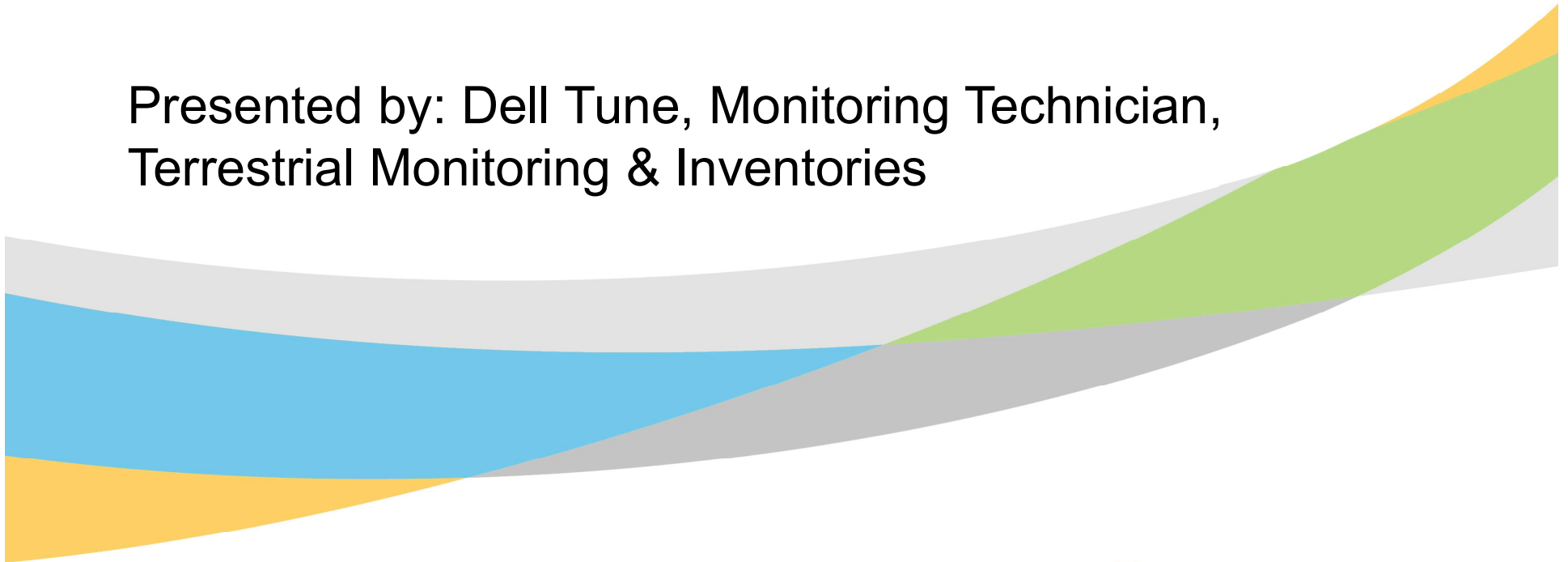


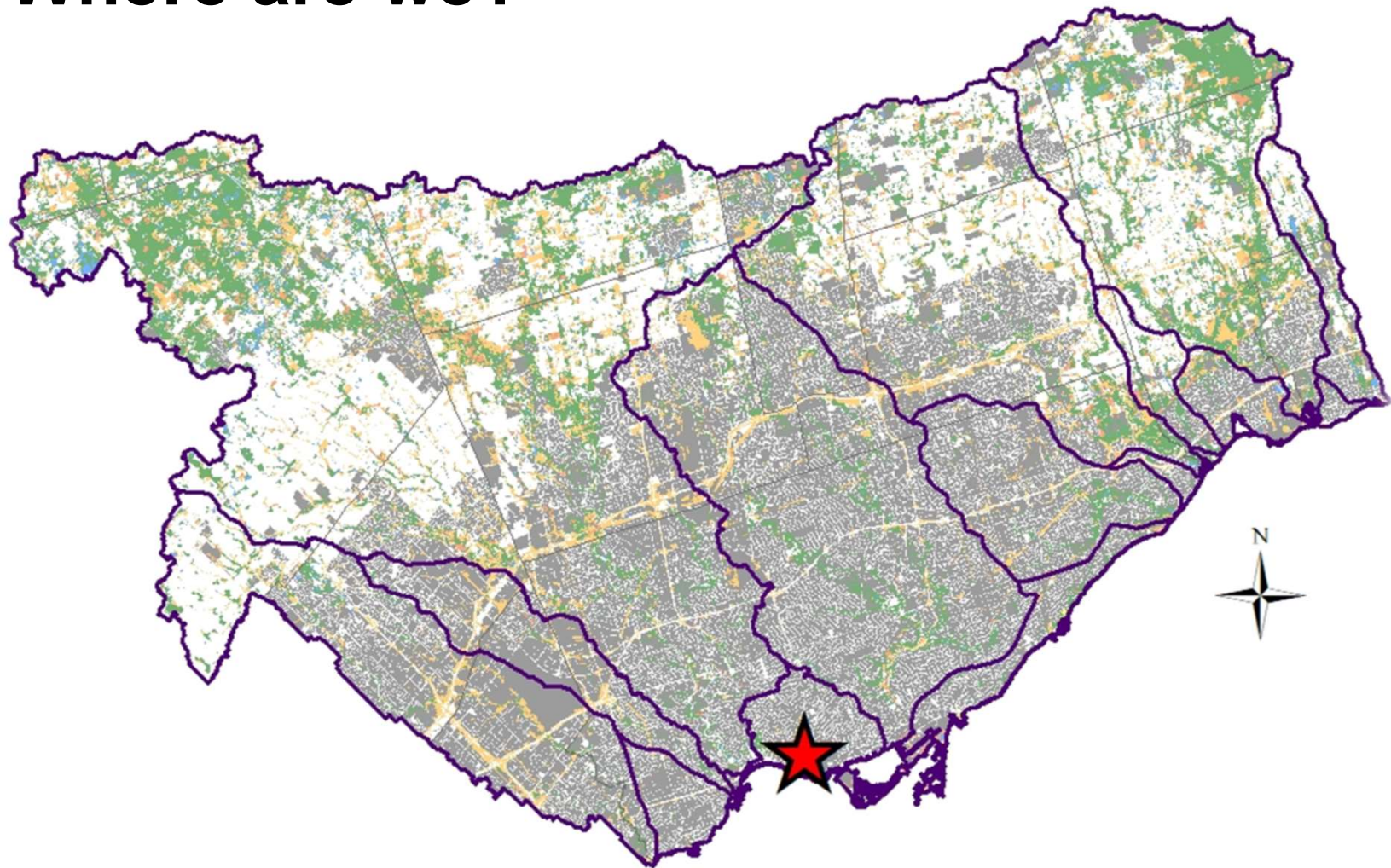
# Trends in Amphibian Populations Across the Toronto Region

Presented by: Dell Tune, Monitoring Technician,  
Terrestrial Monitoring & Inventories

