Evaluation for Potential Salamander Reintroduction

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Searching for Salamander Species

Ontario Reptile and Amphibian Atlas

Within a 50km radius:

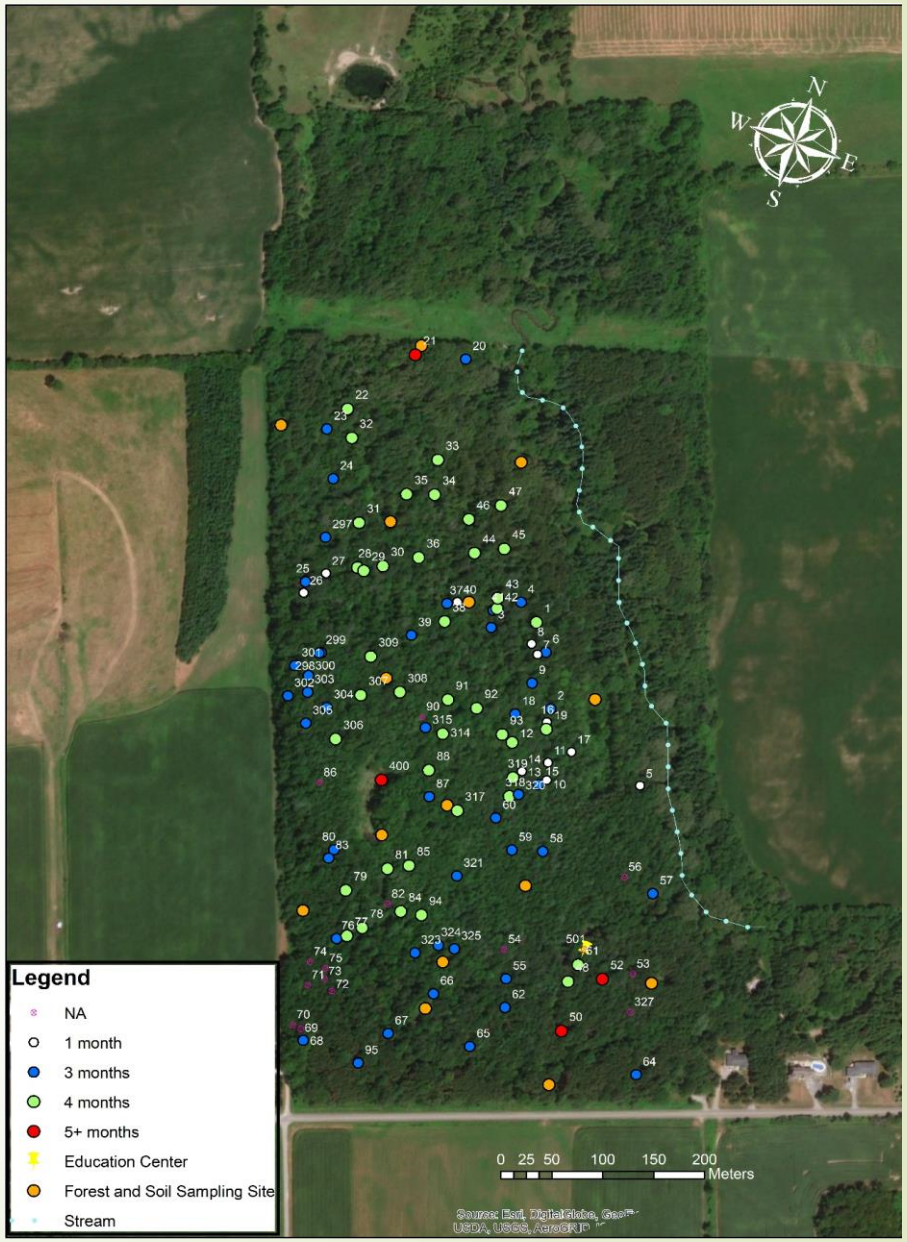
- *Plethodon cinereus (Red backed Salamanders)*
- *Ambystoma maculatum (Spotted Salamanders)*
- *Ambystoma laterale (Blue- Spotted Salamanders)*
- *Notophthalmus viridescens louisianensis (Eastern Central Newt)*

