**Frog Mortality Notification**

**Seeking frogs for disease investigations**

**Summary**

Over the last few weeks there have been a flurry of reports of sick and dead frogs across eastern Victoria, NSW and Queensland. While the first cold snap of each year can be accompanied by a few localised frog mortalities, this outbreak has impacted more animals over a greater range than previously encountered. The Australian Registry of Wildlife Health, the Australian Museum, Wildlife Health Australia and state government environment and biosecurity agencies are working together to investigate the event and determine the likely cause.

Currently a combination of the amphibian chytrid fungus and the chilly temperatures are suspected to be the cause, however we simply don’t know the full story and what other factors may be involved (see background below). We also aren’t sure how widespread this frog mortality event is, what impact it will have on our frog populations, or how long it will last. While the temperatures stay low, we suspect that frogs will continue succumbing. If we don’t investigate quickly, we will lose the opportunity to achieve a diagnosis and understand why. See [**The Conversation Article**](https://theconversation.com/dead-shrivelled-frogs-are-unexpectedly-turning-up-across-eastern-australia-we-need-your-help-to-find-out-why-165176) **for further background (29 July 2021).**

**We are seeking your help as frontline wildlife health professionals.**

**LOOK**

The following signs in any frog species have been seen so far:

* Lethargic (slow to move)
* Thin (emaciated)
* Skin discolouration (lighter or darker than normal)
* Red bellies, red feet and excessive sloughed skin have been seen in some frogs.

**REPORTING & NEXT STEPS**

**PRIORITY -** Sick frogs or frogs that have died within 24hrs. Advice for veterinarians regarding triage, euthanasia and sample collection is provided below. To ensure a nationally consistent approach, the Australian Registry of Wildlife Health can provide further guidance to veterinary clinics who are receiving sick and dead frogs. You can contact
Dr. Karrie Rose at: 0402 553 537.

**IF POSSIBLE –** Please provide any information on dead frogs to help us to better understand the how widespread and the level of impact on frog populations. You can send information about dead frogs (and if possible, photos) to the national citizen science project [FrogID](https://www.frogid.net.au/) calls@frogid.net.au. You can also use the attached sick and dead frog reporting spreadsheet to submit a list of frogs you have had had in your care. If you receive animals that have been dead for more than 24 hours, please freeze the remains. Include a label documenting species, location, date and whether euthanased or died and note this has been done in your report. These samples may be requested in future for additional diagnostics and / or by curators at state-based museums for conservation studies.

**BIOSECURITY**

**Always protect yourself and other animals in your care.** Frogs can carry diseases which in some cases may be transmissible to other frogs, other wildlife and people. **Therefore**[**best practice biosecurity measures**](https://www.wildlifehealthaustralia.com.au/Portals/0/Documents/ProgramProjects/National_Wildlife_Biosecurity_Guidelines.PDF)**are recommended, and includes:**

* Wearing a new pair of disposable Nitrile or latex, powder free gloves for handling each frog.
* Use a clean plastic bag / cleanable container for transporting each frog (for live frogs, ensure the bag is not airtight).
* Isolate and quarantine all new frogs being brought into care. Keep each frog, tank and cleaning/feeding utensils separate. Frogs originating from the same location may be housed together as one isolation group.
* Whenever possible, do not house sick frogs if you also care for other frogs.
* After a thorough cleaning, disinfect tanks and cleaning instruments with F10 or bleach solution (1 part bleach:9 parts water) with 10-15 minutes contact time.
* Used tank water can be disinfected with 1 part bleach:9 parts tank water. The treated water can then be disposed of in small volumes down the toilet, where it will be further treated.

**TRIAGE, EUTHANASIA & SAMPLE COLLECTION**

**Triage**

A small proportion of sick frogs has responded to supportive care. Profoundly sick frogs are moribund, poorly responsive to stimuli, have very obvious pelvic bones and are darkly discoloured. These animals are likely to have a grave prognosis and euthanasia should be considered.

**Euthanasia**

If the frog is sick and unlikely to survive, it should be euthanased by a licensed veterinarian using methods listed as acceptable in the American Veterinary Medical Association’s Guidelines for the Euthanasia of Animals ([PDF 11.8MB](https://www.avma.org/sites/default/files/2020-01/2020-Euthanasia-Final-1-17-20.pdf); AVMA 2020; as per[NSW 2020](https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Wildlife-management/saving-our-species-hygiene-guidelines-200164.pdf)).

The following is an excerpt from: Rose, Hall 2021. Wildlife Health Investigation Manual, Taronga Conservation Society Australia, Sydney. Pp 221.

“Euthanasia of severely debilitated amphibians can be achieved with drugs available in most clinics:

* Isoflurane (use only in a well-ventilated space/induction chamber/outdoors or a Chemical Cabinet) – 1mL/L water but use the smallest volume of warm water required to cover the animal in a small, sealed tub. Keep the animal in the bath until all movement has ceased for 10 minutes.
* Alternatively, alfaxalone can also be delivered intramuscularly at a dose of 10 - 25 mg/kg.

After you have used either of these methods, rapid decapitation with a scalpel of sharp knife is an effective secondary method to effect human euthanasia.

Chilliing and freezing reptiles, exsanguination and decapitation are **not** considered humane methods of euthanasia without prior anaesthesia.”

**Sample Collection if you euthanase a sick frog or have a recently deceased frog please collect:**

**Minimal sample set:**

* Incise the abdomen and place the remains in formalin as soon as possible.
* Jar labelled with date, location, died/euthanased.

**Optimal sample set:**

* A history including species (if known), location, clinical signs, treatment and whether euthanased or died.
* Photos– ventrum and dorsum.
* A strip of skin extending from the knee to midabdomen into a small sterile vial.
* As cleanly as possible, incise the ventral abdomen. Using clean scissors and forceps collect half of the liver into a sterile vial.
* Place the remains into formalin.
* Label and freeze the skin and liver samples as soon as possible
* To ensure the most appropriate samples are submitted and stored appropriately during transport, please call your local [State / Territory Wildlife Health Australia (WHA) Coordinator](http://www.wildlifehealthaustralia.com.au/AboutUs/ContactDetails.aspx), or contact the corresponding laboratory (e.g. the Registry in NSW) in your state/territory prior to collecting or submitting any samples.

**Please remember, if you see any other unusual signs of disease or mass deaths in wildlife you can report it to:**

* Your local State/Territory WHA Coordinator <https://wildlifehealthaustralia.com.au/AboutUs/ContactDetails.aspx>
* The 24-hour Emergency Animal Disease Watch Hotline on free call 1800 675 888
* The Department of Primary Industries or Agriculture in the State/Territory in which the event has occurred.

**Further Information**

* Amphibian Disease Knowledge Base: <https://www.arwh.org/amphibian-disease-knowledgebase/>
* Wildlife Health Australia Fact Sheets: <https://www.wildlifehealthaustralia.com.au/FactSheets.aspx>
* Aquatic Animal Diseases Significant to Australia: Identification Field Guide 5th Edition: <https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide>