

S00097 – Deborah Pergolotti

Thank you for the opportunity to provide comment on the drafts for wildlife licencing and codes of practice. My comments pertain only to amphibians unless noted otherwise.

I lived in NSW (1989 to 1996) before relocating to QLD where I created the frog hospital in August 1998. I kept birds under permit in Sydney and I was involved with the FATS Group. I was also involved for many years with Sydney Bats (then known as the Ku-ring-gai Bat Colony Committee); as well as the Parrot Society and the ABT (Associated Birdkeepers and Traders which has also been renamed). My involvement in wildlife conservation, animal welfare and the environment goes back more than four decades. Since starting the frog hospital, I have been awarded for this work four times and the group I created has been awarded once.

The only items I wanted to submit comment for follow:

Draft Code of Practice for amphibians (CoP)

Page 3: Notes

In our modern polluted world, chytrid is merely a blip on the radar. There are many more problems in frog populations that academia has not woken up to. It is my belief that the neonicotinoid group of chemicals is causing immune malfunction in all species of frogs which encounter its contamination and these individuals are then overrun by a variety of pathogens. This disturbance started very abruptly in the wet season of 1996/97 shortly after the first neonic (imidacloprid) hit the local market. When I started the frog rescue activity in 1998, residents were already finding sick and dead *L. infrafrenata* in their yards from the year before. It has spread to all local species and I would say that the decline of frogs from the Cairns area since 1997 has been 95%.

The frogs we receive are concurrently affected by bacterial and fungal pathogens, protozoa, parasites (especially rhabdias and spirometra), and toxic issues. We have also seen significant numbers of cancer cases (four tumour types already identified) and widespread malformations. Viruses are almost certainly involved and both inclusion bodies and unidentified viruses have been found in our cases but we have not had the funding to pursue this any further. We have a huge photo library of cases over the past 20 years and these might be very useful for the other review you plan to undertake for the hygiene protocol.

While chytrid is still the only "recognised" amphibian disease issue in Australia, it is not the only one causing losses and/or making its way into the pet trade. I would like to suggest that some clarifications might be added to the CoP regarding the use of substrate.

When it comes to ground frogs, substrate is absolutely needed and we have used sand for such species. It can be thoroughly cleaned out and dried, moisture can be controlled easily and it can be reused after cleaning.

But for tree frogs, we recommend no substrate at all if that frog has been through a rescue/rehab process or if it is a 'banana box frog'. Once frogs have been overtaken by pollutants and pathogens in the wild, they remain susceptible to problems in the future. Most banana box frogs have come from intensive farms where they have been sprayed with chemicals repeatedly, esp. anti-fungals. Substrate is generally a sinkhole for pathogens and must be sterilised regularly to eliminate problems which can be concentrated in a captive setting. Where a keeper wants to make the tank a bit more aesthetic, I recommend dried leaves from trees or shrubs (so long as no chemical spraying is used in the area) tossed on the bottom like a leaf litter. This can be discarded frequently and the bottom wiped up with betadine solution.

Truly captive bred frogs are not so susceptible to problems (if the husbandry is correct) so substrate might be considered but the biggest issue that we have seen is that the entire enclosure is not dismantled and thoroughly cleaned often enough which allows pathogens to multiply. Or in other cases, the tank is cleaned only with hot water which is not sufficient to rid it of its microscopic cargo. The other issue is the amount of keepers who have been told (mostly by pet shops) to keep water across the entire bottom of the tank. This is not appropriate for Australian frogs and many frogs kept this way will eventually become ill. Many of the southerners who have contacted us about their sick frogs have been using tank setups with water across the bottom of the tank.

page 4 Notes continued

"Tap water may be used" The FATS Group disagrees with me on this but I believe that fluoridation is a problem for frogs and there are still many southern councils that have retained the practice. If a keeper is located in a council area where fluoridation is used, the fluoride must be removed before that water is ready for amphibians and fish (or any other animal) and this can only be done by expensive filtration methods (e.g., RO). Cairns council used fluoridation for two and half years before abandoning the practice and we noticed immediate impacts on fish and frogs, particularly tadpoles which died instantly despite the typical 'water aging' processes being used. Fish used in ponds to control mozzies suddenly became aggressive, stopped reproducing and died within weeks. Until somebody conducts a full fledged, double blind study on the impacts of fluoridation on small wildlife, keepers should err on the side of caution and ensure that fluoridated water is not used for their animals.

Additionally, many frog keepers will be in regional areas where they might be using rain water tanks as their supply. Those keepers need to be told that tank water will need to be boiled during the cooler months within chytrid's growing range. We have consulted on cases where pet frogs picked up chytrid from the tank water.

If there are any issues with not being able to remove fluoride from the water or other pollution issues such as coal dust or geo-engineering (aka solar radiation management) in the local area, we also suggest to keepers that Nobles Pure water is what they should use for their frogs. This is basically distilled water so it is deficient in minerals but these can be added back by the use of a mineral supplement or a TINY pinch of sea salt/himalayan salt added to the water.

page 9 - Notes

This draft document takes the tone that a keeper needs to avoid any possibility of breeding their animals. That is exactly the opposite of what is needed. There are a lot of very experienced keepers down there in Sydney to guide novices and these are the people who should be encouraged to learn the procedures that will lead to breeding success.

One of the benefits to people keeping frogs is that knowledge can be gained and then built upon which can lead to conservation of species. We are seeing declines and die-offs of a great many species in Australia including frogs, insects, birds, bees, etc. These things are declining faster than our ability to investigate. Insurance populations will be needed if these species are to be saved. In the present academic climate with the lack of funding for the most truly needed projects, it generally takes decades for serious environmental threats to even START being investigated. At the rate wild populations are declining, they will be gone in the wild before anybody figures out why.

Insurance populations for all frog species need to be planned and established. Zoos will help for a limited number of species but it is the dedicated subset of experienced captive keepers who will be the main contributors. They need cooperation - not roadblocks. While controls are needed to ensure wildlife is interacted with properly, those controls need to recognise that some people build on that basic keeping interaction to become the movers and shakers in the conservation world. Please also keep in mind that when assessing the threats you want to tackle or determining what controls you want to impose on captive keepers, the impacts of captive keeping on wild frog populations are dwarfed many times over by development, chemicals, geo-engineering, road kills and cat predation. Those are the threats that need to be controlled.)

Captive breeding is the number one strategy of the Global Action Plan for Amphibians but Australian authorities tend to view captive breeding as last resort. If the concern is introduction of disease, then introduce screening procedures before release of offspring. There are keepers who want to learn how to breed frog species and some who have already succeeded and they need encouragement and a cooperative attitude as budding citizen scientists.

page 12 - 5.5.2.2 UV lighting

A former consulting vet of ours (Samantha Young) did a study on UV light in amphibians and concluded that frogs only need roughly 20 minutes a day of UV exposure and that is with a lamp of only 2W. We have been consulted over the years by plenty of keepers of *Litoria infrafrenata* which have turned brown in captivity and often go spotty. In most of these cases, the problem has been overdosing with UV lamps. When the keeper adjusts to using the UV lamp for less than 30 minutes a day, the frogs return to green.

If you consider that most frog species are completely hidden away from the sun during the day, why would it be assumed that they need several hours a day of artificial UV light??

Schedule species at the end of the draft CoP

I noticed *Limnodynastes peroni* (Striped Marsh frog) is not listed in this schedule. When I lived there, they were 'common as', everywhere on the roads during the summer, and easy as pie to keep. If something like *L. chloris* is listed as Code only (*L. chloris* seems to have issues as we have heard from several keepers of *chloris* over the years with problems), why isn't *Lim. peroni* on this Schedule?

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Comments on the draft Animal Keepers list:

See previous paragraph - *Lim. peroni* should be a Code species.

There is a large number of frog species for which it is proposed to make them prohibited. Why is this? Is anyone keeping them now and will they be allowed to continue? If all these species are prohibited, how will you ensure that sufficient numbers of known provenance are housed in captivity to form an 'insurance population'? Have the zoos agreed to retain all of these species?