Design

- Grid search to note all vernal pools. Periodic check-up on vernal pool persistence and depth.
- PET plotted on thornthwaite's equation. On a 10yr average, PET<PPT between mid-May to September end. Observations maintained till then.
- Maintaining a 3 month minimum hydroperiods, pools with water for 4 months were measured for pH.
- Random points for terrestrial evaluation. mid- summer evaluation of canopy cover, woody debris in a $100m^2$ plot and, soil samples for moisture capacity and pH.
- Interviews to learn from professionals in the field.

Evaluation Results

- **Number of pools surveyed:** 116
- **Canopy cover range**: 88% to 99%
- **Relevant woody debris range**: 0 to 10 debris/100m^2
- **Soil pH**: 6.09 to 7.60
- **Soil organic content range**: 5.75% to 29.6%
- **pH range of water** 7 to 7.7, with an average of 7.3. (+4 months)
- Green frog and dragonfly metamorphosis results.



Terrestrial Evaluation

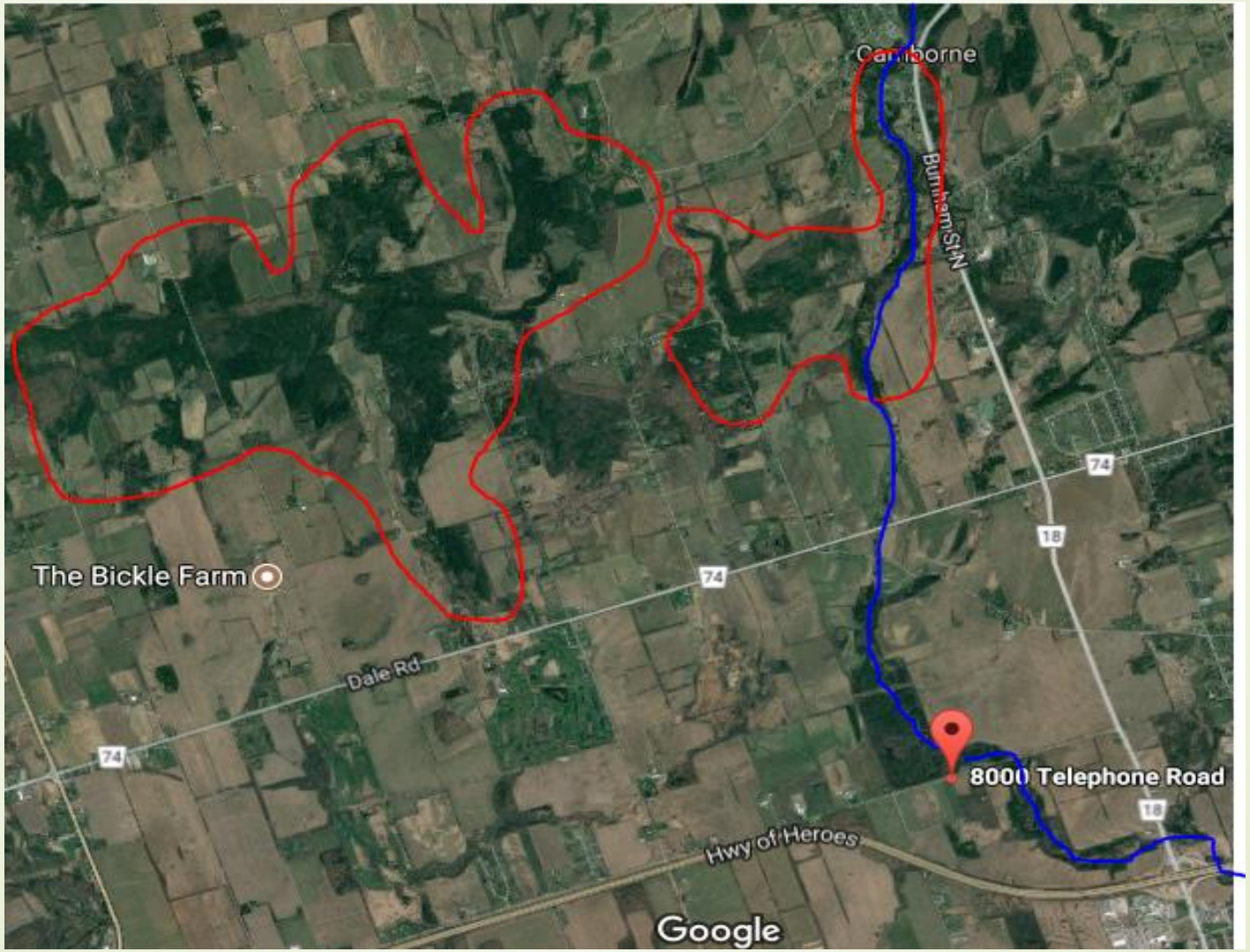
Table3: Data from terrestrial habitat evaluation sampling points										
	Coordinates (UTM83)		Coarse Woody Debris Count (/100m^2)				Canopy	Soil Sample Analysis		
#	Longitude (m)	Latitude (m)	C1	C2	C3	C4	Cover (%age)	%age Organic (g)	Saturation (mL)	pH
1	723091.1021	4874193.971	0	3	3	1	*88.54*	12.04	0.875	6.56
2	722950.6941	4874224.651	1	2	1	3	94.79	9.46	0.75	6.76
3	722804.0592	4874276.461	2	3	4	1	91.67	12.47	0.625	6.58
4	722950.6941	4874274.651	2	2	4	4	94.79	9.61	0.875	7.22
5	723150.6941	4874324.651	1	3	5	5	92.71	7.90	0.625	6.7
6	723000.6941	4874374.651	2	0	3	2	93.75	*5.47*	0.625	*6.41*
7	722850.6941	4874374.651	0	2	1	1	93.75	18.52	0.625	6.56
8	722900.6941	4874424.651	1	2	3	2	*98.96*	11.25	0.875	7.37
