Citing data in biogeography: *The Atlas of Living Australia*

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ATLAS OF LIVING AUSTRALIA
sharing biodiversity knowledge

The Atlas of Living Australia (ALA) is a free online resource, which provides access to a wealth of information about Australia's biodiversity.

…information available includes **species occurrence records** (based on field observations, specimens from biological collections, and surveys), photographs, sound recordings, maps, molecular data, and links to additional literature.

Vouchered specimens in biological collections such as museums & herbaria

Specimens provide essential information:

- Morphology
- Genetics
- Geography
- Phenology

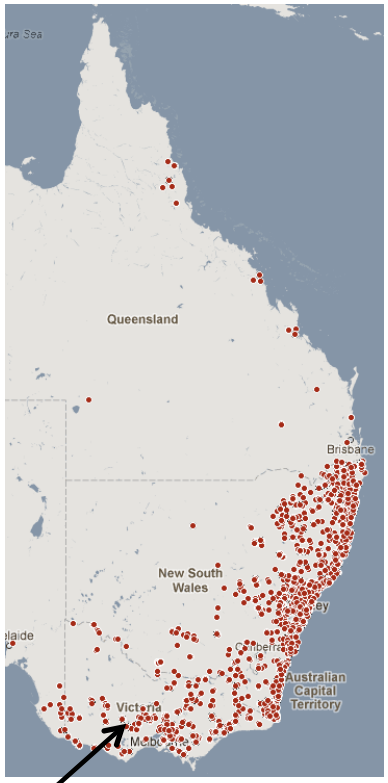
→

- Taxonomy
- Systematics
- Macroecology
- Ecology
- Conservation

Vouchered specimens in biological collections such as museums & herbaria

Specimen & survey records

Collection	Museum Victoria Mammalogy Collection
Catalogue number	C 22667
Basis of record	Preserved Specimen
Preparations	Skeleton
Collecting date	1965-06-02
Sex	Female
Individual count	1
Scientific Name	Acrobates pygmaeus
Common name	Feathertail glider
Locality	Trawalla forest reserve
Latitude	-37.45
Longitude	143.42



