



NATURE'S NETWORK WETLAND ADDITION

Wetlands in Rocky View County and Foothills County were monitored in 2023 and 2024 for amphibians with the goal of gaining a better understanding of amphibian presence in the region and to identify areas important for wetland connectivity.

Methodology

Environmental DNA, or **eDNA**, is DNA that is shed by organisms into their environment. We collected water samples from wetlands, and sent the samples to a lab to determine which amphibian species eDNA was present in the water samples.

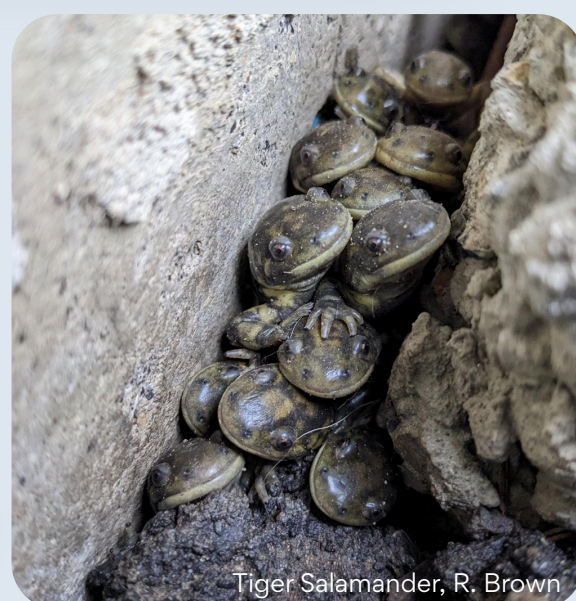
Acoustic Recording Units (ARUs) record wildlife sounds, and were set up at a select number of sites. Recordings were reviewed for amphibian calls.



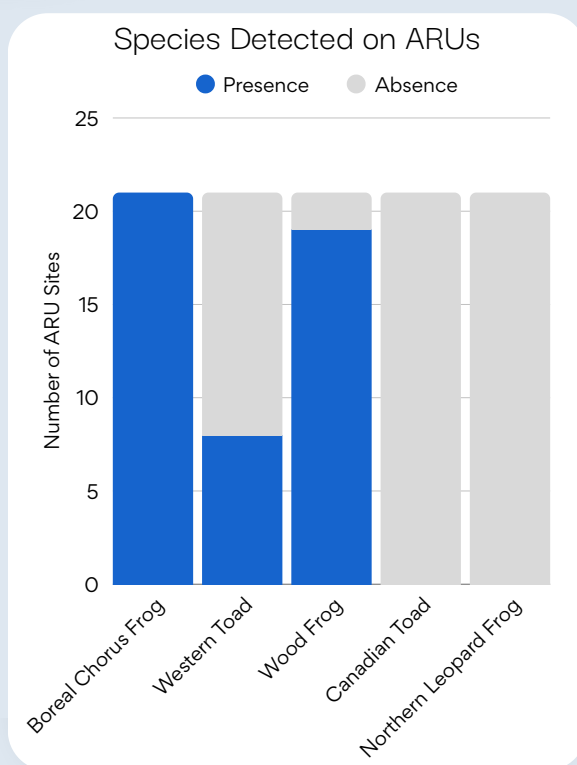
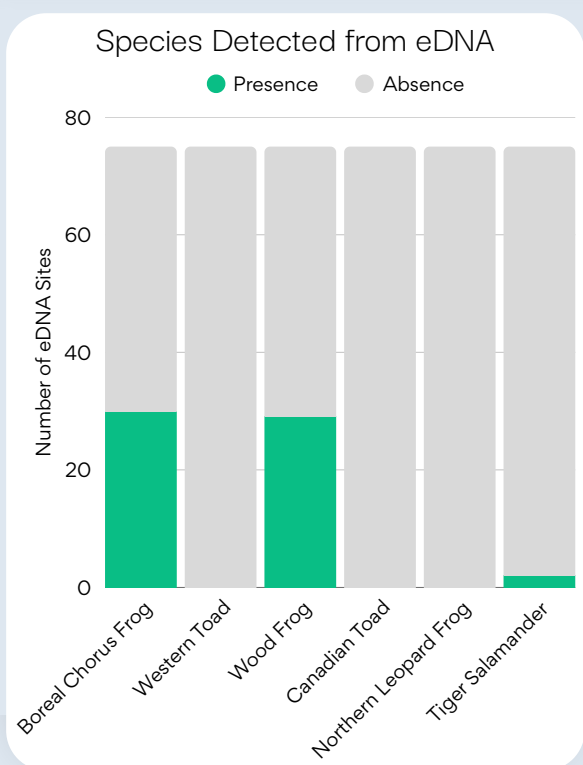
Results

We **detected eDNA of boreal chorus frog, wood frog and tiger salamander**. The **ARUs detected calls of boreal chorus frog, western toad and wood frog** (note tiger salamander do not call).

We used this information to identify core wetland areas throughout the region based on predicted probability of species occupancy and important probable movement pathways indicating likely wetland connectivity through connectivity modelling. See page two for the resulting map.



Tiger Salamander, R. Brown



Boreal chorus frog, N. Kahal

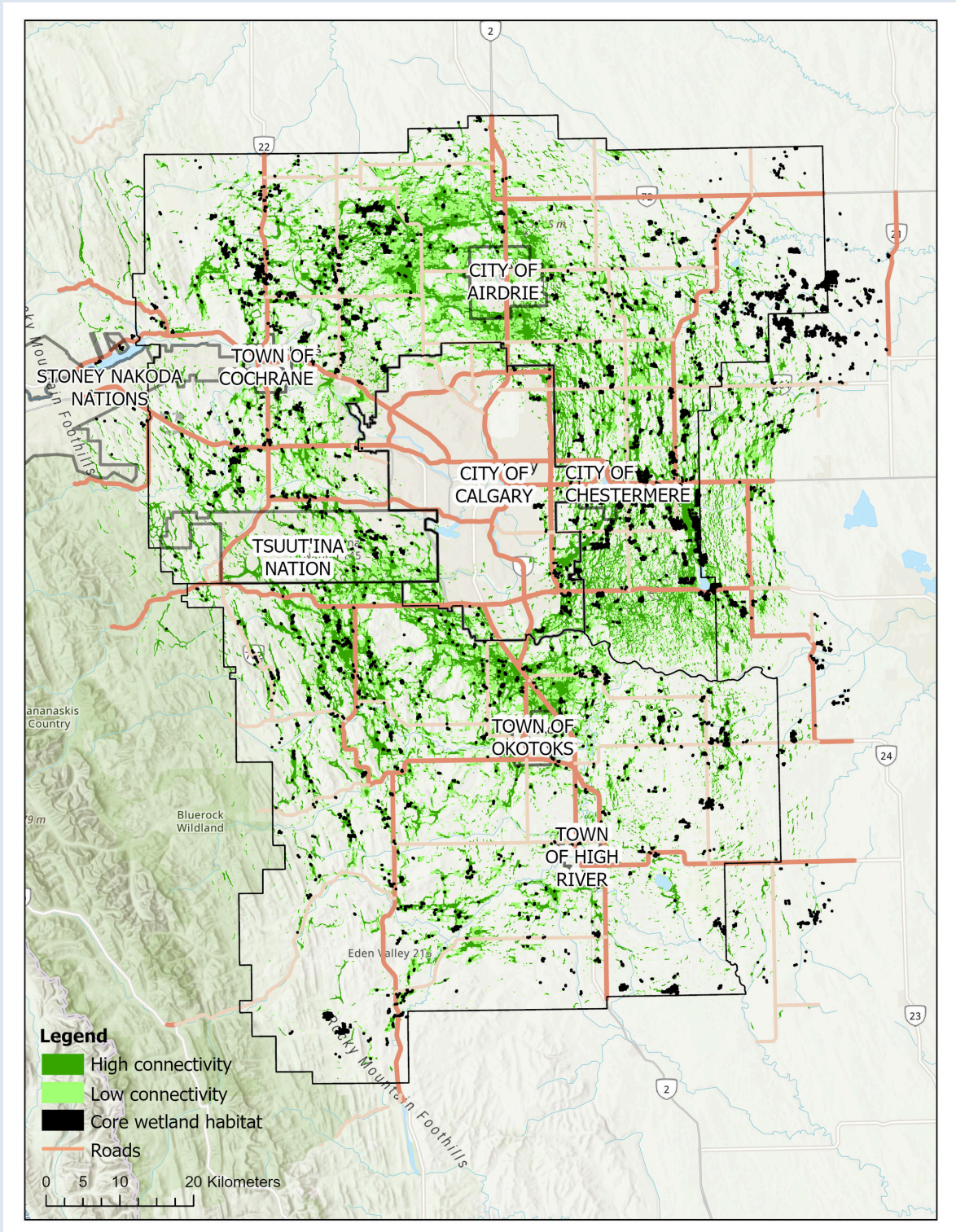
Notes

- Some landowners let us know which amphibian species they have seen on their property. We added these observations to our records.
- Non-detection of a species does not mean absence of the species from the site. There are limitations with both methods used.
- We believe there was an under-representation of tiger salamander and western toad in our eDNA results. This could be because the primer (DNA sequence) used to detect from samples were not specific to the species population in our region.

THANK YOU TO THE LANDOWNERS AND LAND TRUSTS THAT ALLOWED US TO MONITOR FOR AMPHIBIANS ON THEIR PROPERTY!



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Next Steps

- Complete a technical report outlining amphibian sampling methods and connectivity modelling methods.
- Refine a map of wetland connectivity for amphibian movement for the greater Calgary region. This will complement an ecological connectivity map for terrestrial mammal movement we have delineated for the region.
- Determine strategies to protect the ecological network, with the goal of maintaining ecological connectivity for the health of wildlife populations, and to maintain ecological services for the region (such as protection from drought).



Above: Examples of wetlands sampled in the project. Middle image shows an ARU at a wetland's edge.

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Anonymous Donor

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