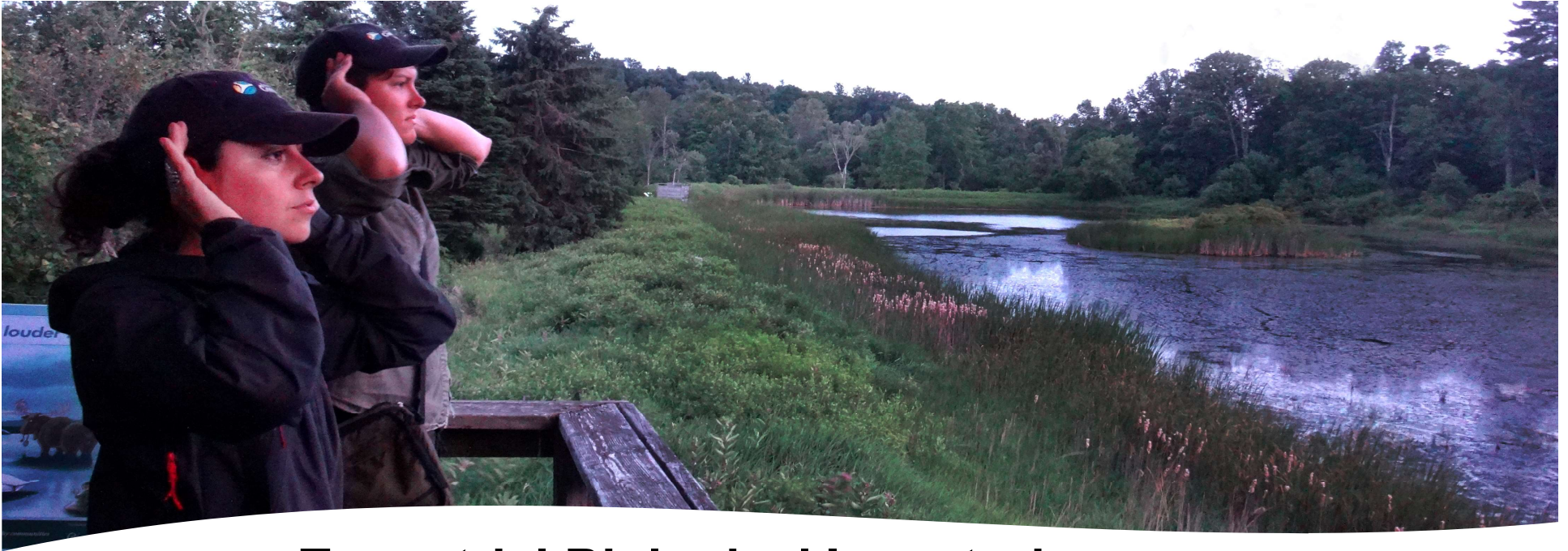


October 1, 2019

# Where are we?

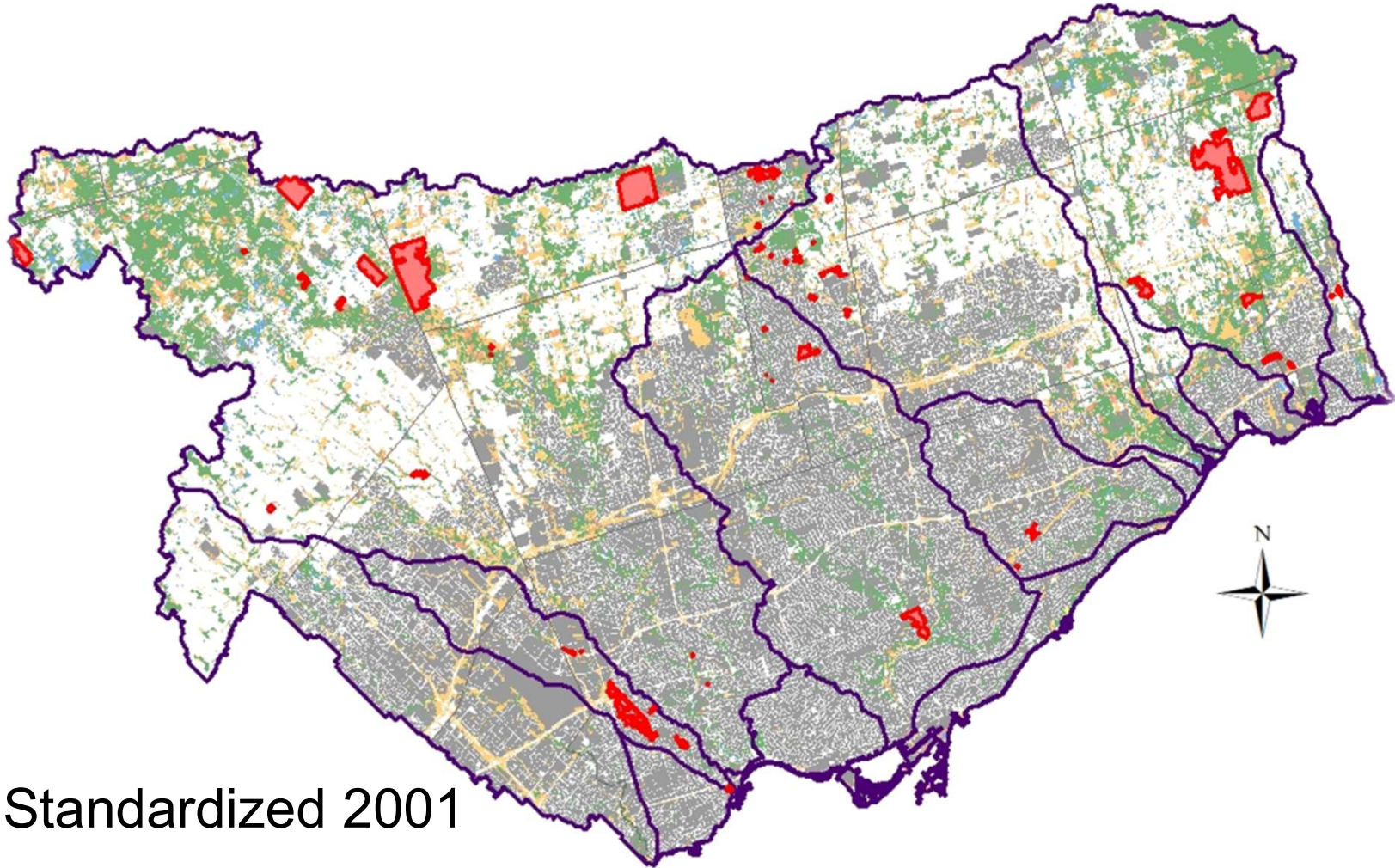






- **Terrestrial Biological Inventories**
  - Walkthrough entire site
  - One evening frog visit - April
- **Long Term Monitoring Program**
  - Three-minute MMP survey
  - Three evening visits per year – April, May, June/July

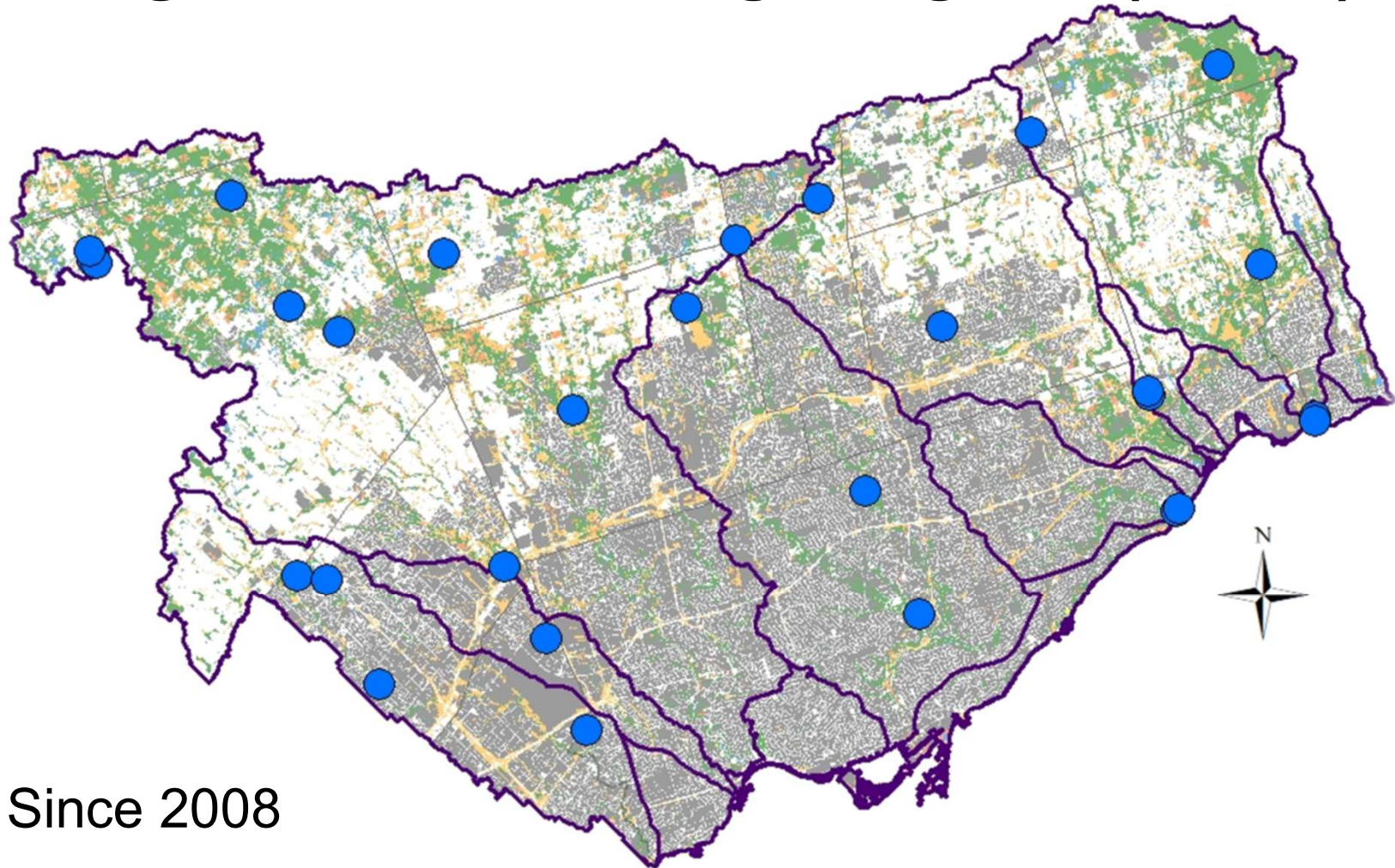
# Terrestrial Biological Inventories



Standardized 2001  
2000 ha per year

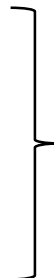


# Long Term Monitoring Program (LTMP)




Since 2008  
24 frog monitoring sites

# Scoring and Ranking

- Proactive approach
- Seven scoring criteria
  - Habitat dependence
  - Sensitivity to development
  - Patch Isolation Sensitivity
  - Area Sensitivity