Two models of access and citation

Regulated access

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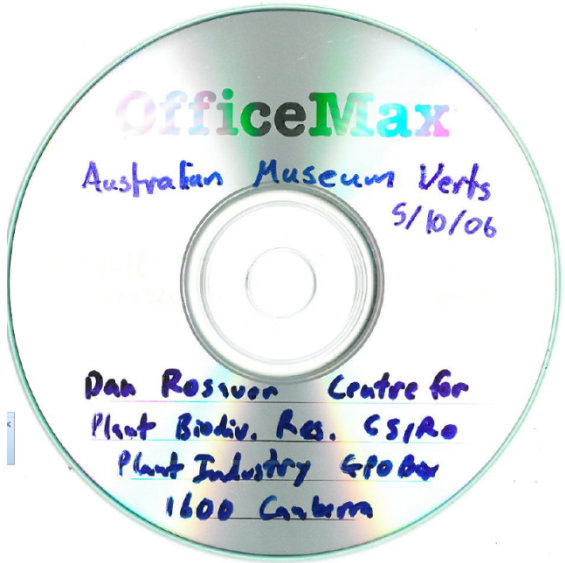
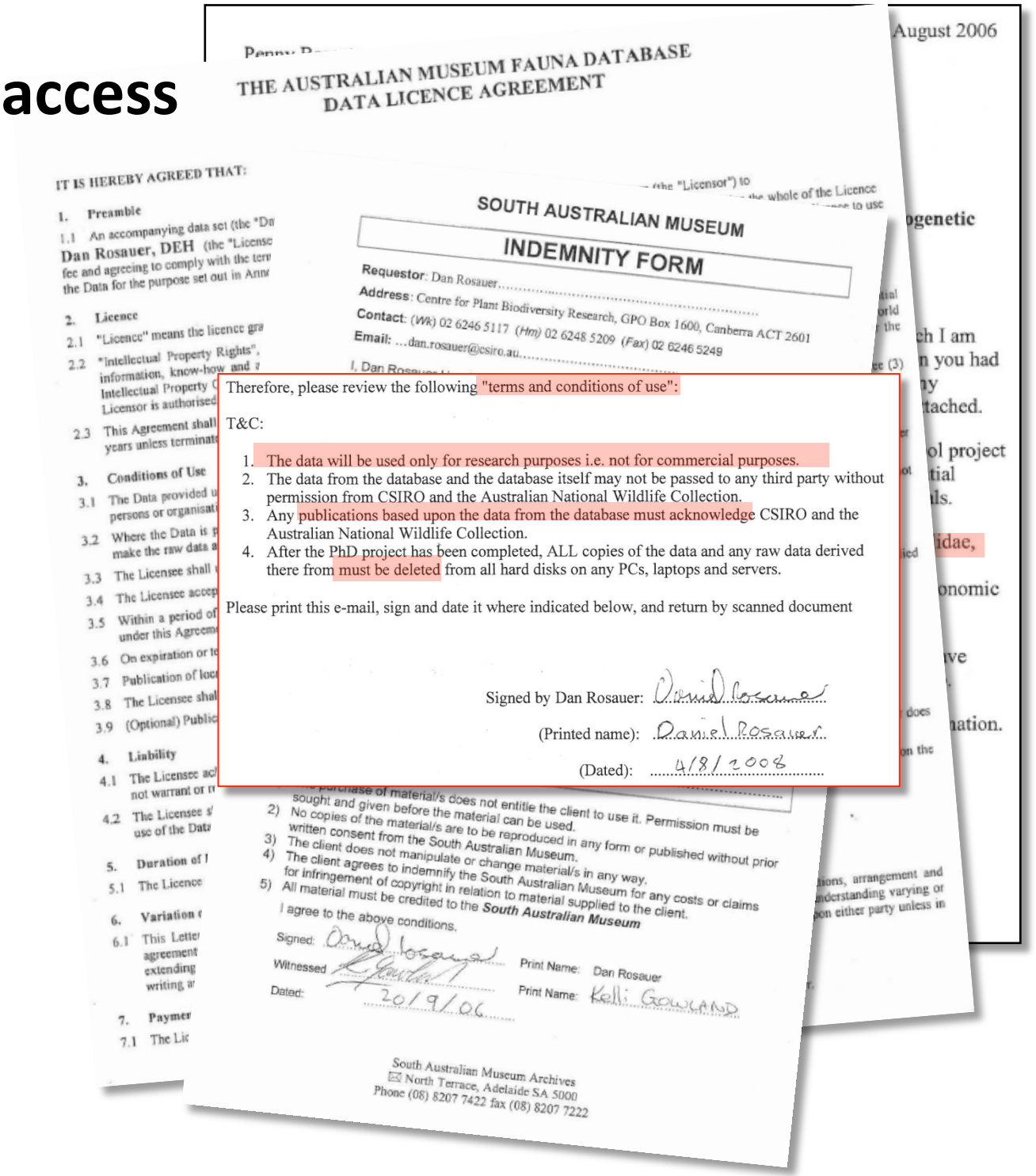
Individual citation / acknowledgement





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PLOS | ONE

Independent Transitions between Monsoonal and Arid Biomes Revealed by Systematic Revison of a Complex of Australian Geckos (*Diplodactylus*; Diplodactylidae)

Paul M. Oliver[1,2,3]*, Patrick J. Couper[4], Mitzy Pepper[3] **Published:** December 10, 2014

Fig 13. Holotype of *Diplodactylus bilybara* sp. nov. (WAM R174500). 21km south of Barradale, Western Australia. (Image: Peter Waddington, QM).

doi:10.1371/journal.pone.0111895.g013

Table 1. Museum Voucher and locality details of all specimens included in phylogenetic analyses.

