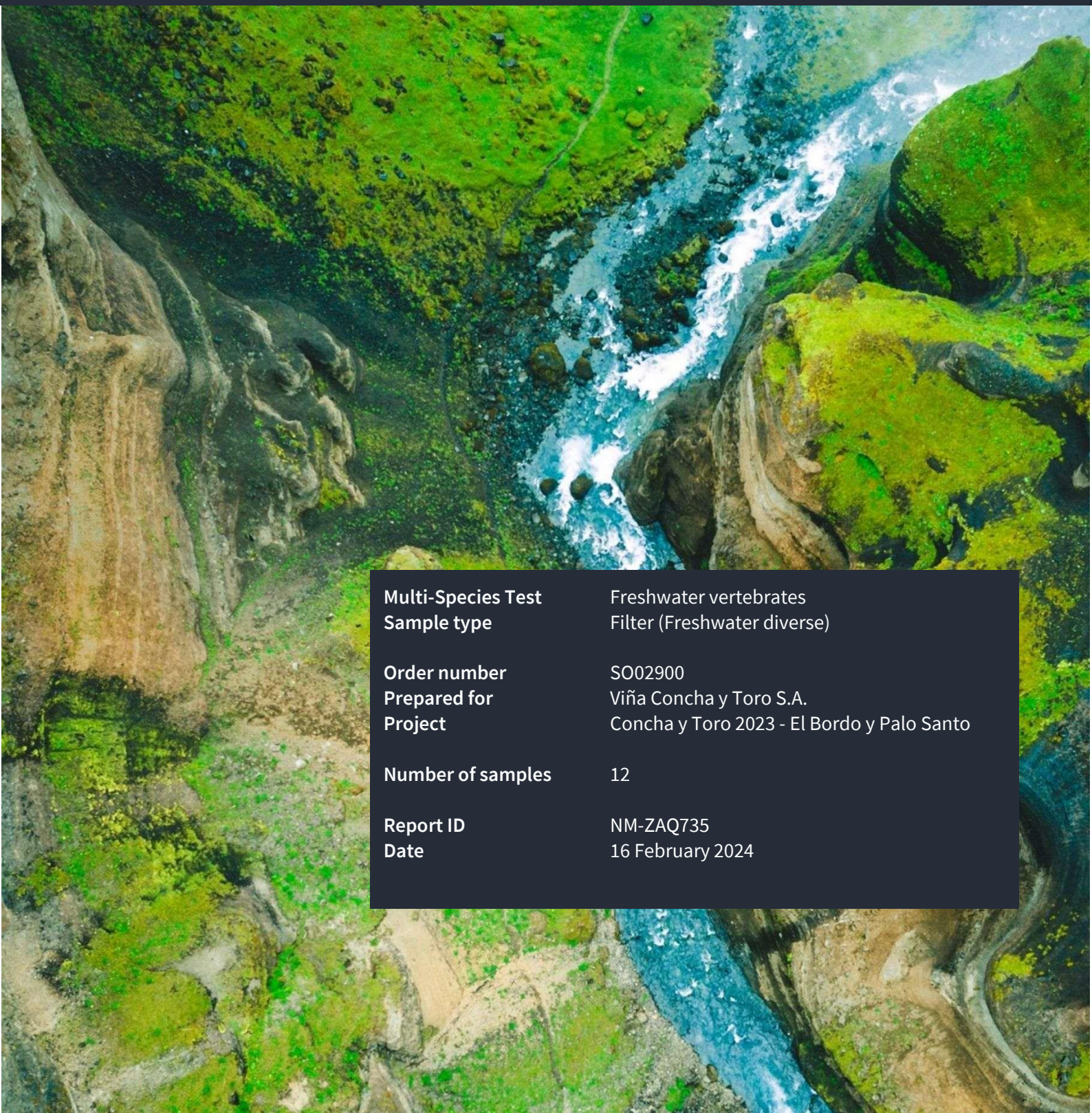
NATURE METRICS
DNA-BASED MONITORING

Environmental DNA Report
Freshwater vertebrates



Multi-Species Test	Freshwater vertebrates
Sample type	Filter (Freshwater diverse)
Order number	SO02900
Prepared for	Viña Concha y Toro S.A.
Project	Concha y Toro 2023 - El Bordo y Palo Santo
Number of samples	12
Report ID	NM-ZAQ735
Date	16 February 2024

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Welcome to your report

Your report consists of:

This document: Providing you with our world class insights and metrics.

