

2023–24

# FrogID report

The Australian Museum's FrogID project continues to be a leading citizen science initiative, delivering impactful research and gathering valuable frog data across Australia. Frogs are vital bioindicators, and the data collected informs our understanding of ecosystem health while advancing biodiversity research and conservation.

Between 1 July 2023 and 30 June 2024, a community of over 16,000 FrogID participants gathered more than 221,500 scientific records of frogs, representing 199 unique species spanning the breadth of Australia. It was during this period that FrogID reached a total of more than **one million** scientific records of frogs. Notably, 41 new grid cells with frog records were achieved, increasing the spatial coverage of the national FrogID dataset to 37.4%. These impressive numbers underscore FrogID's crucial role in bridging gaps in frog records nationwide, significantly enhancing our understanding of frog populations and ecosystem health across Australia.



# Key statistics



**134,522**

Audio submissions



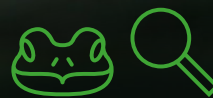
**16,322**

users submitted frog records



**221,566**

Frog records



**199**

frog species



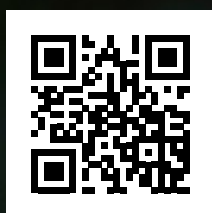
**112,000**

app downloads



**41**

new grid cells with frog records (from 36.0% to 37.4% of Australia)



Scan for the latest  
FrogID stats

# Research

During this period, FrogID data was cited and used by researchers to advance citizen science and biodiversity studies across Australia. Additionally, the FrogID team at the Australian Museum authored eight scientific papers, making significant contributions to our understanding of Australia's frogs.

## Faded out: What environments did Australian frog populations disappear from due to disease?

Scheele, B.C., Heard, G.W., Cardillo, M., Duncan, R.P., Gillespie, G.R., Hoskin, C.J., Mahony, M., Newell, D., Rowley, J.J.L., and Sopniewski, J. (2023). An invasive pathogen drives directional niche contractions in amphibians. *Nature Ecology and Evolution*. 7, 1682–1692. DOI: <https://doi.org/10.1038/s41559-023-02155-0>

FrogID-informed research examined how the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) has affected frog species across eastern Australia. The study showed that the pathogen has not only altered the geographic ranges of frogs but also changed the types of environments they occupy.

## Can farm dams help support frog conservation?

Malerba, M.E., Rowley, J.J.L., Macreadie, P., Frazer, J., Wright, N., Zaidi, N., Nazari, A., Thiruvady, D., Driscoll, D. (2023). Conserving nature's chorus: local and landscape features promoting frog species richness in farm dams. *Biological Conservation*. 286, 110270. DOI: <https://doi.org/10.1016/j.biocon.2023.110270>.

In collaboration with Deakin University, the FrogID team highlighted the key role of farm dams in supporting frog species. Over 100,000 FrogID records mapped 107 species near 8,800 dams. Older dams (over 20 years, 0.1 hectares) hosted the most diverse frog populations, with higher biodiversity found near other freshwater systems and conservation areas.

## Funnier than the original: Introducing the Western Laughing Tree Frog

Donnellan, S., Catullo, R., Rowley, J.J.L., Doughty, P., Price, L., Hines, H.B., Richards, S.J. (2023). Revision of *Litoria rothii* (Anura: Pelodyadidae) from northern Australia. *Zootaxa*. 5352 (1): 73–108. DOI: <https://doi.org/10.11646/zootaxa.5352.1.3>.

FrogID researchers revealed that Roth's Tree Frog (*Litoria rothii*) isn't a single species, but two distinct species. Over 8,000 FrogID recordings helped in the identification of the Western Laughing Tree Frog (*Litoria ridibunda*), found in Western Queensland, the Northern Territory, and Western Australia. This new species is distinguished by its less brightly patterned thighs and a "laugh" call that is longer than its original counterpart's.