Ecological sensitivity

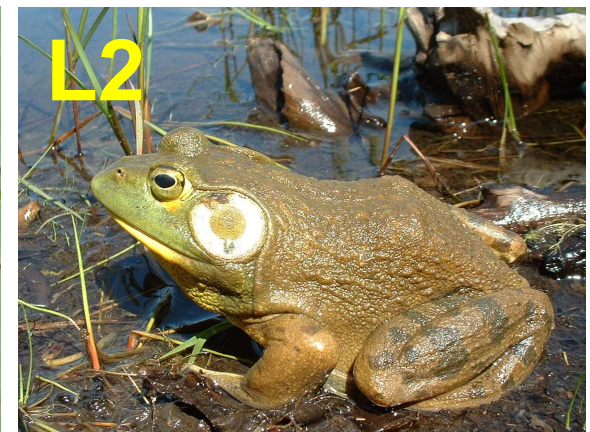
  - Local Occurrence
  - Continental population trend
  - National population trend

Population



# Scoring and Ranking

- L-rank
  - L1-L3 - species of regional concern
  - L4 - species of urban concern
  - L5 - no concern
  - L+ - non-native





# Why Frogs?

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- Indicator Species
- Permeable skin –sensitive to environmental changes
- Two habitats
  - Land
  - Water
- Audible









# Wood frog

## *Lithobates sylvatica*

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- Breed April in vernal pools
- Explosive breeder
- Forage in moist forests
- Hibernates in leaf litter and debris in upland forests
- Tolerate freezing



## Slide 11

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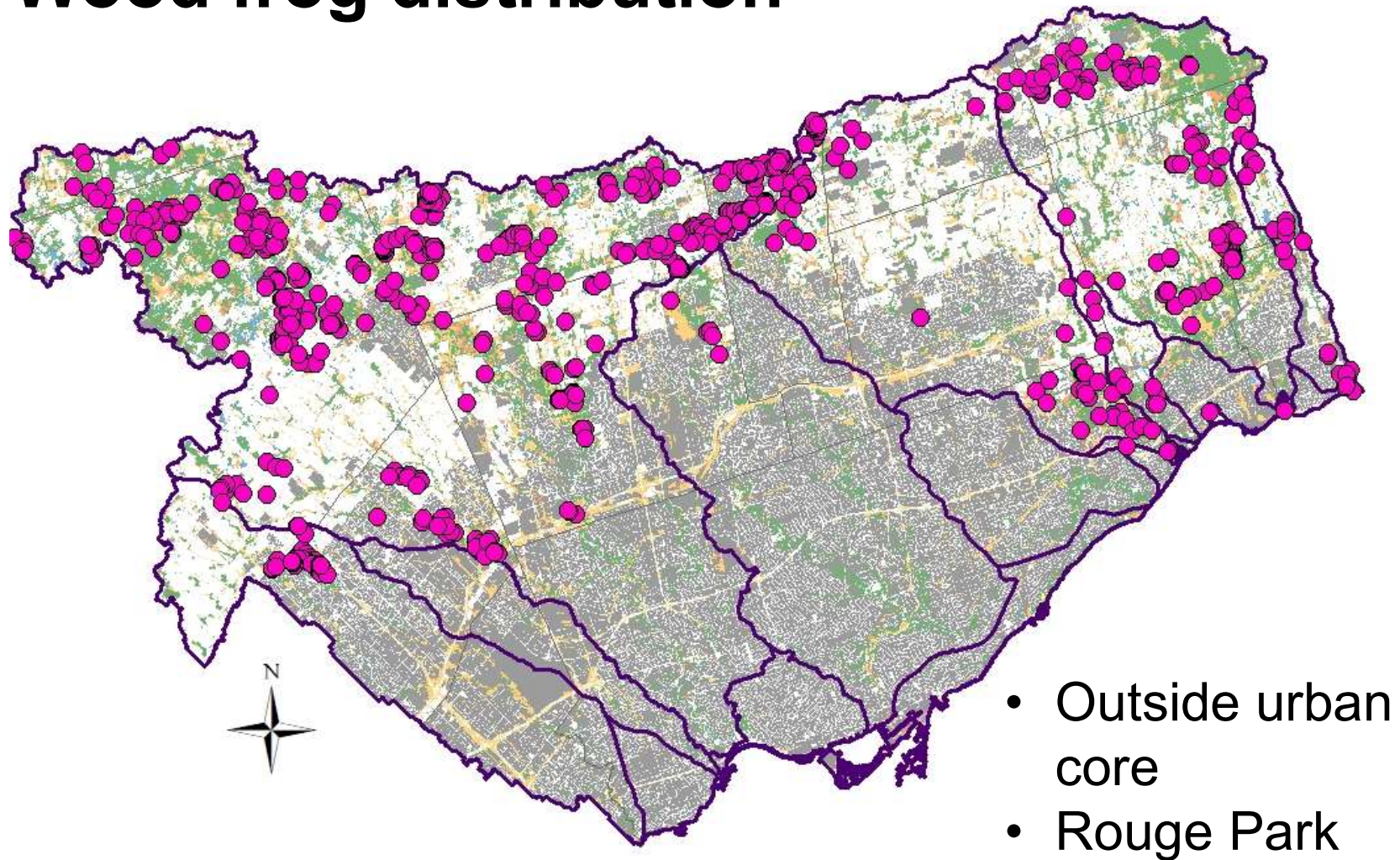
**DT38**

add soundbites for each species.