Data Tables: Accompanying spreadsheet with results at the individual sample level: species detected, metrics and quality control: NM-ZAQ735.SO02900.Vertebrates.Results.xlsx

- Data Description
- Species Data Table: Percentages
- Species Data Table: Read Counts
- Metrics by Sample Table
- Quality Control Table

If you have purchased metrics and they are not featured in this document, please see the 'Metrics by Sample Table' tab of the Data Tables spreadsheet.

OTU: Throughout the report you'll see reference to 'OTU'. This stands for Operational Taxonomic Unit; an OTU is broadly equivalent to a species in most cases.

Executive Summary

Field Samples submitted:	12
Field Samples reported:	12
Field Blanks submitted:	0
Species Richness:	35
Average Species Richness per sample:	10
Total number of IUCN Red List Species:	0
Total number of Invasive Species:	7

Reported samples are those that passed Quality Control and are included in the Species Data Table

Please be careful when sharing this report, it contains biodiversity information that may be sensitive, particularly with respect to endangered or protected species. Please share responsibly. If the report is shared, we kindly ask that the report is shared in its entirety - to limit the possibility of any information being taken out of context.

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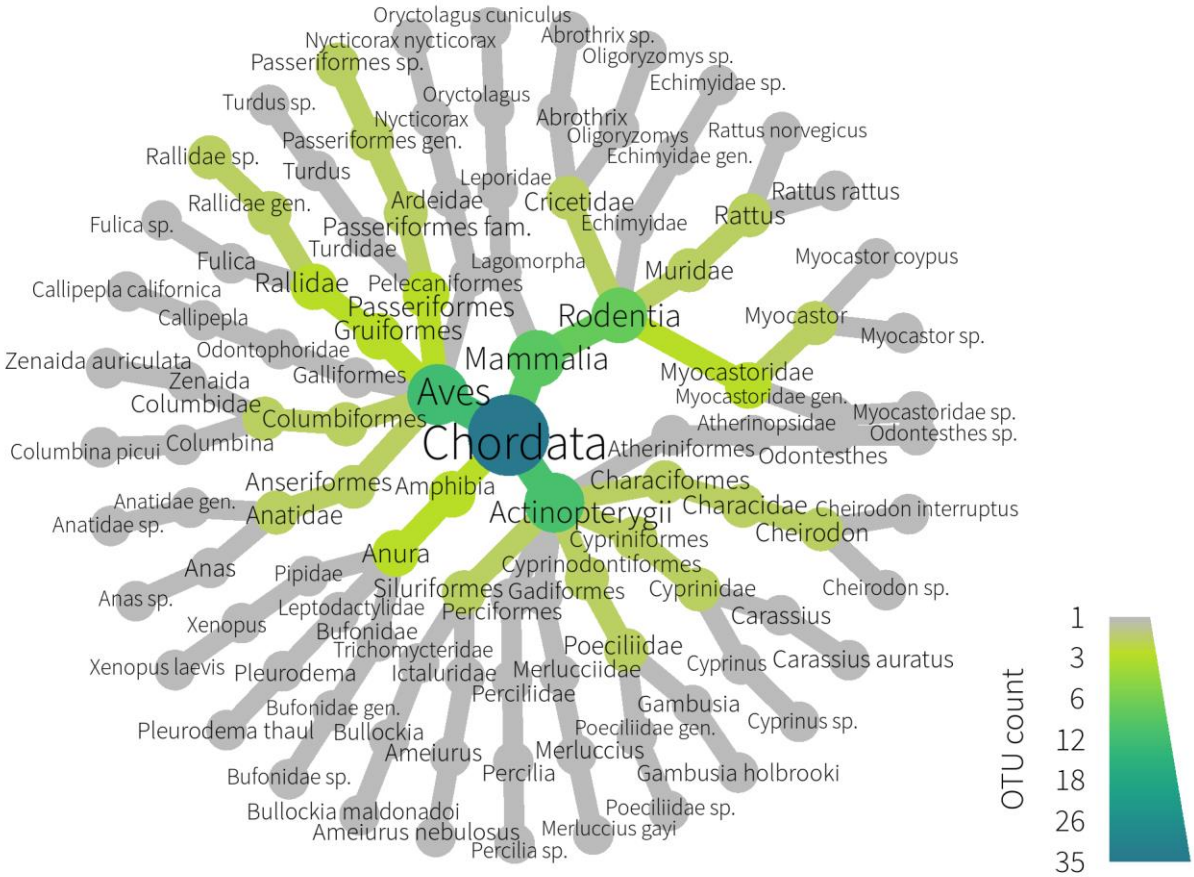
Something exciting or unexpected that you'd like to discuss further, our team of experts are looking forward to speaking with you: www.naturemetrics.com/contact