9	722800.6941	4874524.651	1	0	3	3	97.92	23.26	0.75	6.09
10	722850.6941	4874624.651	2	2	2	2	95.83	13.43	0.875	7.24
11	722750.6941	4874674.651	1	0	0	2	95.83	10.66	0.625	6.67
12	722616.3664	4874729.447	0	5	3	3	95.83	8.42	0.75	*7.45*
13	722718.3971	4874851.882	0	3	0	0	95.83	16.92	0.625	7.6
14	722850.6941	4874774.651	2	4	1	0	95.83	14.84	0.75	6.7
15	723000.6941	4874574.651	0	1	1	2	97.92	*29.61*	0.875	6.84

Rainfall highest in the last 10 yrs.

Interviews

- A number of experts interviews were conducted regarding the prospects and planning of the project. These include:
  - Madison Wikston - Masters Student at Trent – TA for Herpetology class
  - Patrick Moldowen – PhD candidate at University of Toronto – Studying populations of salamanders in Algonquin Park
  - Mike Oldham – Natural Heritage and Information Centre
  - Tina Fridgen – Professor at Trent – Research in amphibians, teaches Herpetology
- All conclusively advised that connectivity with the surrounding natural areas was the most crucial factor for the success of the project
- Other recommendations included advice for research practices

Searching for Connections



Conclusion

- Property could support all salamander species evaluated due to size and features; Central Newt not recommended
- The vernal pools indicate suitability for hosting salamanders on the site
- Connectivity should be addressed to facilitate migration and access to upland non-reproductive habitat, which might be limited currently because of this lack of connectivity
- Having an increase in connectivity would help ensure a larger gene pool
- Connectivity would also help facilitate rescue effect for the broader meta-populations