Dell Tune, 9/26/2019



# Wood frog distribution



# Spring peeper

*Pseudacris crucifer crucifer*

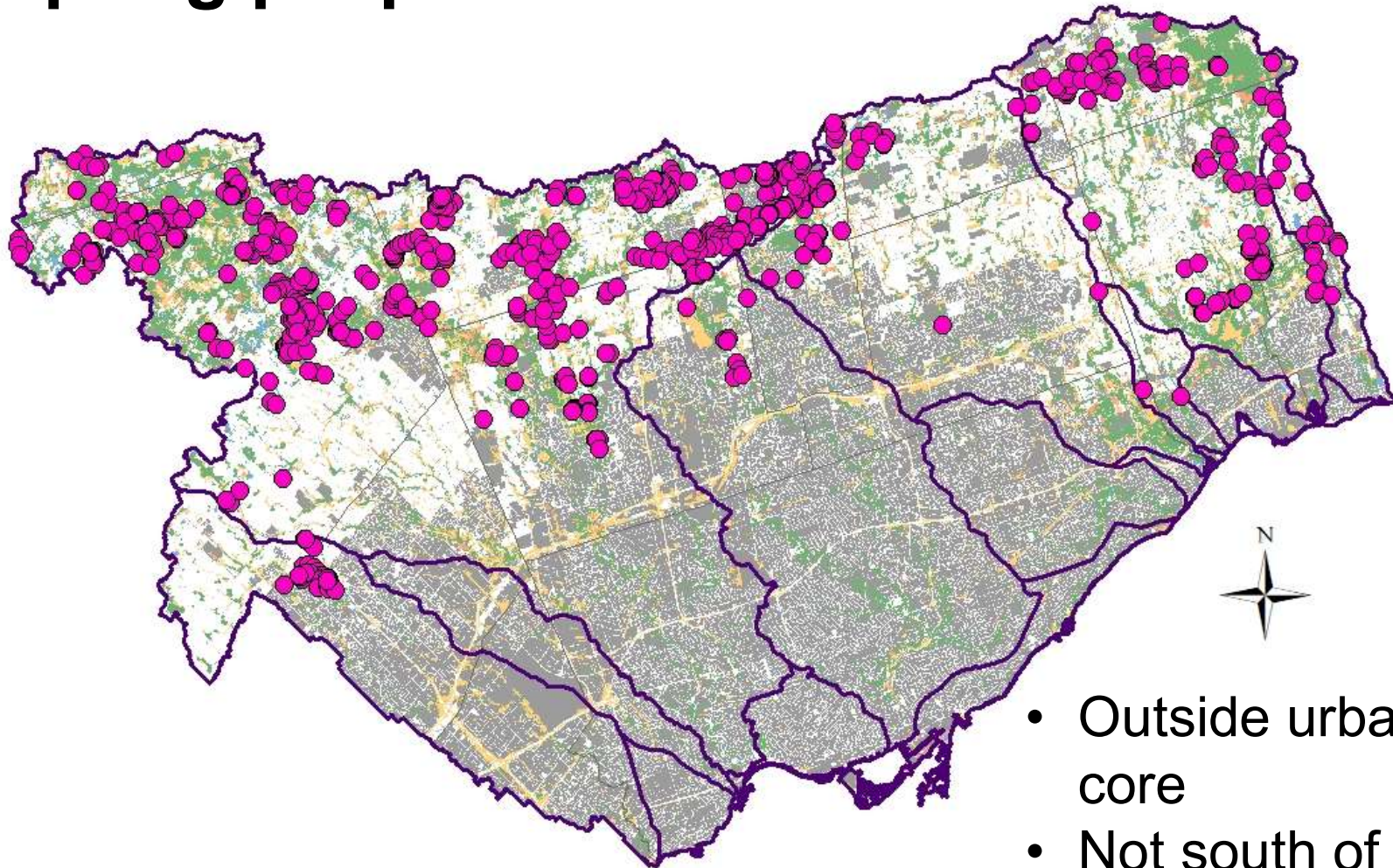
---

- Breed April-May in vernal pools
- Forage in moist forests
- Hibernate in upland forests
- Tolerate freezing





# Spring peeper distribution



- Outside urban core
- Not south of 401

# Western chorus frog

*Pseudacris triseriata*

---

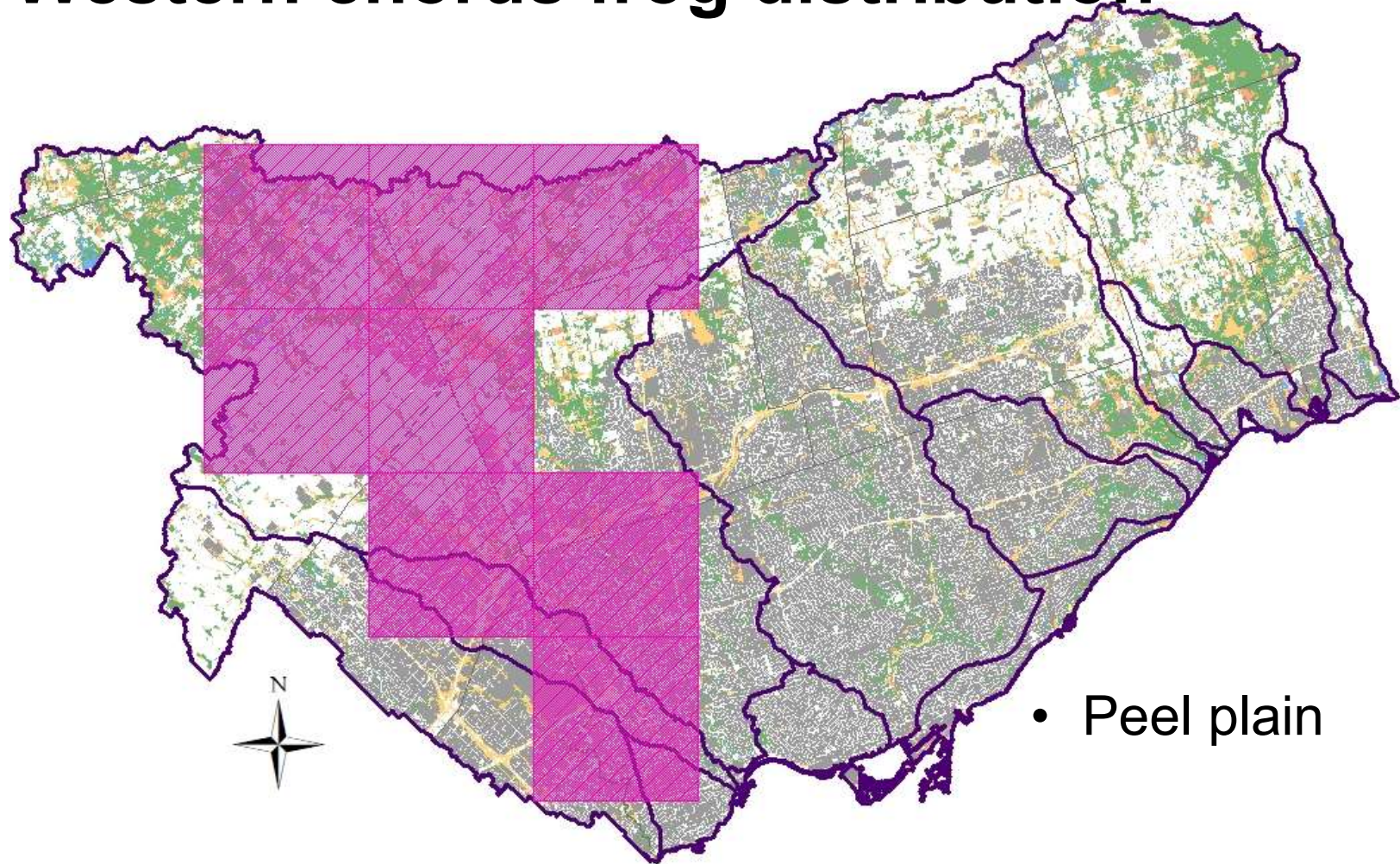
- Species at Risk
- Breed April-May in fishless wetlands with  $\geq 10\text{cm}$  water
- Forage in forests & meadows
- Hibernate close to breeding wetland
- Tolerate freezing

"Western chorus frog" by [U.S. Fish & Wildlife Service](#) is licensed under [CC BY 2.0](#)