REPORT

Taxonomic Composition

This chart provides a view of the species detected in your samples and their taxonomic relationship, (names on the same branch are more similar than those on different branches). The chart is structured with the highest taxonomic rank at the centre (e.g., kingdom, phylum, class), moving through the ranks of order, family, genus, species as you move to the outer edge. Note that the centre and outer ranks will change depending on the test applied and the number of species detected. The legend in the bottom right of the chart indicates how to relate the colour in the branches to the number of species. The colour scale goes from grey - indicating very few species, to blue - indicating a lot of species.



Taxonomic Resolution

This table provides the number of OTUs detected and the percentage of OTUs identified to each taxonomic level.

> Depending on completeness of reference databases for the region where you sampled, some OTUs may not match to a reference at species level. Global DNA reference databases contain millions of barcodes, but gaps remain, particularly in regions and taxonomic groups that are more diverse and less studied. Coverage is expected to improve over time and data tables can be updated to include new information at a future date.

Number of OTUs	Phylum	Class	Order	Family	Genus	Species
35	100%	100%	100%	94.29%	74.29%	45.71%

Want to increase the number of species named to species level? If you have specimens of species you have identified, we can sequence the DNA and add the species to our reference databases. We will then be able to enhance the reference library and report if the species is detected. Please contact us about this service and we can send you our barcoding kits, but note that we only offer these kits for fish and amphibians.

IUCN Red List Species

These are the IUCN (International Union for Conservation of Nature) Red List species detected in your samples. These are detected species that are designated as one of the IUCN Red List Threatened Categories (Vulnerable, Endangered and Critically Endangered). An increase in the number of threatened species is generally associated with a positive trend in biodiversity or habitat condition.

No species designated Vulnerable, Endangered or Critically Endangered were detected in the samples.

Invasive Species

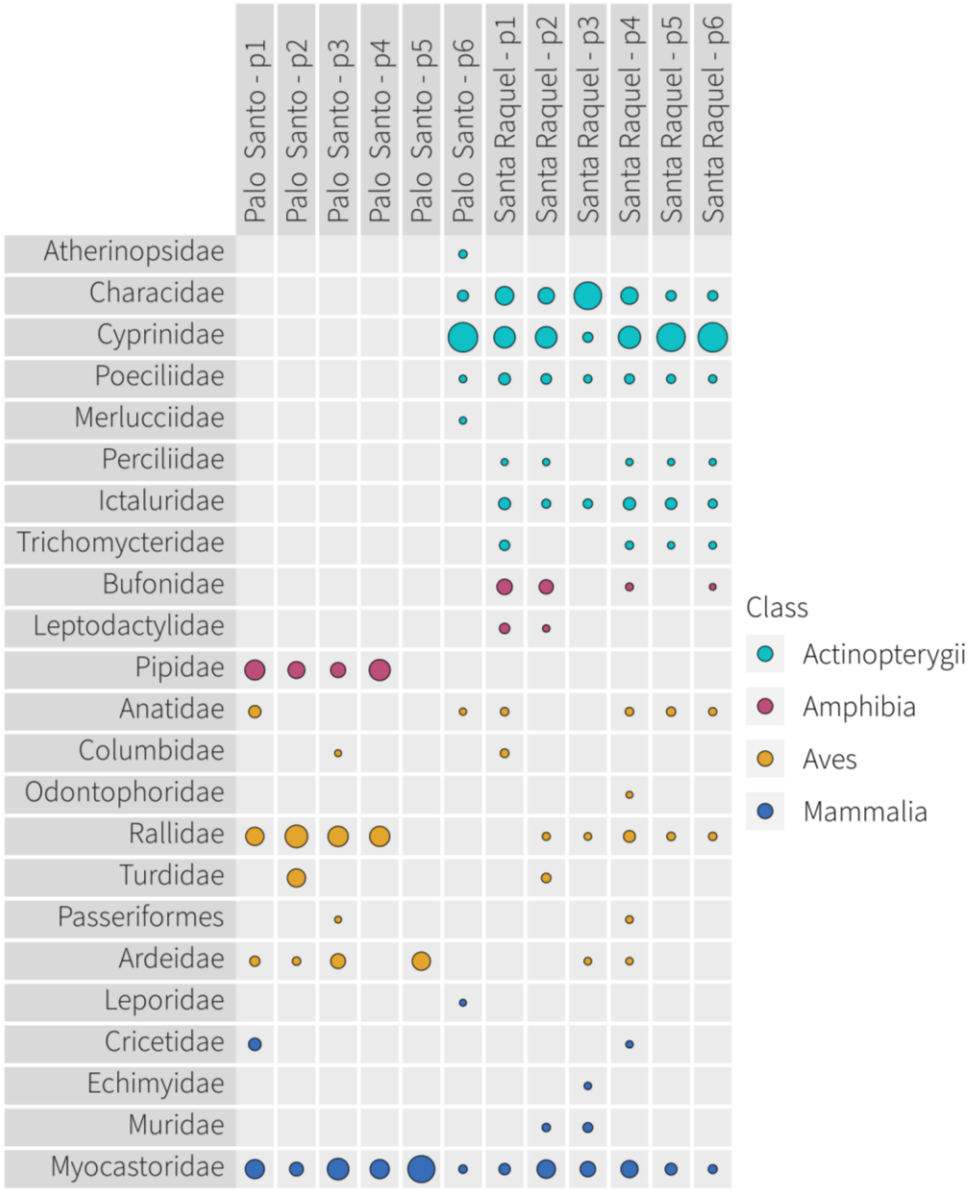
These are the Invasive species detected in your samples. These species are invasive according to the Global Register of Introduced and Invasive Species (GRIIS) in the country where sampling occurred. GRIIS is an IUCN Invasive Species Specialist Group initiative. The Convention on Biological Diversity defines an invasive species as one whose introduction and/or spread threatens biological diversity. An increase in the number of invasive species is generally associated with enhanced pressures at your site and reduced resilience of the native community. Please note: this label is only available for animals; and GRIIS lists marine species as invasive for a country, even if the species is known to be invasive in only one marine area bordering the country.

Species	Common name
Carassius auratus	Goldfish
Gambusia holbrooki	Eastern Mosquitofish
Ameiurus nebulosus	Brown Bullhead
Xenopus laevis	African Clawed Frog
Oryctolagus cuniculus	European Rabbit
Rattus norvegicus	Brown Rat
Rattus rattus	Black Rat
Number of species	8

Community Composition

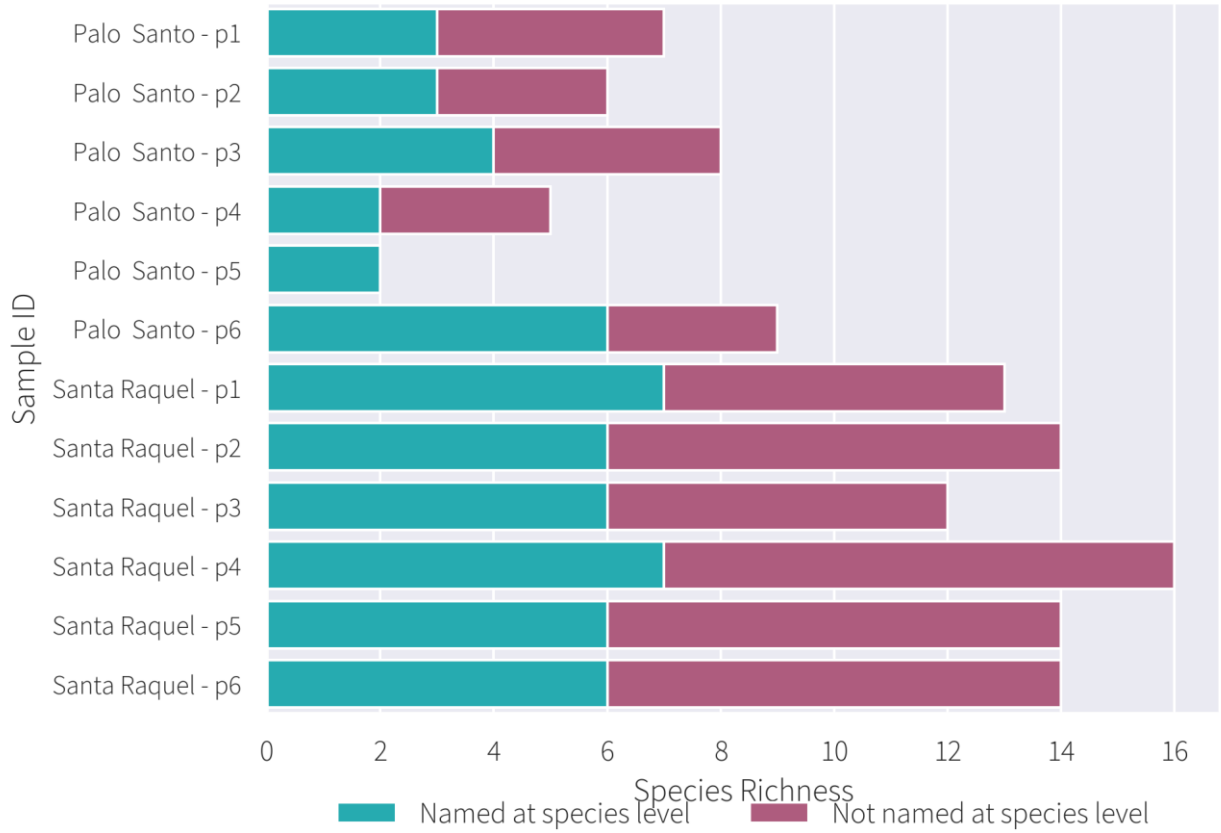
This chart lists the species found in each sample. The presence of a bubble means a species was detected in that sample. The chart displays at species level, unless the number of species detected is too great to display clearly in the document. In these cases, the chart displays at a higher taxonomic level. The full species level chart is provided as an appendix.

The size of the bubbles represents the proportion of DNA sequences within a sample. A larger bubble size can indicate a stronger eDNA signal. This signal may be linked to abundance of species in the environment but should be interpreted only as a coarse measure because the signal is also impacted by biological (e.g., biomass, life stage, activity, body condition), environmental (e.g., temperature, pH, salinity, conductivity), and technical factors (e.g., primer bias, PCR stochasticity).



