

What's in Our Creeks?

Reflections from 2025 Enoggera and Fish Creeks Surveys



What is eDNA?

eDNA = Environmental DNA

Genetic material shed by organisms in the environment.

Advantages:

- Non invasive
- Easy and fast
- Can identify 1000 species at a time!

Limitations:

- Snapshot in time and space only
- Detection sensitivity
- Reference database available



Methods

Wilderlab eDNA syringe kit



- Filtering 1L of water per sample (20 x 50ml)
- 3 samples per sites (upstream, middle, downstream)



9 Sampling sites



Wittonga

Glenella St

Walton Bridge

Taylor Range

Yoorala St

Riaweena St

Reservoir

Wattle Creek 1

Wattle Creek 2

Our 2025 eDNA Sampling Team!



Monika



Sue



Andrew



Rick



Fanny

Sample analysis

Analysis done by Wilderlab

Results publicly available online at: <https://www.wilderlab.co.nz/explore>

The screenshot displays the Wilderlab website interface. At the top left is the Wilderlab logo, a blue DNA double helix with the text 'WILDERLAB' below it. To the right of the logo is a navigation menu with links for 'ORDER', 'SUBMIT', 'EXPLORE', 'MORE INFO', and 'CONTACT'. A search bar with the text 'SEARCH' and a magnifying glass icon is positioned to the right of the navigation menu. Below the navigation is the 'Discover DNA' section, which includes a paragraph of text explaining the eDNA data collection and its availability. Below the text are search filters for 'Search by sample/job number', 'Search by species/taxon', 'Start date', and 'End date'. To the right of the search filters is a map interface with 'Map' and 'Table' tabs, a zoom control, and a map showing a satellite view of a river with a green circle labeled '7' indicating a specific location.

WILDERLAB

ORDER SUBMIT EXPLORE MORE INFO CONTACT

SEARCH

Discover DNA

Explore and download the collection of publicly available eDNA data with our interactive web application, developed as part of the [Wai Tuwhera o te Taiao](#) programme on behalf of the Environmental Protection Authority. Note that eDNA results do not appear on the map by default; Wilderlab clients have the option to make their data public when completing the [sample submission form](#), or at any later date by notifying us in writing. This provides a useful resource for scientists, conservationists, educators, and anyone else with an interest in Australasia's biodiversity, water quality and biosecurity.

Map Table

Show advanced options

Search by sample/job number ?

Enter search term

Search by species/taxon ?