# Western chorus frog distribution



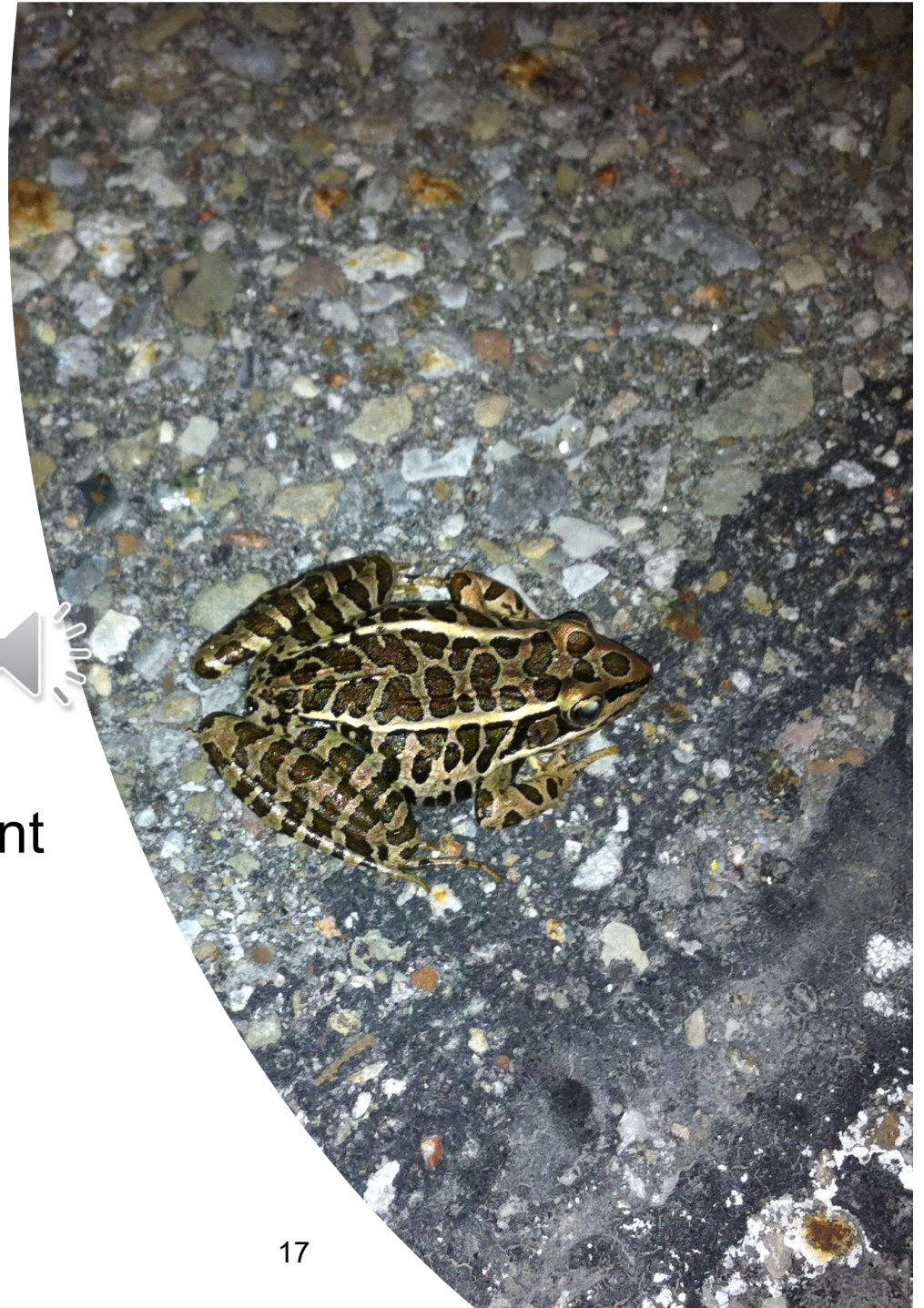


# Pickerel frog

*Lithobates palustris*

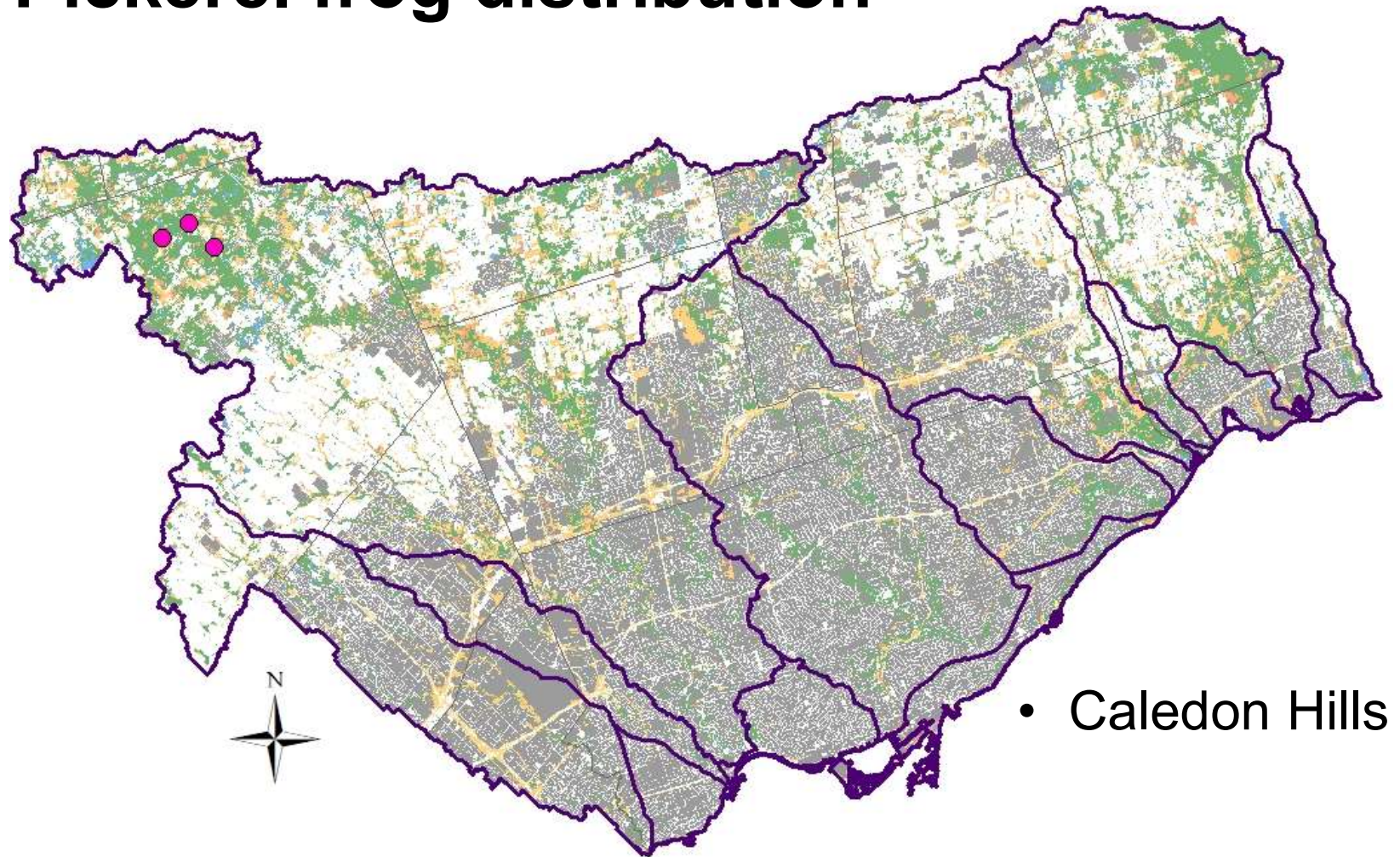
---

- Breed May in streams & cool clear ponds
- Mobile – forage in meadows
- Hibernates in pond sediment
- Poisonous





# Pickerel frog distribution





# Northern leopard frog

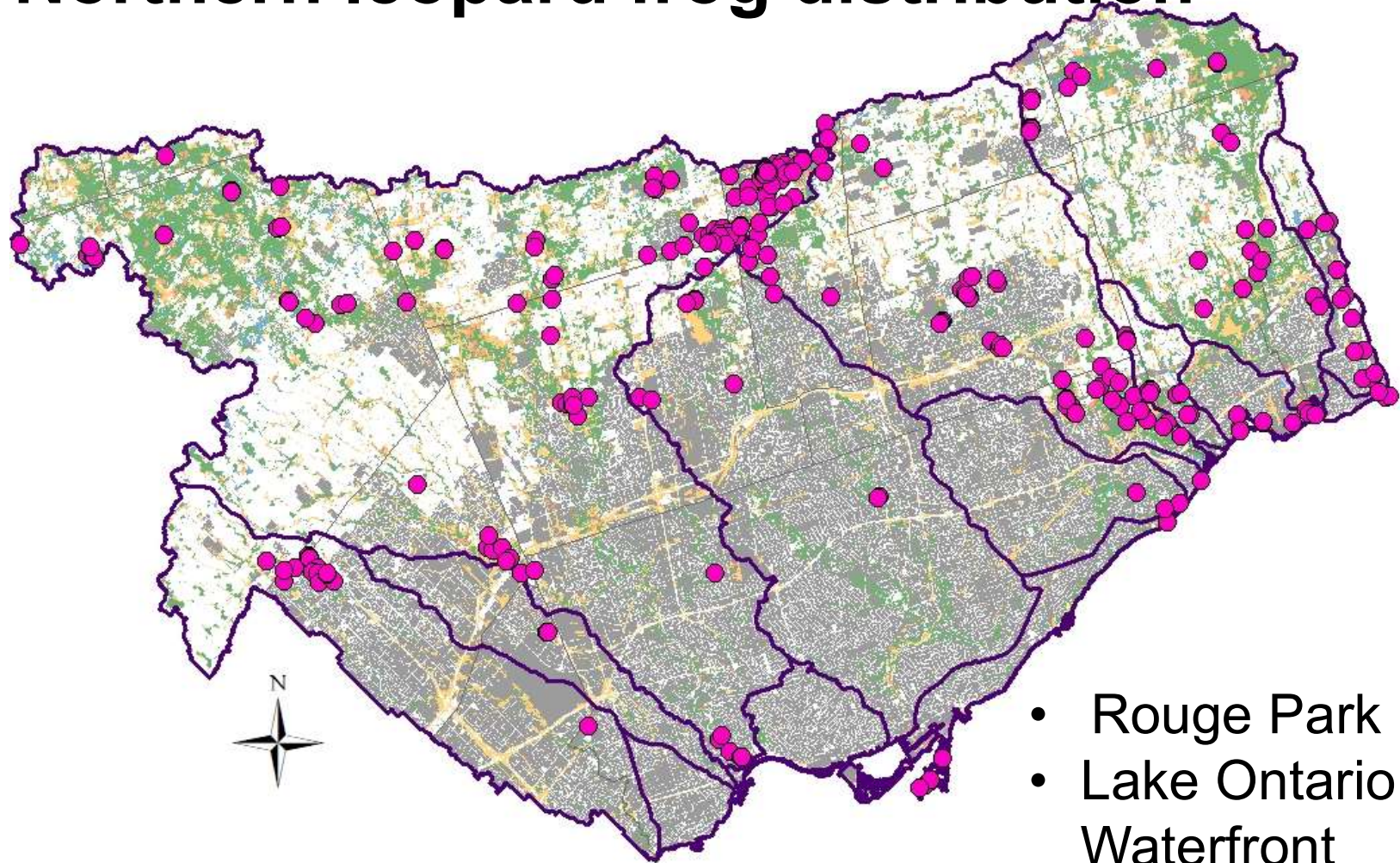
*Lithobates pipiens*

- Breed May in various wetlands
- Mobile – forage in meadows
- Hibernate in pond sediment





# Northern leopard frog distribution





# American toad

*Anaxyrus  
americanus*

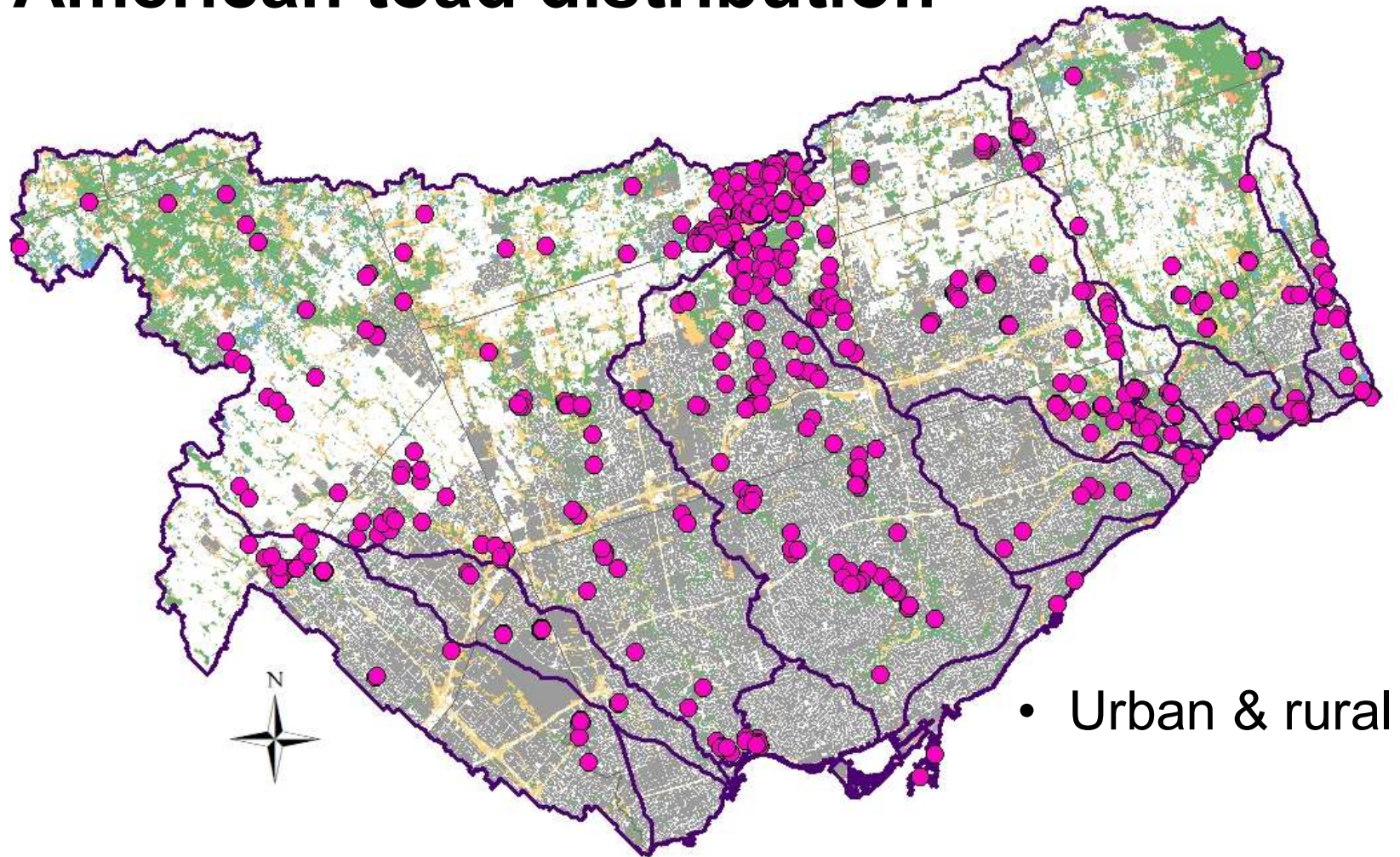
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- Breed May in ponds, roadside ditches
- Highly terrestrial – thick skin
- Hibernate in soil below frost line
- Poisonous





# American toad distribution





# Grey treefrog

## *Hyla versicolor*

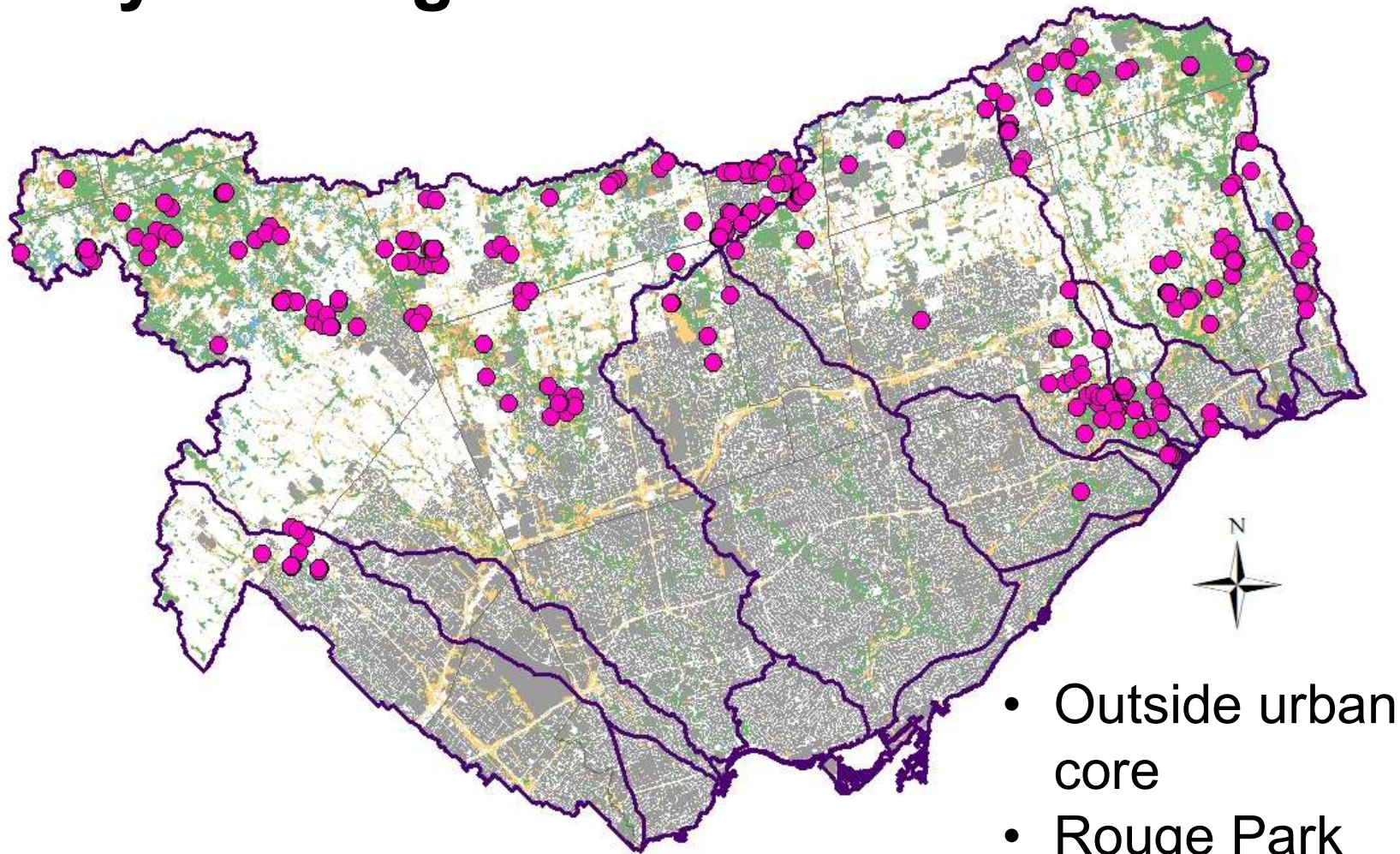
---

- Breed May in permanent or vernal pools
- Highly arboreal
- Hibernates in forest
- Tolerates freezing
- Camouflage – change skin colour





# Grey treefrog distribution





# Green frog

*Lithobates clamitans*

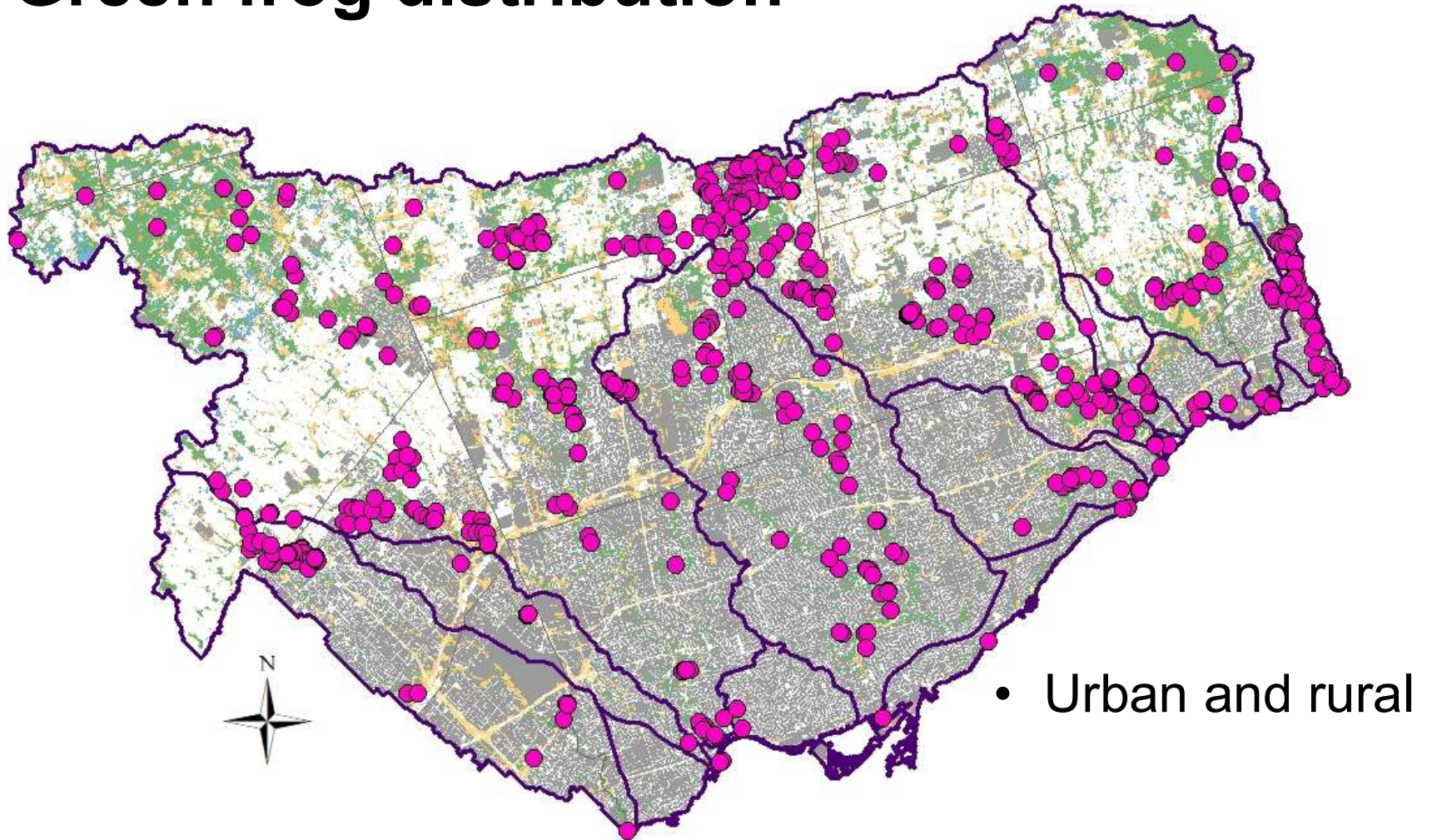
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- Breed (June/July) and forage in variety of wetlands
- Hibernates in sediment in ponds