Museum Number	Species	Locality	Latitude (dec.)	Longitude (dec.)	Genbank #
WAMR157640	*conspicillatus*	Newman, WA	-23.3097	119.7569	KM267082
SAMAR20884	*conspicillatus*	Olympic Dam area, Roxby Downs, SA	-30.3833	136.8833	FJ665543
SAMAR45256	*conspicillatus*	Salt Ck Cross E L Gairdner, SA	-31.5500	136.3500	FJ665541
SAMAR51587	*conspicillatus*	Amata, SA	-26.2828	131.4867	FJ665542
WAMR110770	*conspicillatus*	Jimblebar East, WA	-23.4406	120.3333	JX946871
WAMR110769	*conspicillatus*	Jimblebar East, WA	-23.3656	120.3211	JX946870
WAMR110762	*conspicillatus*	Jimblebar East, WA	-23.3947	120.3097	JX946873
WAMR110767	*conspicillatus*	Jimblebar East, WA	-23.3961	120.3100	JX946874
SAMAR46981	*conspicillatus*	Mosquito Camp Dam, SA	-26.1578	134.5136	FJ665547
SAMAR26512	*conspicillatus*	Granite Downs Station, WA	-26.9500	133.5667	FJ665545
SAMAR26513	*conspicillatus*	Granite Downs Station, WA	-26.9500	133.5667	FJ665544
SAMAR51514	*conspicillatus*	3.3k SW Indulkana, SA	-26.9800	133.2700	FJ665546
WAMR136643	*conspicillatus*	Lake Mason Station, WA	-27.6975	119.2800	KM267080
WAMR136647	*conspicillatus*	Lake Mason Station, WA	-27.7141	119.5311	KM267081
WAMR97324	*conspicillatus*	Mount Windarra, WA	-28.4583	122.2417	JX946799
WAMR144640	*conspicillatus*	Kalgoorlie, WA	-30.2014	120.9742	JX946847
SAMAR42574	*conspicillatus*	168 km NE of Emu, SA	-28.2333	133.3333	FJ665539

Two models of access and citation

Access on demand
No regulation
+
Bulk acknowledgement

Two models of access and citation

Access on demand
No regulation
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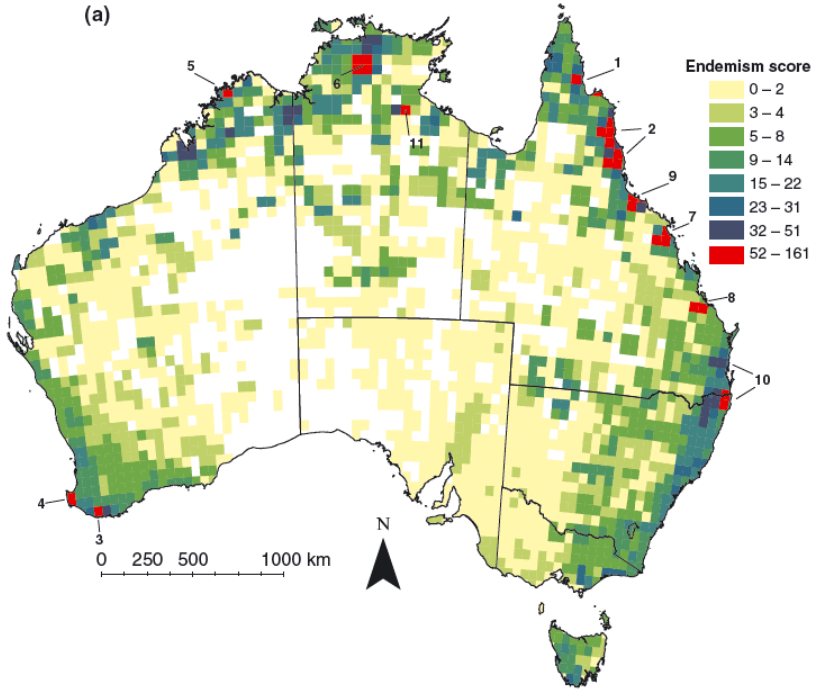
Bulk acknowledgement

An assessment of endemism and species richness patterns in the Australian Anura

Cameron Slatyer[1], Dan Rosauer[1]* and Francis Lemckert[2,3]

Journal of Biogeography

Methods 97,338 records were assembled, covering 75% of the continent.



Areas of endemism for Australian frogs

ACKNOWLEDGEMENTS

We gratefully acknowledge the assistance of the Heads of Collections of Australian Museums and particularly Ken Walker and Les Christidis for granting access to specimen data via the online virtual museum project (OZCAM), and Dale

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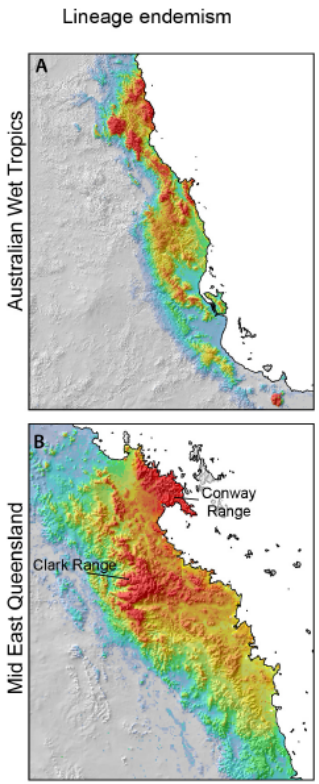