## Smooth operators: Introducing a tiny new smooth frog from southern Victoria

Parkin, T., Donnellan, S.C., Parkin, B., Shea, G.M., Rowley, J.J.L. (2023). Phylogeography, hybrid zones and contemporary species boundaries in the south-eastern Australian smooth frogs (Anura: Myobatrachidae: *Geocrinia*). *Molecular Phylogenetics & Evolution*. 189, 2023, 107934. DOI: <https://doi.org/10.1016/j.ympev.2023.107934>

FrogID-informed research led to the scientific description of the Otway Smooth Frog (*Geocrinia sparsiflora*), a species unique to Victoria's Otway Plains and Ranges. By examining genetics, body shape, appearance, and over 800 FrogID-submitted frog calls, researchers confirmed this species is found in a restricted distribution, emphasising the role of FrogID in expanding our understanding of Australia's frogs and biodiversity.

## Fighting the flames – how did frogs fare after the Black Summer bushfires?

Mitchell, B.A., Gorta, S.B.Z., Callaghan, C.T., Kingsford, R.T., Rowley, J.J.L. (2023) Fighting the flames: site specific effects determine species richness of Australian frogs after fire. *Wildlife Research*. WR22175. DOI: <https://doi.org/10.1071/WR22175>

This paper provided new insights into the resilience of frog populations after the Black Summer bushfires of 2019–2020. FrogID data revealed no overall decline in frog species richness in burnt areas. The study demonstrates the value of FrogID citizen science contributions in monitoring long-term persistence of frogs following ecological disturbance.

## Something to whistle about: Two "whistling" frogs in South Australia new to science

Parkin, T., Rowley, J.J.L., Elliot-Tate, J., Mahony, M., Sumner, J., Melville, J. & Donnellan, S.C. (2024). Systematic assessment of the brown tree frog (Anura: Pelodyadidae: *Litoria ewingii*) reveals two endemic species in South Australia. *Zootaxa*. 5406 (1): 1–36. DOI: [10.11646/zootaxa.5406.1.1](https://doi.org/10.11646/zootaxa.5406.1.1)

This paper found that the Brown Tree Frog (*Litoria ewingii*) is not one, but three distinct species. Acoustic data from FrogID contributed to describing two newly identified species: the South Australian Tree Frog (*Litoria calliscelis*) and the Kangaroo Island Tree Frog (*Litoria sibilus*). This discovery highlights FrogID's valuable role in uncovering Australia's frog biodiversity.

# Research

## Exploring diversity in Australia's banjo frogs or 'pobblebunks'

Parkin, T., Rowley, J.J.L., Gillard, G., Sopniewski, J., Shea, G.M. & Donnellan, S.C. (2024). Systematics and taxonomy of the Northern Banjo Frog (Anura: *Limnodynastidae*: *Limnodynastes terraereginae*) and allied taxa. *Ichthyology and Herpetology*. 112(1):76-105. DOI: <https://doi.org/10.1643/h2023025>

FrogID has revised our understanding of three banjo frog species in eastern Australia: The Superb Banjo Frog (*Limnodynastes terraereginae*), a striking species found in Cape York Peninsula, QLD; the Scarlet-sided Banjo Frog (*Limnodynastes grayii*), widespread from NSW to north QLD; and the Coastal Banjo Frog (*Limnodynastes superciliaris*), a small species in sandy habitats from Sydney to NSW's mid-north coast. This revision adds two species to the number of known frog species from Australia.

## What's in a whistle? Your go-to guide for telling frog whistles apart

Elliott-Tate, J. & Rowley, J.J.L. (2024). Unravelling male advertisement call variability in the brown tree frog (*Litoria ewingii*) complex by using citizen science. *Australian Journal of Zoology* 72, ZO23026. DOI: <https://doi.org/10.1071/ZO23026>

FrogID research on five species of whistling frogs in southeastern Australia has helped distinguish these similar-looking and sounding species. The study examined variations in note number, volume patterns, and note positioning, providing a useful guide for identifying these frogs based on their calls, thanks to thousands of FrogID submissions.

## FrogID dataset 5.0

Thanks to the contributions of tens of thousands of FrogID citizen scientists, the fifth instalment of the FrogID dataset was released in June 2024, resulting in close to 800,000 frog records. As a result, this FrogID dataset was almost equal in size to all other frog records ever gathered since record keeping began (*Atlas of Living Australia*). The dataset covers 218 of Australia's known frog species, plus the introduced Cane Toad (*Rhinella marina*) – 86% of Australia's known frog species at the time of release. Some notable submissions in the latest dataset include Western Australia's Sunset Frog (*Spicospina flammocaerulea*) and Southern Sandhill Frog (*Arenophryne xiphorhyncha*), the tiny Ratcheting Toadlet (*Uperoleia stridera*) from arid Western Australia and the Northern Territory, along with the Critically Endangered Kroombit Tree Frog (*Litoria kroombitensis*) from Kroombit Tops in southeast Queensland. The impressive expert-verified dataset is now online and free to access from the FrogID website, Atlas of Living Australia and every state wildlife atlas to help inform biodiversity conservation and management.