Species Richness

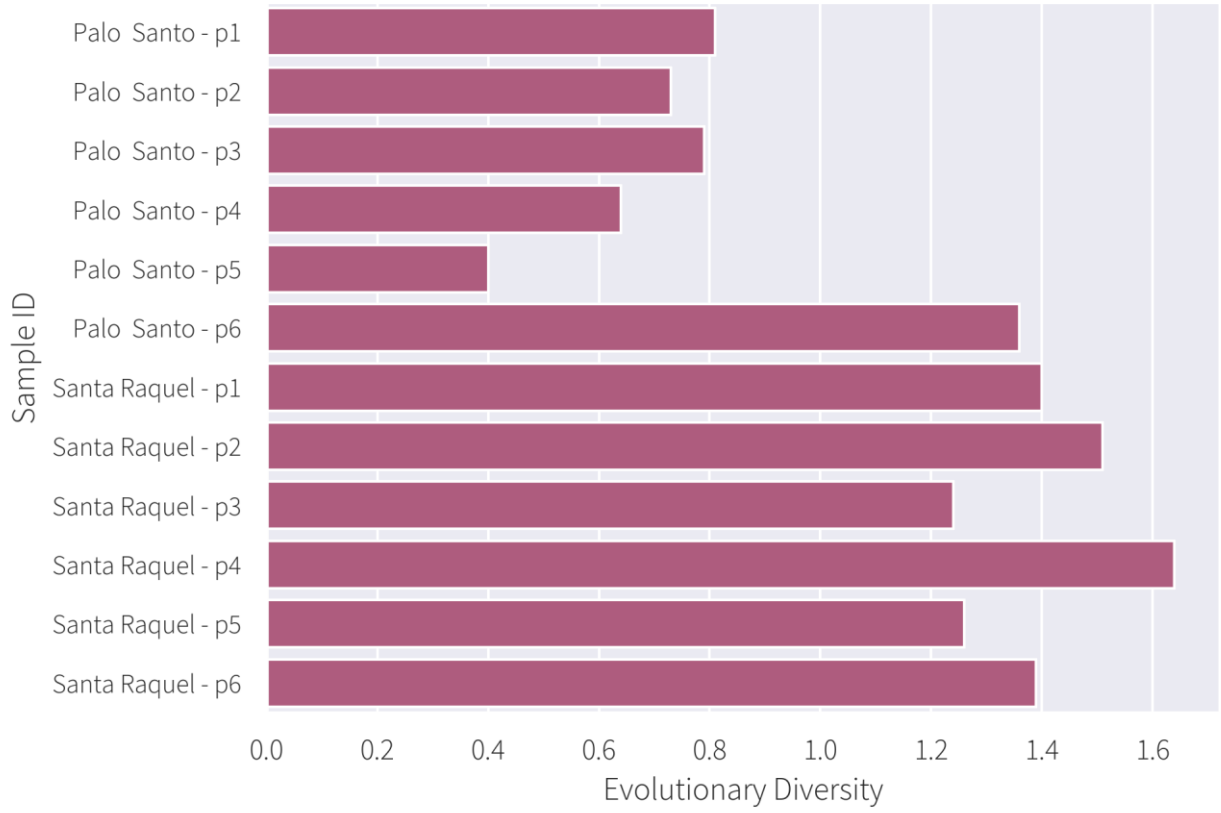
This is the total count of OTUs detected in each sample. The blue portion of each bar indicates the number of OTUs identified to a species.



High Species Richness generally indicates a healthier and functioning ecosystem and is the simplest biodiversity metric that is consistently reported in biodiversity monitoring.

Evolutionary Diversity

Evolutionary Diversity calculated for each sample. This is a measure of the variety of species types that occurred in your samples.



Evolutionary Diversity is a strong complementary indicator of biodiversity progress alongside Species Richness. Increasing Evolutionary Diversity can indicate an increasing resilience of the community.

Looking for something more?

We also offer comparative reporting. This includes statistical comparison of metrics and communities according to categories that you define. For instance, these might include waterbody, Site, Management Regime, or anything else that is a focus of your project. Please contact us for further details.

END OF REPORT

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