Enter taxon/species name or taxon ID

Start date

08-Feb-2022

End date

07-Feb-2025

eDNA results

ScientificName	Rank	TaxID	CommonName	Group	Dam	Yoorala	Riaweena	Walton Bridg	Taylor Range	Wittonga	Fish Creek
Tandanus tandanus	species	512777	"Dewfish; eel-tailed catfish"	Fish	7953	40856	190694	3620	58289	0	0
Hypseleotris klunzingeri	species	166778	"Western carp gudgeon"	Fish	96098	56925	4623	4019	12584	0	0
Gambusia holbrooki	species	37273	"Eastern mosquitofish"	Fish	85833	12429	30	3994	5222	0	0
Rhinella marina	species	8386	"Cane toad; Marine toad; C"	Amphibians	0	66029	11369	2959	5639	1018	1133
Potamothenix bavaricus	species	745771	"Aquatic oligochaete worm"	Worms	0	0	0	45865	131	0	2072
Mogurnda adspersa	species	78195	"Purple-spotted gudgeon"	Fish	0	0	83	32535	4617	143371	51296
Branchiura sowerbyi	species	195543	"Oligochaete worm"	Worms	53	692	2980	30656	2583	0	6217
Anguilla reinhardtii	species	48165	"Speckled longfin eel"	Fish	1033	7633	8542	8225	6257	97	16622
Retropinna semoni	species	182228	"Australian smelt"	Fish	0	0	0	21843	7922	0	0
Craspedacusta sowerbii	species	128124	"Freshwater jellyfish"	Cnidarians	0	1986	297	20902	6115	0	3173
Melanotaenia fluviatilis or melanc	species	10000122	"Duboulay or Murray River"	Fish	0	0	27	23190	0	0	39646
Daphnia lumholtzi	species	42856	"Water flea"	Crustaceans	18348	101	0	0	0	0	0
Hypseleotris compressa	species	92064	"Empire gudgeon"	Fish	0	3477	160	1274	11961	0	0
Percalates novemaculeata	species	45783	"Australian bass"	Fish	521	153	13355	0	2639	0	0
Gobiomorphus australis	species	150301	"Striped gudgeon"	Fish	0	3249	10	4125	7472	0	3246
Spathodea campanulata	species	211926	"African tuliptree"	Plants	0	0	13256	597	969	0	0
Chydorus brevilabris	species	362310	"Water flea"	Crustaceans	0	0	2557	9316	512	0	0
Boeckella minuta	species	3020268	" "	Crustaceans	235	9944	0	0	0	0	0
Xiphophorus hellerii	species	8084	"Green swordtail"	Fish	0	2763	4544	777	0	0	40390
Szygium floribundum	species	220036	"Weeping lilli pilli"	Plants	0	0	1845	3767	723	0	0
Corbicula australis	species	10000000	" "	Molluscs	0	0	0	1000	0	0	0
Sturnus vulgaris	species	10000000	" "	Birds	0	0	0	1000	0	0	0
Nymphaea mexicana	species	10000000	" "	Plants	0	0	0	1000	0	0	0
Nasturtium officinale	species	10000000	" "	Plants	0	0	0	1000	0	0	0
Ricinus communis	species	10000000	" "	Plants	0	0	0	1000	0	0	0
Limnodrilus hoffmeisteri	species	10000000	" "	Worms	0	0	0	1000	0	0	0
Anguilla australis	species	10000000	" "	Fish	0	0	0	1000	0	0	0
Colocasia esculenta	species	10000000	" "	Plants	0	0	0	1000	0	0	0
Urochloa mutica	species	10000000	" "	Plants	0	0	0	1000	0	0	0
Axonopus compressus	species	10000000	" "	Worms	0	0	0	1000	0	0	0
Lumbriculus variegatus	species	10000000	" "	Worms	0	0	0	1000	0	0	0
Sparganophilus sp. HI-2019	species	10000000	" "	Worms	0	0	0	1000	0	0	0
Bothrioneurum vejvodskyanum	species	10000000	" "	Worms	0	0	0	1000	0	0	0
Caridina indistincta A.	species	96237	"Indistinct river shrimp"	Crustaceans	2496	146	22	0	0	0	0
Ficus elastica	species	182112	"India rubber fig"	Plants	0	0	0	1784	362	0	0
Gallinula tenebrosa	species	471249	"Dusky moorhen"	Birds	91	0	0	2001	0	0	0
Cricotopus albitarsis	species	1404319	" "	Insects	0	0	0	666	1262	0	162
Litoria wilcoxii or lesueurii	species	10000300	"Stony creek or rocky river"	Amphibians	0	0	0	1656	0	0	0
Eukerria saltensis	species	169929	"Worm"	Worms	0	0	1627	0	0	138	0
Litoria lesueurii	species	95134	"LeSueur's treefrog"	Amphibians	0	0	0	1602	0	0	0
Paspalum notatum	species	147272	"Bahia grass"	Plants	0	0	1287	307	0	0	0
Macrobrachium australiense	species	159738	"Freshwater prawn"	Crustaceans	28	325	973	110	95	0	0
Cenchrus purpureus	species	154765	"Elephant grass"	Plants	0	0	0	0	1479	0	671
Chaetogaster sp. 10 JM 2023	species	3021530	"Worm"	Worms	34	20	236	602	585	3703	5818
Craterocephalus stercusmuscaru	species	69135	"Fly-specked hardyhead"	Fish	1275	194	0	0	0	0	0
Acacia melanoxylon	species	138028	"Australian blackwood"	Plants	67	0	0	1360	0	0	0
Acrispumella msimbaziensis	species	1545455	"Alga"	Heterokont a	0	0	0	1312	0	4223	484
Canis lupus familiaris	subspecies	9615	"Dog"	Mammals	145	0	0	1054	0	94478	45
Paraphysomonas sp.	species	1955561	"Golden-brown alga"	Heterokont a	0	1009	0	7	61	0	12
Ruellia simplex	species	1176413	" "	Plants	0	0	0	614	440	0	2181
Physella acuta	species	109671	"Left handed sinistral snail"	Molluscs	0	0	584	279	40	7973	3198
Procladius sp. SAM1.2	species	2791451	" "	Insects	0	0	849	0	0	0	0
Compsopogon caeruleus	species	31354	"Freshwater red alga"	Red algae	0	67	0	537	224	321	0
Naegleria sp.	species	37103	" "	Other	0	0	0	781	43	154	5807
Dolichandra unguis-cati	species	73871	"Cat's claw creeper"	Plants	0	0	715	105	0	0	0
Sphaerium tasmanicum	species	127869	" "	Molluscs	0	0	170	464	107	0	329
Triplectides parvus	species	1876166	"Caddisfly"	Insects	0	0	725	5	0	0	0
Ficus macrophylla	species	182117	"Moreton Bay fig"	Plants	0	0	0	654	0	0	1123
Colocasia esculenta	species	10000000	" "	Plants	0	0	0	1000	0	0	0

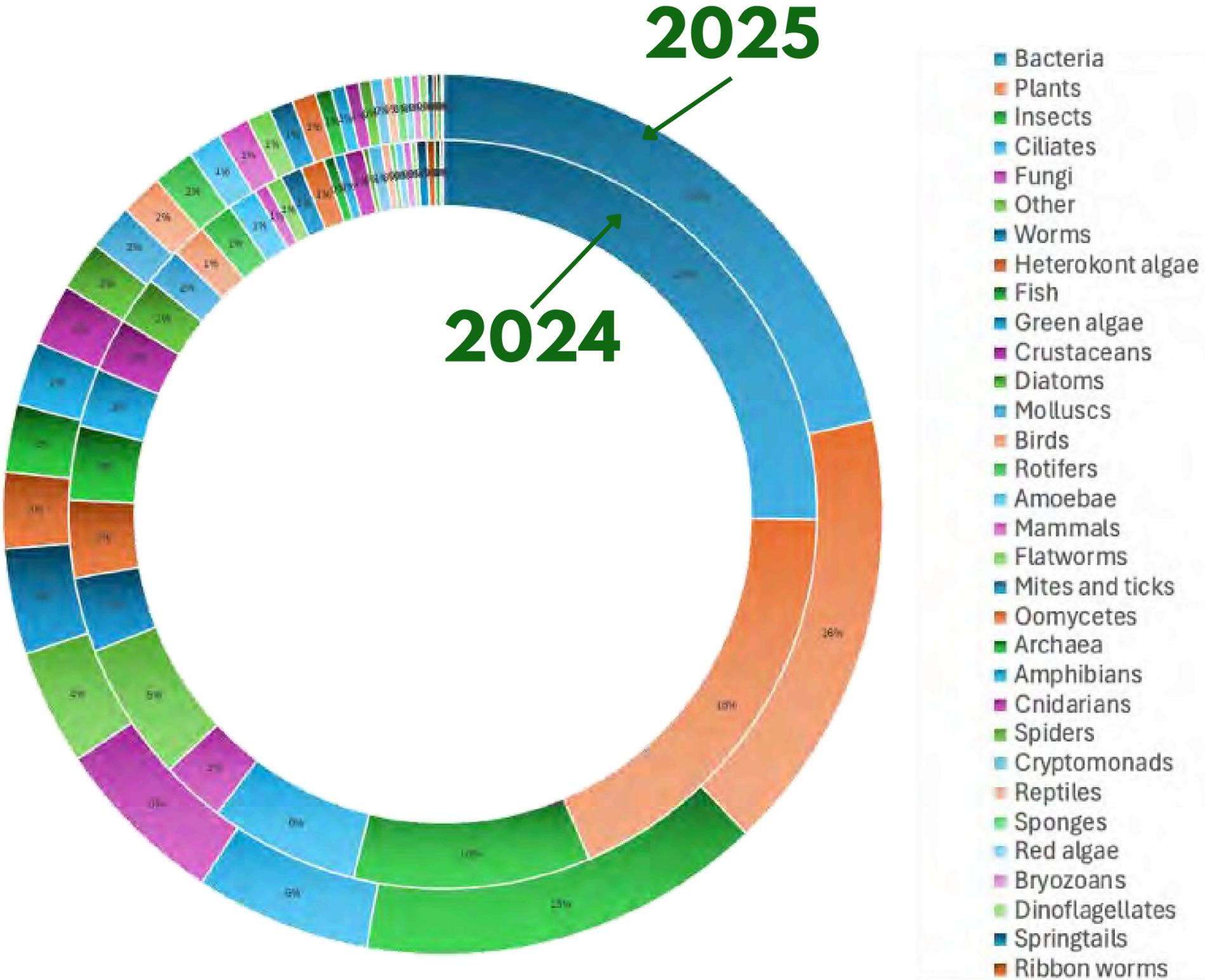
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Count of taxa

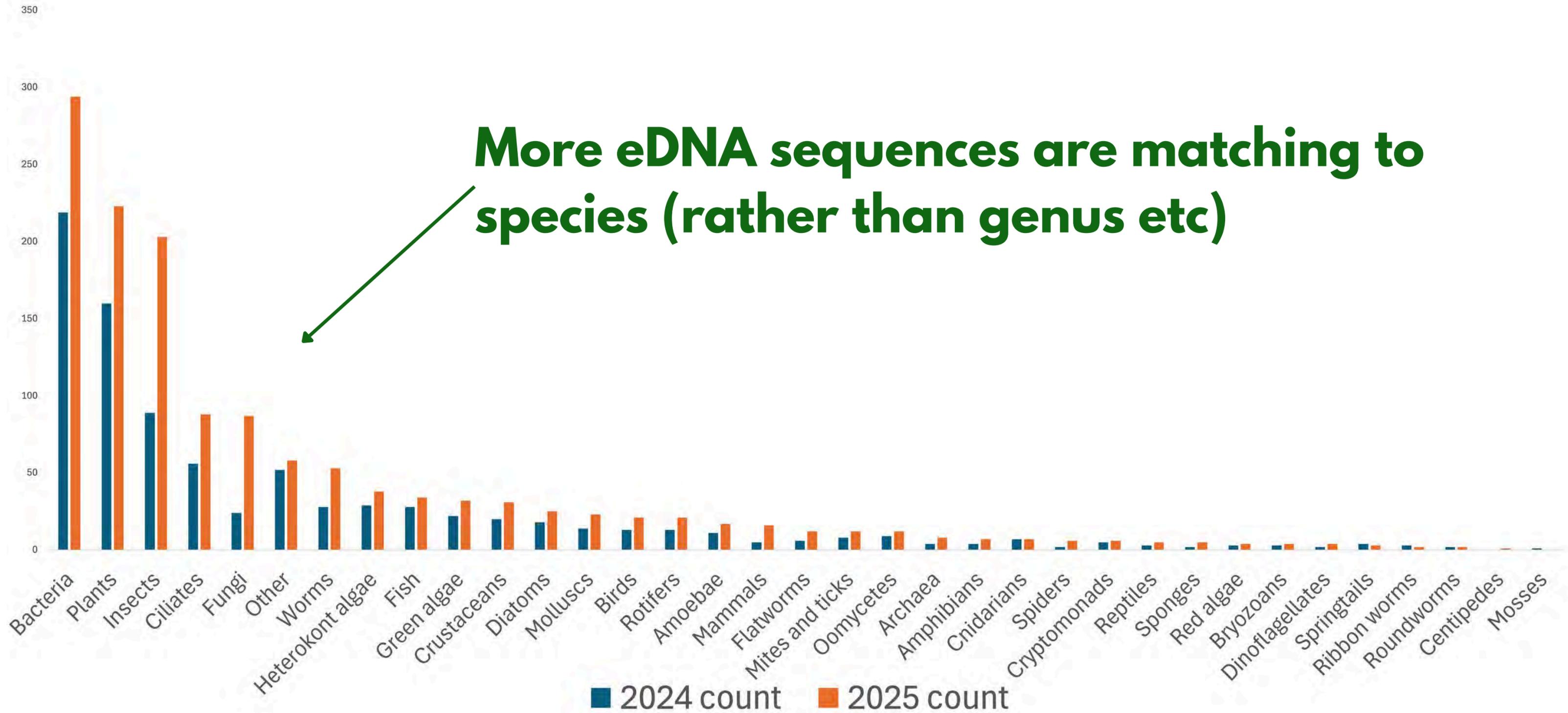
1356 taxa in total detected

495 increase from 2024!

(At genus or species level)



Count of taxa



Invertebrates

313 taxa

(increase of 130 from 2024)

(c) sdoug7405 (CC BY-NC)

(c) Brian Gratwicke (CC BY)

(c) Misha Zitser (CC BY-NC)

(c) domindo (CC BY-NC)

(c) H.T.Cheng (CC BY-NC)

Insects

Worms

Crustaceans

Molluscs

Mites and ticks

Cnidarians

Flatworms

Springtails

Ribbon worms

Roundworms

Spiders

Platypus food!



Freshwater prawns & shrimp
(*Macrobrachium* sp., *Caridina*
sp., *Paratya* sp.)



Australian Emerald
(*Hemicordulia australiae*)



Crayfish & Yabbies
(*Cherax* sp.)



Mayflies and Caddisflies
(*Atalophiebia* sp., *Chimarra*
sp., *Cloeon* sp., *Ecnomus*
sp., *Hellyethira* sp.)

Introduced & invasives pests



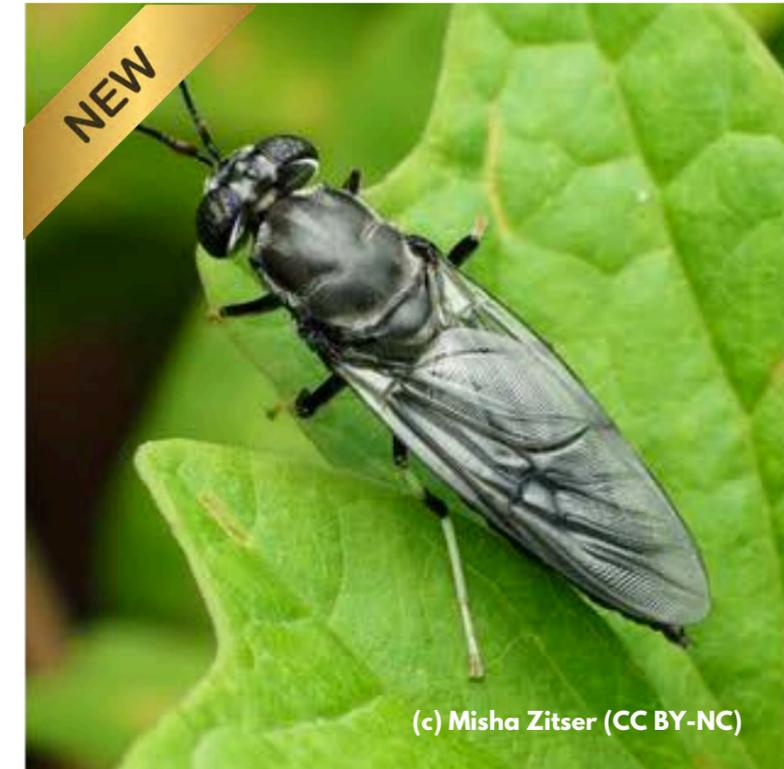
(c) Karthik (CC BY-NC)



(c) Kim Cabrera (CC BY-NC-ND)



(c) Misha Zitser (CC BY-NC)



(c) Misha Zitser (CC BY-NC)

Yellow crazy ants
(Anoplolepis gracilipes)
Detected at Walton Bridge

Acute bladder snail
(Physella acuta)

Mimic lymnaea
(Pseudosuccinea columella)

Black soldier fly
(Hermetia illucens)

Strange detection...



Chinese mitten crab?
(*Eriocheir*)

Detected at Fish Creek only

Globally an invasive species, but not currently known to be in Australia...

Fish

21 species (increase of 2 from 2024), 17 natives, 3 pests

Native species example



Australian Longfin & shorten eel
(Anguilla reinhardtii & Anguilla australis)



Striped, Carp, Purple-spotted, Empire & Firetailed Gudgeon



Crimsonspotted Rainbowfish & Eal tailed catfish
(Melanotaenia duboulayi & Tandanus tandanus)



Australian Bass, Hardy Head Bullrout and Mullet
(Percalates sp., Craterocephalus sp., Nothestes sp., & Mugil cephalus)

Lungfish!



Lungfish
(Neoceratodus forsteri)
Detected at Yoorala



Pest fish

Species example



Mosquito fish
(*Gambusia holbrooki*)



Green swordtail
(*Xiphophorus hellerii*)



Tilapia
(*Oreochromis mossambicus*)
Detected at Yoorala only

Reptiles

4 species, increase of 2 from 2024



Rainbow skink
(Lampropholis delicata)
Detected at Walton, Taylor,
Wittonga and Fish Creek



Long-necked turtle
(Chelodina sp.)
Detected at Riaweena



**Eastern Saw-shelled
Turtle**
(Myuchelys latisternum)
Riaweena St



**Eastern Short-necked
Turtle**
(Emydura sp.)
Walton Bridge

Amphibians

6 species (increase of 2 from 2024), 5 natives, 1 pest

Native species example



Eastern Stony Creek Frog
(*Litoria wilcoxii*)



Tusked Frog
(*Adelotus brevis*)



Striped Marsh Frog
(*Limnodynastes peronii*)
Detected at Yoorala,
Riaweena, Walton, Wittonga



Dainty Green Tree Frog
(*Ranoidea gracilentata*)
Detected at Yoorala

Pest toads...



Cane Toad
(*Rhinella marina*)
Everywhere!!!

Birds

18 species (increase of 7 from 2024)

Native species example



Dusky moorhen
(*Gallinula tenebrosa*)



Little pied cormorant
(*Microcarbo melanoleucos*)



Miners
(*Manorina melanocephala*)



Swamp & Bush hens
(*Amaurornis sp.* &
Porphyrio sp.)

Birds



Owls and Frogmouths
(Ninox sp. & Podargus strigoides)
Detected at Walton Bridge and Fish Creek

Parrots
(Cacatua & Trichoglossus moluccanus)
Detected at Walton bridge

Brush turkey
(Alectura lathamī)
Detected at Taylor Range and Fish Creek

Magpie-lark
(Grallina cyanoleuca)
Detected at Yoorala

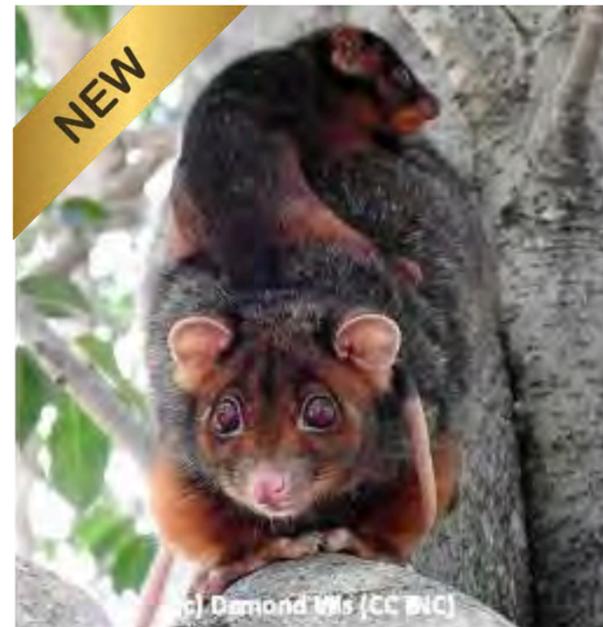
Mammals

12 species (increase of 8 from 2024)

Native species example



Rakali
(Hydromys chrysogaster)
Detected at Yoorala and
Wattle Creek



Ringtail possum
(Pseudocheirus sp.)
Detected at Wattle Creek



**Short-eared brush-tailed
possum**
(Trichosurus caninus)
Everywhere except Dam
and Wattle Creek



**Common brush-tailed
possum**
(Trichosurus vulpecula)

Mammals

Native species example



Black flying fox
(Pteropus alecto)
Detected at Walton Bridge



Spectacled flying fox
(Pteropus conspicillatus)
Detected at Yoorala

< ENDANGERED >
EN



Grey-headed flying fox
(Pteropus poliocephalus)

< ENDANGERED >
EN



Large footed bat
(Myotis adversus)
Detected at Riaweena

Introduced Mammals



Dogs
(*Canis lupus familiaris*)



Cats
(*Felis sp.*)
Detected at Fish Creek



Cows
(*Bos taurus*)
Detected at Riaweena



Black rats
(*Rattus rattus*)
**Detected at Yoorala &
Fish Creek**

What wasn't found?



Platypus
(*Ornithorhynchus anatinus*)

< NEAR THREATENED >
NT



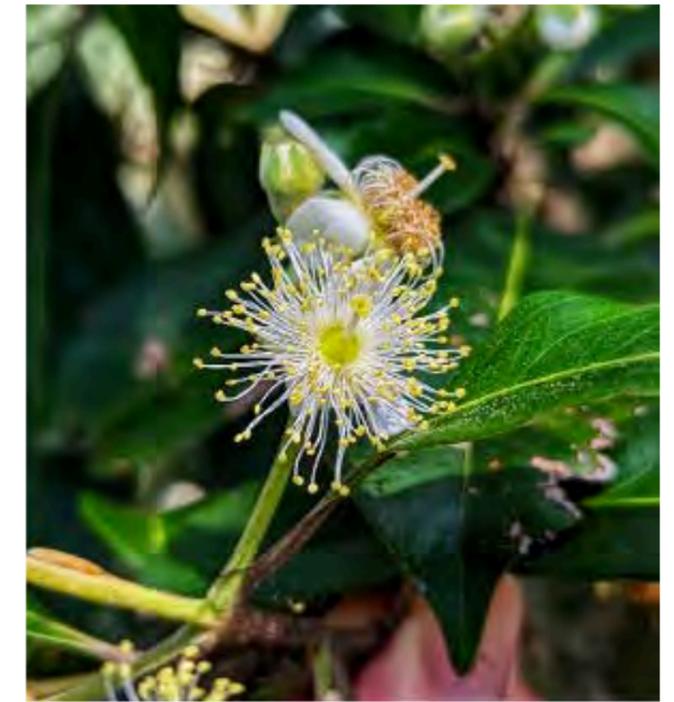
Smooth-shelled macadamia
(*Macadamia integrifolia*)

< VULNERABLE >
VU



Scrub Turpentine
(*Rhodamnia rubescens*)

< CRITICALLY ENDANGERED >
CR



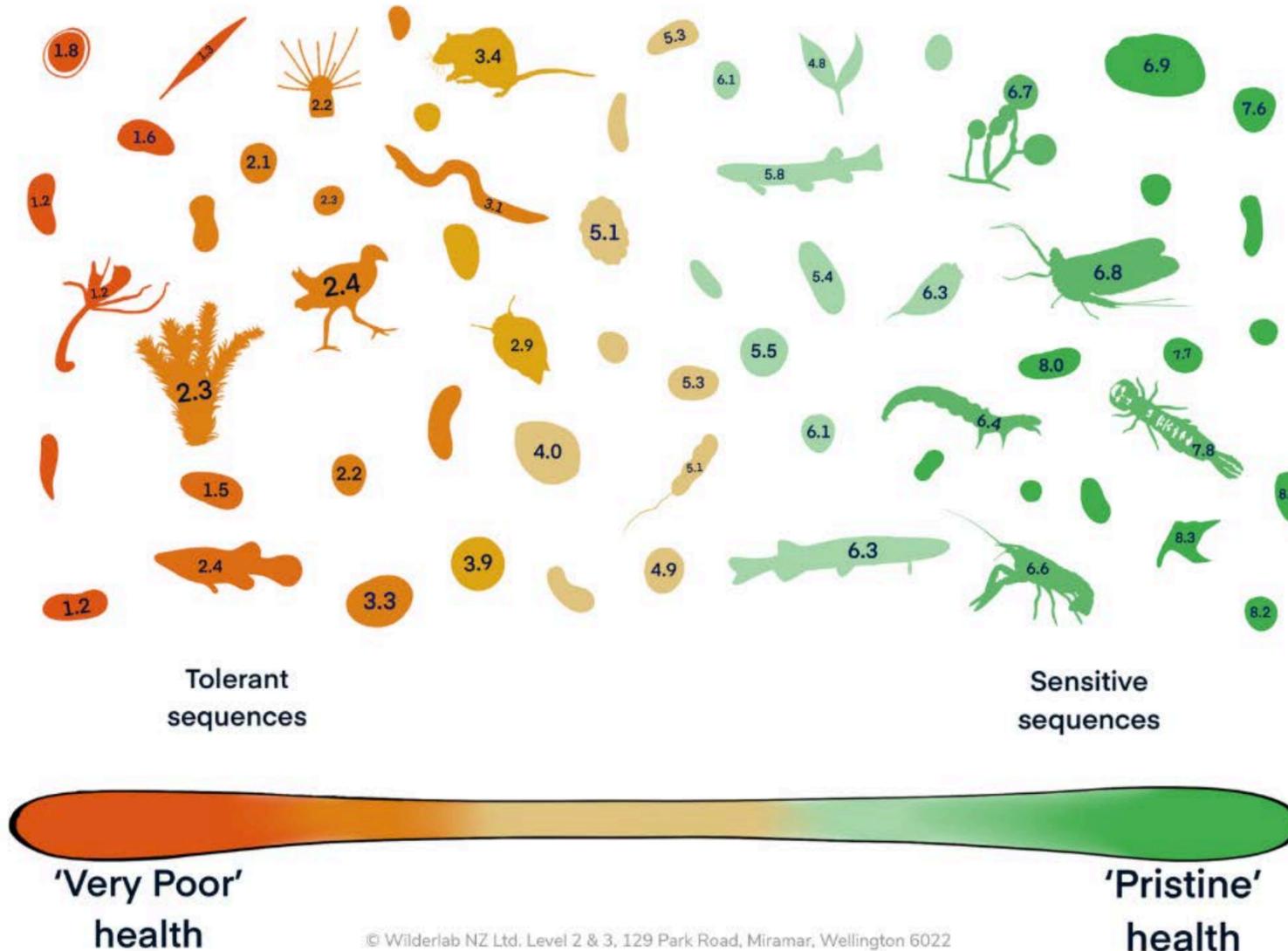
Native guava
(*Rhodomyrtus psidioides*)

< CRITICALLY ENDANGERED >
CR

Are our creeks healthy?

Wilderlab taxon-independent community index

Made for NZ riverine samples, under test for AU

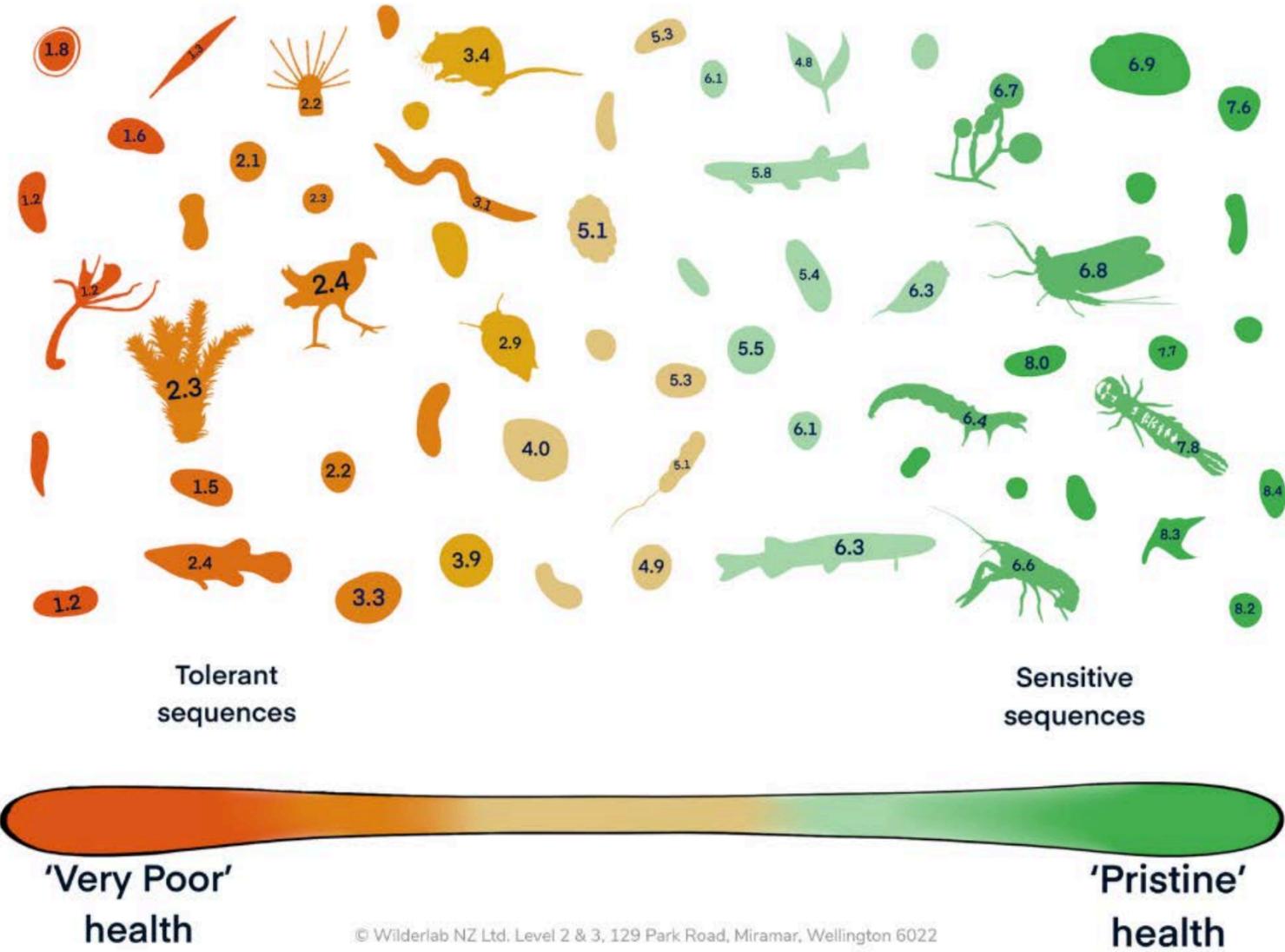


All sites with a score <90 indicating poor health (not calculated for Wattle Creek)



Macro-invertebrates surveys

8 surveys at Fursman Crossing from January - September 2025



Our 2025 Macro-Invertebrates Survey Team!



Mark Monika Alan



Graeme



Ed



Daniel Andrew



Sue

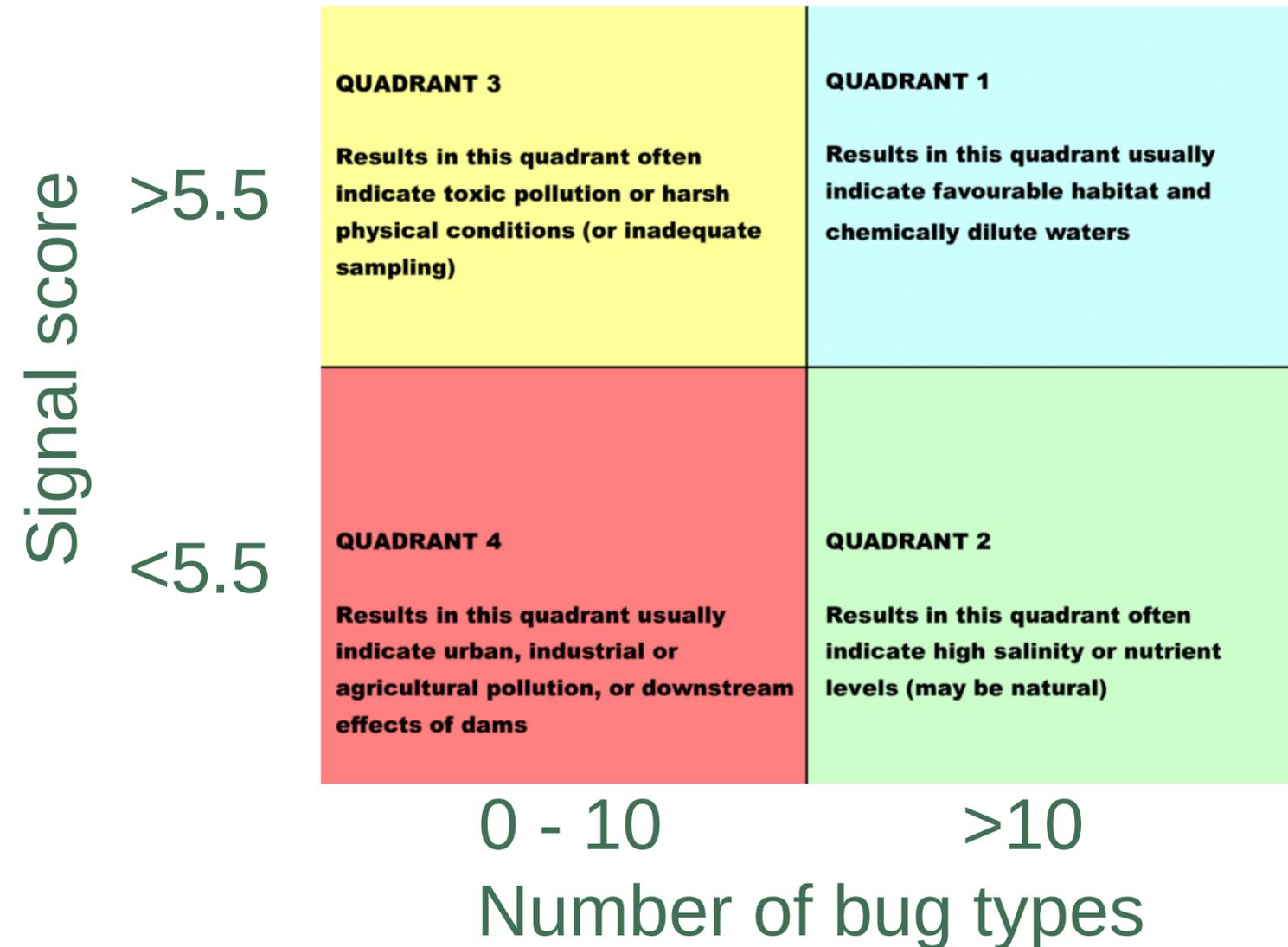


Fanny

Macro-Invertebrates Surveys - SIGNAL 2 Score

8 surveys at Fursman Crossing from January - September 2025

Identification to Order level



Most surveys in quadrant 4 suggests some form of pollution

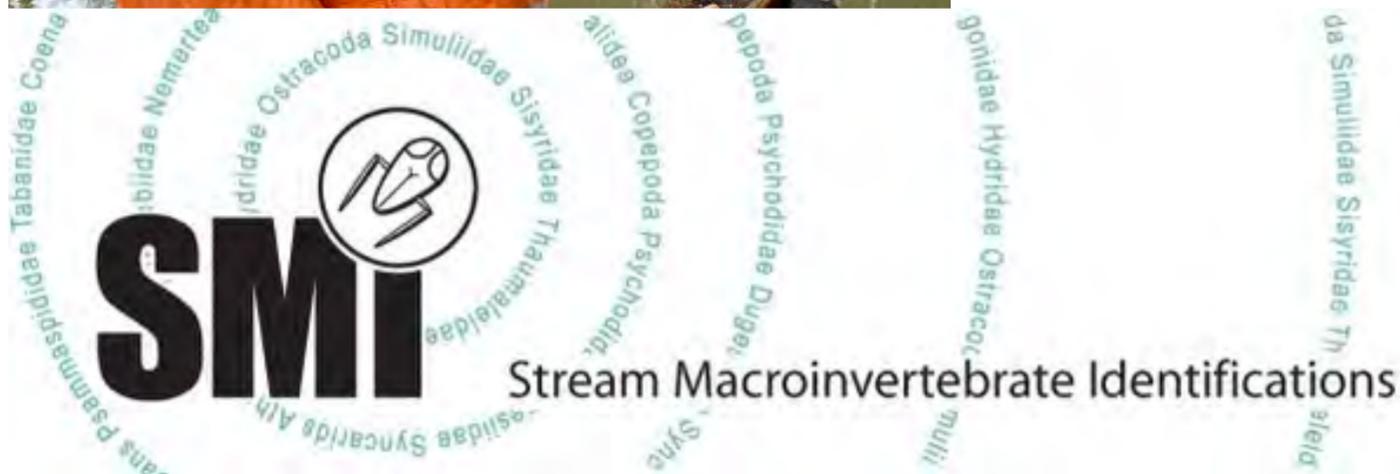
In Depth Macro-Invertebrates Survey

Survey conducted at Fursman Crossing by Sue Jones in December 2025 using the AUSRIVAS methodology
Identification to Family level.



Outcomes:

- High proportion to tolerant taxa
- Low SIGNAL score: below 4
- Good habitat availability
- Water quality issues



Pesticide Analysis

3 samples in October 2025 during the eDNA sampling



Pesticide Analysis



Preliminary results

- Fipronil detected at all 3 sites!
- Levels at Riaweena and Taylor Range greater than the ANZG Freshwater Guideline values, and are greater than the levels found in all the other samples run in the same batch
- Fipronil is an insecticide used to treat termites and fire ants and readily available in the commerce.



Highly toxic for aquatic invertebrates.

Pesticide Analysis

7 samples in June 2025



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



Pesticide Analysis



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Preliminary results

- Metsulfuron-methyl detected at 6 sites (not Yoorala)!
- Levels greater than the ANZG Freshwater Guideline values at several sites.
- Metsulfuron-methyl is a herbicide used as a selective pre- and post-emergence weed killer for broadleaf weeds and woody brush in crops, pastures, and industrial areas.



highly toxic to aquatic macrophytes and can suppress aquatic plant growth at very low levels

Where to next?



- Continue data collection
 - Quarterly creek surveys
 - Yearly eDNA analysis if funding permits
 - Pesticide analysis
- Compare to neighbouring creeks with platypus populations
- Aquatic revegetation project (*Vallisneria*) (volunteers needed)
- Monthly water quality monitoring (volunteers needed)
- Platypus habitat assessment
- Community involvement



Adopt a platypus!



- **Toys made by volunteers**
 - Fortnightly sewing bees
Fridays 12.30-2pm
- **Toys for sale at Walkabout Creek Discovery Centre**
- **New volunteers needed**



Thank you!

eDNA results publicly available online at:
<https://www.wilderlab.co.nz/explore>

Funding support

- 2025 eDNA analysis: Brisbane City Council Environment Grant
- 2025 eDNA analysis (Wattle Creek): SOWN as part of Wattle Creek Project
- Material for macroinvertebrate surveys: Gambling Community Benefit Fund

In-kind support

- Platypus group volunteers
- Pesticide analysis: Brady Hamilton from Pesticide Watch, and UQ
- In depth macroinvertebrate survey: Sue Jones from SMI Ecological Services