PLOS ONE

Lineage Range Estimation Method Reveals Fine-Scale Endemism Linked to Pleistocene Stability in Australian Rainforest Herpetofauna

Dan F. Rosauer[1]*, Renee A. Catullo[1,2], Jeremy VanDerWal[3,4], Adnan Moussalli[5], Craig Moritz[1,2]

Methods

For each species we collated… known locations of each species… from museums and other collections via the Atlas of Living Australia (ALA; www.ala.org.au)

Table 1. Lineages of rainforest specialist lizards and frogs included in the study.

Family	Genus	Species	Lineages	# of lineage records	Data sources
Agamidae	*Hypsilurus*	1	2	73	[25]
Carphodactylidae	*Carphodactylus*	1	4	188	[31]
Carphodactylidae	*Phyllurus*	10	10	1259	[28,32,33]
Carphodactylidae	*Saltuarius*	5	6	339	[31,34,35]
Gekkonidae	*Cyrtodactylus*	5	5	71	[29]
Hylidae	*Litoria*	6	14	407	[36]
Myobatrachidae	*Mixophyes*	3	3	115	[37]

All original specimen records also published as supplementary data

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Access on demand

No regulation

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Bulk

acknowledgement

55,929,317 unique records for 229,218 accepted species…

records were contributed to the GBIF network by 238 publishers in 48 countries

PeerJ PrePrints

Multidimensional biases, gaps and uncertainties in global plant occurrence information

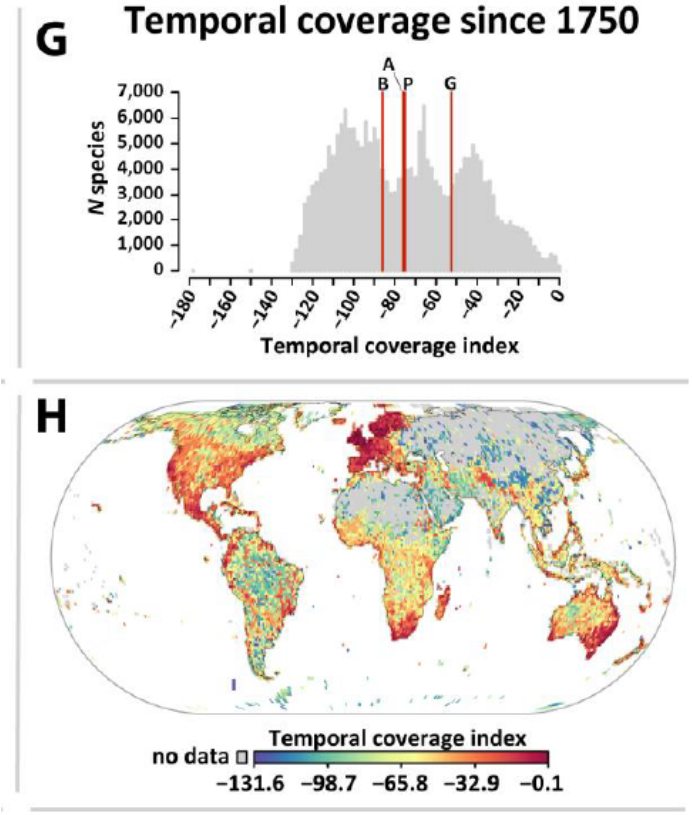
Carsten Meyer[1], Patrick Weigelt[1,2], Holger Kreft[1]

Methods

Point-occurrence information

We downloaded all data for land plants available via GBIF in January 2014 (c. 120 M).

These steps led to a reduction of 119,058,280 raw records with 2,206,831 verbatim name strings to 55,929,317 unique records for 229,218 accepted species from 3,947,969 unique sampling locations and 3,172 year-month combinations (*SI.1.1*). These records were contributed to the GBIF network by 238 data publishers in 48 countries. The majority of these records (78%)



Issues

- Detailed studies of individual specimens / collections are suited to traditional acknowledgment
- The same data aggregation which makes big-picture findings about biodiversity possible, may also defeat genuine recognition of data creators and custodians
- Archiving a data snapshot may be a solution in some cases