Sunset Frog  
(*Spicospina flammocaerulea*)  
by Tom Parkin



# FrogID Week 2023

The Australian Museum's sixth annual FrogID Week, held in November 2023, gathered over 31,000 frog records thanks to more than 4,700 citizen scientists. The 13th of November was when 4,249 frogs were recorded in just 24 hours - that's over three frog records per minute!

This expert-verified data contributes to the national FrogID dataset, which aids in advancing frog research and conservation across Australia. The event received over 17,700 submissions and recorded 112 frog species, including the Critically Endangered Wollumbin Pouched Frog (*Assa wollumbin*), found only on Mount Wollumbin, NSW.

Other significant frog records include the Otway Smooth Froglet (*Geocrinia sparsiflora*) in Victoria, described as new to science in 2023 with the help of FrogID, and the unique, alien-like Turtle Frog (*Myobatrachus gouldii*) from WA.


These species face multiple threats, including disease, habitat destruction, invasive species, and drought. The year-on-year data collected during FrogID Week remains an important resource for understanding and conserving Australia's frog species.

**"This data is used not just by Australian Museum scientists, but shared on biodiversity atlases across Australia to help anyone advance their understanding and monitoring of frog biodiversity and the health of ecosystems."**


Dr Jodi Rowley

Thanks to thousands of participants across Australia, every FrogID Week adds value to our national understanding of frogs and what is required to better conserve them.

  
**17,700+**  
recordings submitted

  
**4,700**  
users who submitted a call with the FrogID app

  
**31,200+**  
frog records

  
**112**  
species found

## FrogID media reach:

  
**166**  
media items published across the world

  
**137,949,200**  
cumulative audience reach



# Discovering species as new to science

The acoustic data of FrogID continues to help advance our understanding of the true species richness in Australia. During this period, **six new species** were described as new to science, in part informed by thousands of FrogID submissions!



Western Laughing Tree Frog  
(*Litoria ridibunda*)



Otway Smooth Frog  
(*Geocrinia sparsiflora*)



South Australian Tree Frog  
(*Litoria callicelis*)



Kangaroo Island Tree Frog  
(*Litoria sibilus*)



Scarlet-sided Banjo Frog  
(*Limnodynastes grayi*)



Coastal Banjo Frog  
(*Limnodynastes superciliaris*)

# Thank you

We extend our heartfelt thanks to the thousands of FrogID participants for their ongoing, invaluable contributions to the project. We are also grateful to the generous donors, including the NSW Biodiversity Conservation Trust, who have supported our work. Our thanks extends to our Museum partners – the Museum and Art Gallery of the Northern Territory, Museums Victoria, Queensland Museum, South Australian Museum, Tasmanian Museum and Art Gallery, and Western Australian Museum – for their collaboration as FrogID partner Museums. Lastly, we deeply appreciate the many Australian Museum staff members who form the heart of the FrogID team.

FrogID has made remarkable strides in advancing frog research, providing crucial data that informs conservation efforts, shapes policy, and drives biodiversity initiatives. The growing number of submissions, new species records—including some new to science—and published findings all demonstrate the project's success. As the Australian Museum team works to maintain FrogID as a free resource, we're committed to ensuring its future, empowering more people to understand and conserve frogs across Australia. We truly appreciate your ongoing support and contributions to this important work.



Jacqueline Bradley recording frog calls during FrogID Week.  
Photo Nadiah Roslan



Tim Cutajar recording frog calls from bushfire-affected habitat.  
Photo Jodi Rowley

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#### Acknowledgements

The Australian Museum acknowledges and pays respect to the Gadigal people as the First Peoples and Custodians of the land and waterways on which the Australian Museum stands.

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Kroombit Tree Frog  
(*Litoria kroombitensis*)  
by Stephen Mahony



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