



Frog Decline
Reversal
Project, Inc.

BRIEF SUBMISSION TO THE BIOSECURITY/QUARANTINE REVIEW

(late extension granted by Richard Perry on July 22nd, 08)

Background of submitter:

The Frog Decline Reversal Project, Inc. is a non-profit, frog conservation NGO based in Cairns, FNQ and incorporated since 2001. This group includes the receipt of distressed amphibians as part of a rescue and rehabilitation effort for conservation outcomes but this activity has also turned the organisation into a disease surveillance body by default. Since 1998 when rescue activities started (under another permit), the numbers of frogs arriving with injuries or chytrid fungus have been less than 10% of the total (which now numbers over 2,000 adults and at least 30,000 tadpoles) received. 90% of the animals arriving or collected by the group have been affected by uncatalogued/undescribed diseases and syndromes, a few of which are currently being studied by a joint team effort lead by the AAHL at CSIRO.

Official response to disease issues in amphibians:

By chasing the identities and characterisations of the pathogens present on these animals, a great deal of information useful to other disciplines can be obtained, especially in the area of expected climate change impact and the impacts of insufficiently regulated interstate trade in wildlife. However, our experience has been that as soon as the pathogen being discussed is communicated as being present on an amphibian, the immediate bureaucratic response is usually, "oh, we're talking about frogs - those are low priority - sorry but I have other disease problems to worry about".

The first constructive comment I would like to submit to the review is therefore: "If plague or AI turned up in Australia, would you automatically dismiss the entire situation because the animal that these were found in was an amphibian?" It shouldn't matter in what body or taxon a disease turns up - you're either concerned with the DISEASES that are present or you're not. A disease doesn't simply disappear because it turned up in a common bird instead of an endangered species, or a frog instead of sugar cane, or a snake instead of a human.

Speaking of a 'frog instead of sugar cane' - even those few disease problems which currently garner the interest of 'biosecurity' would be more reliably detected if there was interest in the presence of disease in other taxa, especially amphibians. Immediately after cyclone Larry, a variety of previously unseen skin conditions turned up and locals were reporting that they were

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finding large numbers of dead frogs in their yards. A common clinical symptom of many of the frogs we received for care was green slime in their droppings and a high death rate. We had the green slime tested by the IDEXX lab in Brisbane and they found it to be a heavy infestation of *Ustilago*. A reference search revealed that while *Ustilago* is normally a plant disease, it can be pathogenic to animals and when it is, it kills fast. We also learned that it can be treated with benzalkonium chloride and we immediately put all our frogs in care onto this antifungal with good results. However, the case in point being that before Larry, Mackay was the furthest north (according to news coverage) that DPI had found *Ustilago* in cane; after Larry, it was found in the Moseman area. We know it is was here in Cairns because the frogs told us so.

Does biosecurity have an identity crisis?

Because of the range of pathogens being found on amphibians (even the cane toad is dying out fast up here), we have a current need to dramatically upgrade our handling facilities and we will need the support of biosecurity authorities in that regard. However, initial enquiries to "biosecurity" agencies at the commonwealth level have been declined on the grounds that A) this is a state matter, and B) they are only interested in diseases arriving at the border - once they are here, that's no longer a concern.

The term 'biosecurity' implies a need for monitoring and protection from pathogenic biologics. But when the term is used in Australia, it doesn't actually mean biosecurity at all - it is a more trendy way of saying "biological border control for a small number of nasties that cause economic damage". How can you provide security from biologics if you don't even know what's here, or if you selectively dismiss pathogens that finders try to bring to your attention, or if you use the wrong tools to identify problems that do manage to climb high enough up the ladder to be noticed?

Pathogens do not need to enter Australia from overseas to be diseases of concern. One of the problems we are noticing with the amphibian population is that there are greater and greater issues with indigenous pathogens which have always been here and simply classed as "environmental". These include bacteria and fungi which can cause disease in plants, animals and humans. Both the severe drought of 2000-03 and cat 4/5 cyclone Larry caused enough disturbance in soils in this region to have created new outbreaks of disease in amphibians which are further driving the process of decline and serve to open the door to the spread of these pathogens to other taxa. However, under the current interpretation of biosecurity, these problems are automatically written off because A) they are pathogens created within Australia, and B) amphibians are very low priority. However, what is happening to amphibians now provides some critical information about the impact climate change will have on soil health, potential losses to the food production, and threats to human health - that is, if you're listening to the message in the first place!

Dismissing responsibility for disease investigation to the state level is about as bad as if each state were to have a different level of GST! States already have completely different licencing systems for wildlife and this is allowing for all kinds of unmonitored movements of wildlife, including the illegal movement of diseased animals, to take place. The new disease problems that we have been tracking in amphibians are not state based organisms. Some of them have large geographic areas which we know extend down the coast into NSW and possibly across to the NT; others appear to be exotic emerging diseases which are being carried state to state, especially with the pet trade.

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Anything that is an airborne pathogen moves around the country with our weather patterns. To have all our pathogen problems automatically dismissed as a "Queensland" problem is not appropriate and will never lead to the level of attention and investigation these problems deserve.

Over the past ten years, we have been knocking on doors and sending specimens to anyone who would listen. Much of the time, the lab work we have been able to secure has been interested individuals who have looked at our specimens on their own time. Some results come from commercial vet labs at great expense to our small, undersupported community group. Others we've contacted who have been trying to get new pathogens identified in other types of native wildlife have reported exactly the same situation. This is not the way to find out what pathogens are active in Australia.

It took us five years of lobbying to get the current frog project with CSIRO underway and the second half of this three year project has already been cancelled by the new Rudd government. We have discovered that even the government's top animal health investigation lab does not have the staff nor equipment to identify environmental toxins. In fact, it seems very few labs do. As climate change gets worse, more and more of the pathogens affecting agriculture, human health and biodiversity will be bacterial and fungal toxins caused by changes to soil ecology - and there are less than a handful of labs around the country that can "process" these pathogens, including the Commonwealth govt's own number one vet lab!

Lastly, another concern we would like to present when it comes to pathogen identification in Australia is the notion of zoonotics. Up to now, the government recognises that a disease is zoonotic when some unsuspecting wildlife carer dies, as was the case when two Queensland carers died from Lyssavirus some years ago. Already, we are seeing a wide range of potential zoonotics present on amphibians, especially since cyclone Larry. We have been very precautionary with the public when it comes to collecting frogs for delivery to us for care and we have actively DISCOURAGED wildlife carers in this region from making any attempt to try to look after these animals unless they contact us for training. We have the best procedures possible for a small non-profit but we need to do much better than this. We need to upgrade to a full blown containment setup as many of the bacterial pathogens are small enough to go right through our .03m HEPA filter. However, we are not getting enough financial support to be able to cope with a facility upgrade and the volume of diseased amphibians being found. Both the veterinary and "official" attitudes in the region are: "do you really think these are zoonotic problems - nobody has gotten sick yet, right?". So even after the experience shown by Lyssavirus, the attitude still appears to be that there is no concern for the potential for diseases on wildlife to be zoonotic until somebody dies.

There are a huge number of people around Australia involved in wildlife rescue and rehabilitation and these people are ALL at risk of handling pathogens since a variety of conditions are turning up in a wide range of native animals. Unless the government wants to take over the receipt and rehab of native wildlife, this interest group will need to be supported and nurtured. But the two way communication that needs to exist between "biosecurity" entities and these carers hardly exists. These people are usually the first to handle diseased animals but there is very little

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training (if any) coming from the professional community to teach them what basic procedures to have in place, how to recognise pathogens for the taxa they handle, and what to do if a pathogen is suspected. Likewise, the sheer access to information these carers have is being buried in the dead carcasses that don't go anywhere for investigation.

Our organisation has taken a more aggressive stance to chase down resources which will help us identify amphibian pathogens but we are rare in this regard. One of the major stumbling blocks that has caused significant interference to the process of pathogen identification is the physical logistics of being able to get secure tissues to the particular labs that need to do the specialised work. For example, two of the key researchers I need to work with are in other states and the tissues they need to identify new disease syndromes need to be fresh (preferably live). We are not allowed to send the animals live down to the gov't lab in Geelong or the Registry of Wildlife Pathology in Sydney so the tissues must be fixed and that immediately eliminates entire ranges of testing enquiry. If we were to limit ourselves to labs within Queensland, then we could try to request a greater range of tests but these labs have no-one experienced with the interpretation of results on amphibians. In the case of JCU Townsville, they are under-resourced so while they have the amphibian expertise for some pathogen groups, they do not have the resources to cope with the massive volume of amphibian material that comes to them from the entire country, nor do they have the equipment or staff to handle environmental toxin identification.

Basic suggestions for the way forward:

- a) How do you define "biosecurity" -- limited border protection only, or the pursuit of pathogen presence in Australia for the protection of all (human, plant and animal)?
- b) Sufficient and appropriate staffing and equipment to enable detection of the full range of pathogens that are already present in Australia as well as preparedness for those which could become issues in the future (e.g., the new generation directly transmissible cancer that has been found on Tassie Devils).
- c) Regulations need to be inclusive of the need to ensure diseased animals can be received at credible institutions and in a form that allows proper pathogen detection, regardless of state borders. This may mean a special transport system is created and run by biosecurity which only handles the movement of plants and animals in a secure form to appropriate labs, OR: it means that there needs to be more fully functioning diagnostic labs established in all states so full diagnostic capabilities are easily accessible in all states.
- d) A new receiving centre needs to be setup in Cairns as a key entry port for pathogen entry in the biologically fertile conditions of the tropics and because this region seems to be the country's "hotspot" for new amphibian diseases. This facility should be able to receive and "process" plants and animals for disease identification purposes and either have some laboratory capabilities on site or be linked to other labs so that partially processed fresh tissues can be transported to where they need to go for the range of diagnostics that is required.

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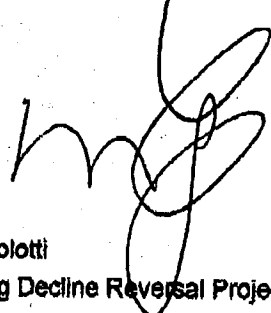
e) All pathogens present in Australia regardless of source need to be identified before a suitable risk analysis can be undertaken for each of them. The current system automatically dismisses pathogens based on taxa which means that risk is being assumed or ignored without any empirical knowledge of what is here and active.

f) Educational opportunities need to be created, especially with the wildlife rehabilitation community, so that their access to wildlife is conducted safely and so that the information they have access to can be collected and used.

If you would like to discuss the content of this submission, please contact me via phone in the afternoons only on (07) 4033-0723 or via email at any time. I understand that there will be no opportunities to meet with the panel in Cairns but if any of the panel members should be in Cairns for other business, we would appreciate the opportunity to demonstrate our work firsthand.

Thank you for your consideration.

Sincerely,



Deborah Pergolotti
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(Cairns Frog Hospital)
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