Of special interest to me is the inclusion of *Litoria nasuta* in this list. This species used to be the fourth or fifth most common species in the Cairns area up until the severe drought from January 2000 to Dec 2002. As a ground frog that does not burrow, ALL of them died in the Cairns area within a few months of the drought's beginning. The drought officially broke and light wet seasons occurred from Jan 2003 until the start of La Nina around 2008. However, *L. nasuta* remained completely absent from Cairns until the first sightings in 2007. These were only from a few scattered locations across Cairns and the numbers in each site were less than half dozen. When I left Cairns in early 2017, the numbers of *L. nasuta* were still extremely low. Those that are trying to recover are doing so from a very limited genetic base. I don't know how many other populations of *nasuta* around QLD experienced the same levels of loss but severe drought is a regular occurrence in Australia and this species has nowhere to hide it out. (The ones in Cairns that survived migrated into nearby rainforest and then emerged when the drought broke. That worked in this area because we have such a checkerboard of habitats in a small area but what about other areas?) This species needs a larger enclosure than other species but if there are dedicated A2 keepers out there, they should be involved in keeping this species and learning to breed it.

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Comments on the Discussion paper:

page 35 selling animals over the internet

This is definitely an area that begs further oversight. I don't frequent trade blogs but have had exposure to them when the buyers of sick frogs contact us to get help. I have taken every opportunity to emphasize a "buyer beware" attitude about long-distance purchases of frogs, esp. interstate. But some people just "have to have it" and will buy sight unseen and then wait for their sensitive little animal to arrive in the post! These are not a pair of shoes or a CD!

I'm not sure what the best way to handle regulating these people is but there has to be some standards or at least limitations imposed on internet trading. Is it best to simply forbid interstate sales of frogs or would this simply push the traffic 'underground'? I think the proposed requirement that the seller needs to take the animal back within a certain period of time might be very helpful since sellers will want to make sure the frog is healthy before sale and that it is shipped properly. It would be easy to enforce since the matter is then covered by typical consumer protection mechanisms and the buyer could complain to an agency who could then contact the seller.

There needs to be a distinction made between somebody who has a few frogs and decides they don't want some of them anymore and advertises on the net to find new homes - as opposed to somebody who is breeding and needs to sell offspring. Breeders should have some kind of permit and pet shops should continue to be licenced.

QLD recently put out their licencing system out for comment and they were basing licence types on whether you had five or less animals or more than 5. But QLD is also quite paranoid about any animals coming from the wild despite the absolute carnage against frog populations from developments, roads and chemical use. They want to monitor every single movement of every frog, bird and reptile in real time AND they want it totally cost-recovered. I suggested to them that since catching illegal traffic is their top priority, they should base their licence tiers on the number of transactions instead of numbers or species kept. Perhaps there is a way of NSW applying this to internet sellers. But sadly, what is probably needed is a staff person who monitors social media and animal blogs to monitor who is trading and if this is a 'repeat trader' who would then need to be contacted to suggest they need to apply for a licence. In fact, this is also a way to monitor interstate smuggling since some of these people openly advertise on the net that they can get the buyer 'such and such' when they go interstate next week!

page 36 - interstate movements (import/export)

Retention of some kind of notification for interstate movements should be retained, even for Code species. Otherwise this would create a lot of cracks for animals to fall through and some of those would be for illegal trade.

As for the movements of zoo and wildlife park animals, I believe red tape should be distributed equitably! If private keepers need to record all our movements of common native animals, parks should have to do the same.

My last comment concerns the amnesty period that NSW govt included when it brought in its new licence system whenever that was (10 or 15 years ago?). I understand other authorities were not in favour of such a move but I would like to congratulate NSW govt for going ahead with it. Insurance populations are needed for all frog species and those people who have taken the time to properly setup their tiny charges should be allowed to continue their activities. It can lead to great outcomes.

A case in point was the situation in QLD where one of the species of rainbowfish went extinct in the wild. There were some fish keepers who had the species in captivity "against the rules" but they were breeding them. It is those keepers who provided the offspring which were reintroduced to the wild. Without those people making their own decisions of what rules to break, the species would not now exist.

Thank you for reading. Please feel free to contact me if you require any elaborations.