariums which Cam implemented when he began working on the breeding tanks at Tidbinbilla. “We were using it when breeding shrimp: sponge filters collect bacteria which in turn help break down urea in the water.”

WELCOME TO TRAP NIGHT

Brush-tailed Rock-wallabies are listed as vulnerable nationwide and of the three unique populations, Tidbinbilla is actively involved in the genetic rescue of the critically endangered southern population. Which is why they are being carefully bred there, and part of that process involves keeping a close eye on them. If we were able to tag along with Cam on ‘trap night’, this is what we’d be doing…

“For the previous two weeks we’d have been free-baiting but not setting the traps. We then leave nothing in the traps the night before. Arriving at work late in the afternoon on trap night day, we bait and set the traps. We then spend the time waiting till eleven doing other maintenance and admin jobs and having a shared dinner. It’s then time to head out with head torches and cloth bags to check each trap. The caught wallabies are removed, held in bags

This daytime photo taken during a potoroo survey is similar to what goes down during trap night.

and identified by their microchip. They're weighed, foot lengths measured and pouches are checked before release, with the info updated on the data-base. Any animals that need or are due for a health check are put into a holding enclosure where a vet will examine them the next day. We're usually finished somewhere between two and five am." This process allows the team to gauge the health of the breeding colony at an individual level, treating animals and adjusting feeding protocols where necessary.

A FROGGY INSIGHT

The Northern Corroboree Frog has its own captive breeding program, which isn't surprising given its critically endangered status. Once common, numbers in the wild plummeted due to a combination of stresses. The key threat is the pathogen Chytrid fungus (*Batrachochytrium dendrobatidis*). Following swiftly on is the fact that horse hooves trample the bogs and the plants that grow there, causing water to run off too fast from the frogs' breeding sites. Finally, climate change affects the plants which make up the bogs, slowing their recovery from hoof and bush-fire damage. To support the Northern Corroboree Frog against these threats, the Threatened Species Team at Tidbinbilla has been working with Zoos Victoria's Healesville Sanctuary, Taronga Zoo and the Australian National University, on a recovery program that depends on the eggs and frogs bred within Tidbinbilla's purpose-tweaked, climate controlled shipping containers. These frogs not only provide insurance against extinction, but a source of animals for release into suitable habitat nearby within Namadgi National Park. Most recently, recovery efforts have focussed on releasing animals into a new, suitable site where they are not historically known from – an assisted colonisation.

"We're releasing eggs and frogs as part of a trial: into a site which was historically free of Northern Corroboree Frogs but perfect in every other way, hoping it would have a lower carrying capacity of the Chytrid fungus. It's also at a lower elevation which may potentially lead to faster breeding." Half the set of eggs for release go straight into the bog: the other half is released into specially designed release tanks covered with a large mesh to prevent deer from drinking. When the eggs have metamorphosed to the point where they have legs, they crawl to the edge of the tank and fall into the bog below. Fully formed frogs are also released directly into the bogs.

Inside the Corroboree Frog breeding facility: quarantine cleanliness keeps the frog's nemesis – the Chytrid fungus – out. The success of the program is also due in part to being able to control the environment to mimic the frogs' natural habitat.

Monitoring is a part of the program where all partners involved in the conservation of this species, including Dr Ben Scheele (ANU), colleagues from the Office of Nature Conservation, students and members of the Threatened Species team, and others, all work together during the breeding season to monitor frog numbers and survival, locate nests then return six weeks later to look for eggs. As part of the process, individual frogs are identified, and relevant data added into the system.

Iconic, under threat and being supported – meet the diminutive and gorgeously marked Northern Corroboree Frog.

TELL US YOUR STORY: We are always looking for stories to include in this newsletter. What's happening in your part of the Alps? If you've built a new bridge, cleared a track,

managed pests, done vegetation restoration works or worked on threatened species recovery, why not send Dave Crea a photo and a quick line and he'll take care of the rest. Maybe you just went for a particularly fabulous walk and would like to share your experience. We're always happy to hear from agency staff members, volunteers and members of the general community.

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News from the Alps issue number 97 was published in November 2023 by the Australian Alps National Parks. Program Manager and Editor is Dave Crea, Parks Victotria, alps@parks.vic.gov.au. For more information about the Alps, including information about the Parks, other publications and news, visit the Australian web page, https://theaustralianalpsnationalparks.org You can also catch up and stay connected on current Alps related happenings and issues on the Australian Alps National Parks Facebook page: https://www.facebook.com/australianalpsnationalparks/. And many thanks to those people who've been interviewed, and to the photographers for their images. Without this support, *News from the Alps* wouldn't be possible.