# Green frog distribution

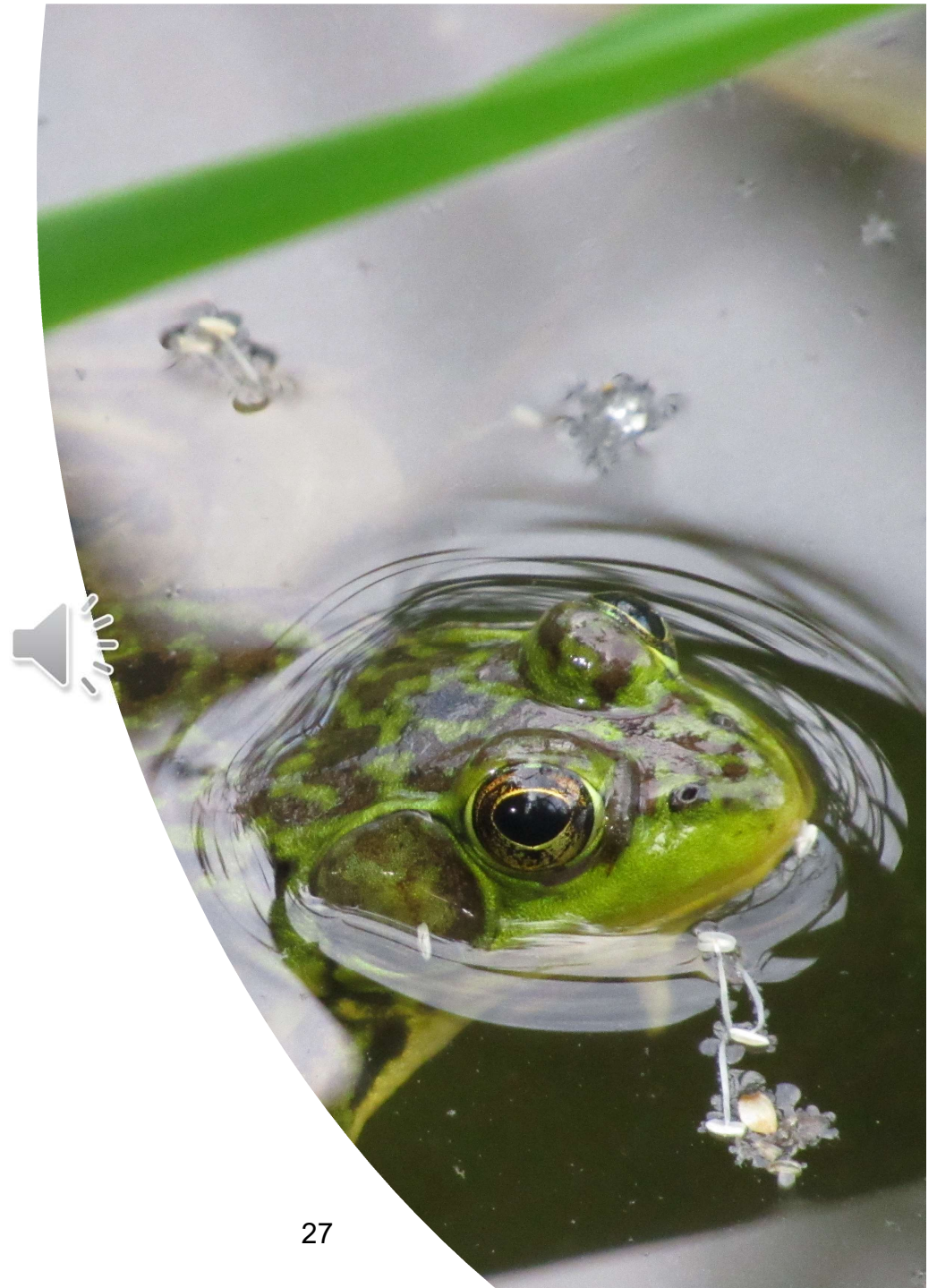


# Mink frog

*Lithobates septentrionalis*

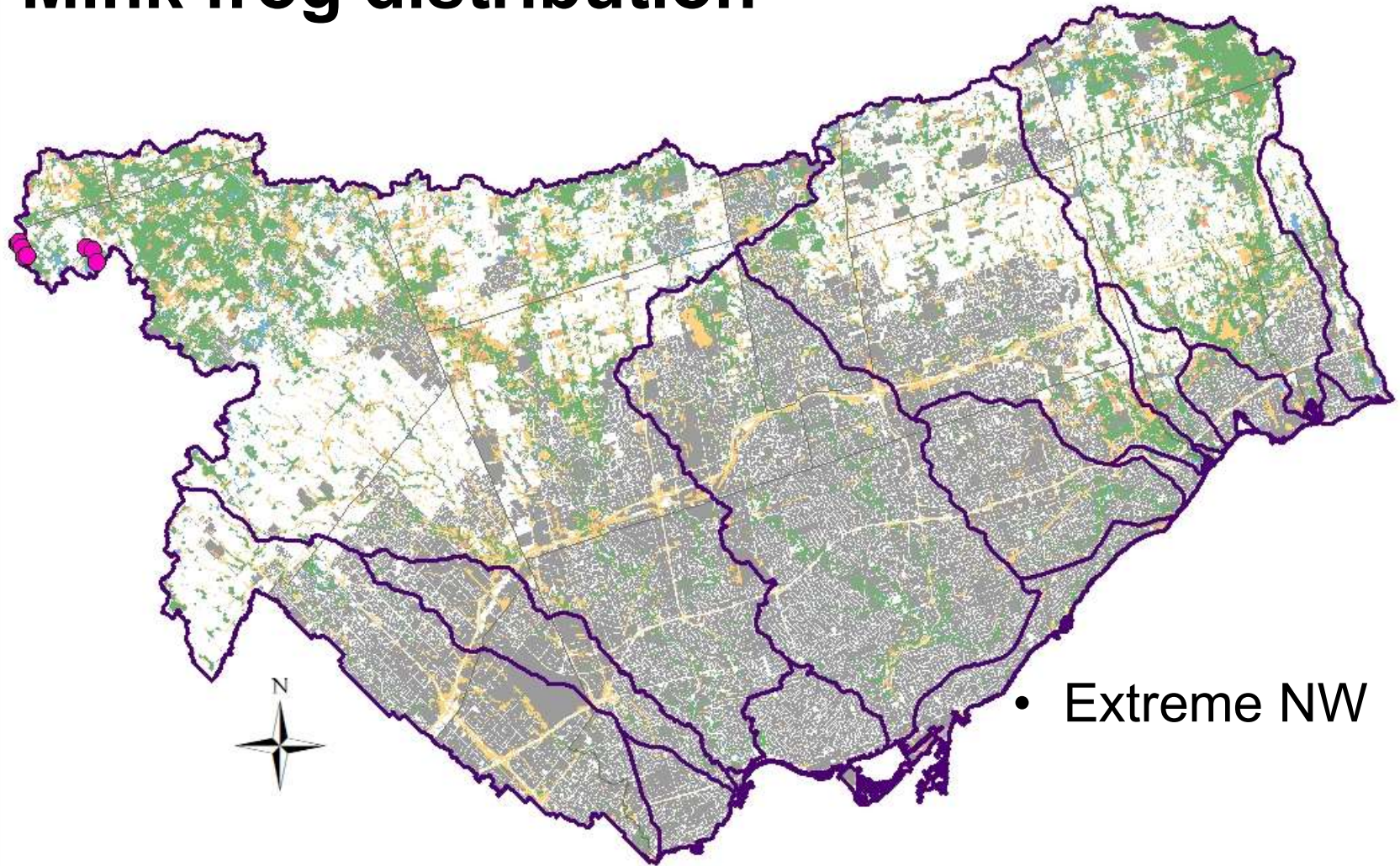
---

- Breed (June/July) and forage in large cold water bodies
- Hibernates in lake sediment
- Pungent musky odour





# Mink frog distribution



# Bullfrog

*Lithobates*  
*catesbeiana*

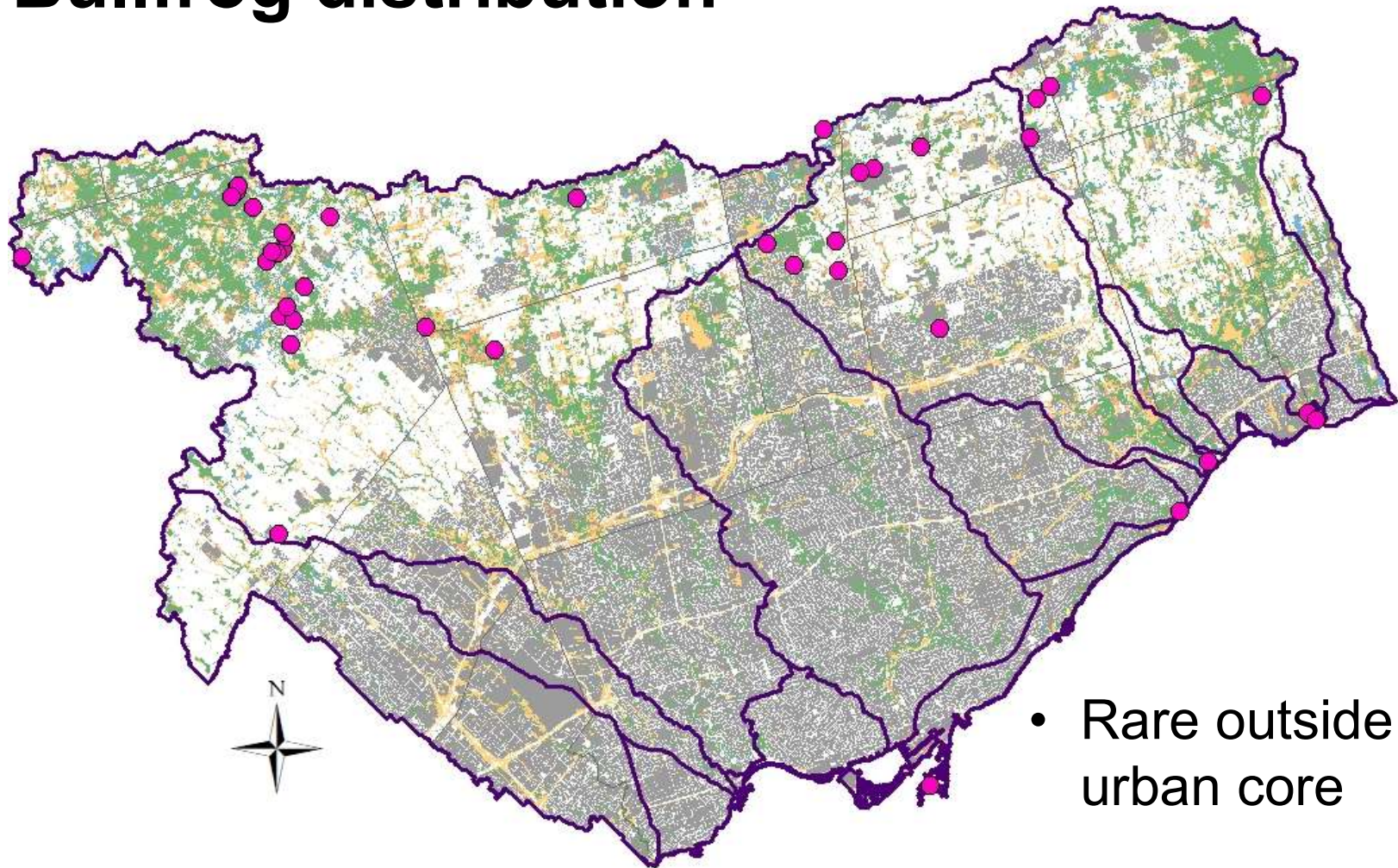
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- Breed (June/July) and forage in large deep waterbodies
- Hibernate under sediment in lakes



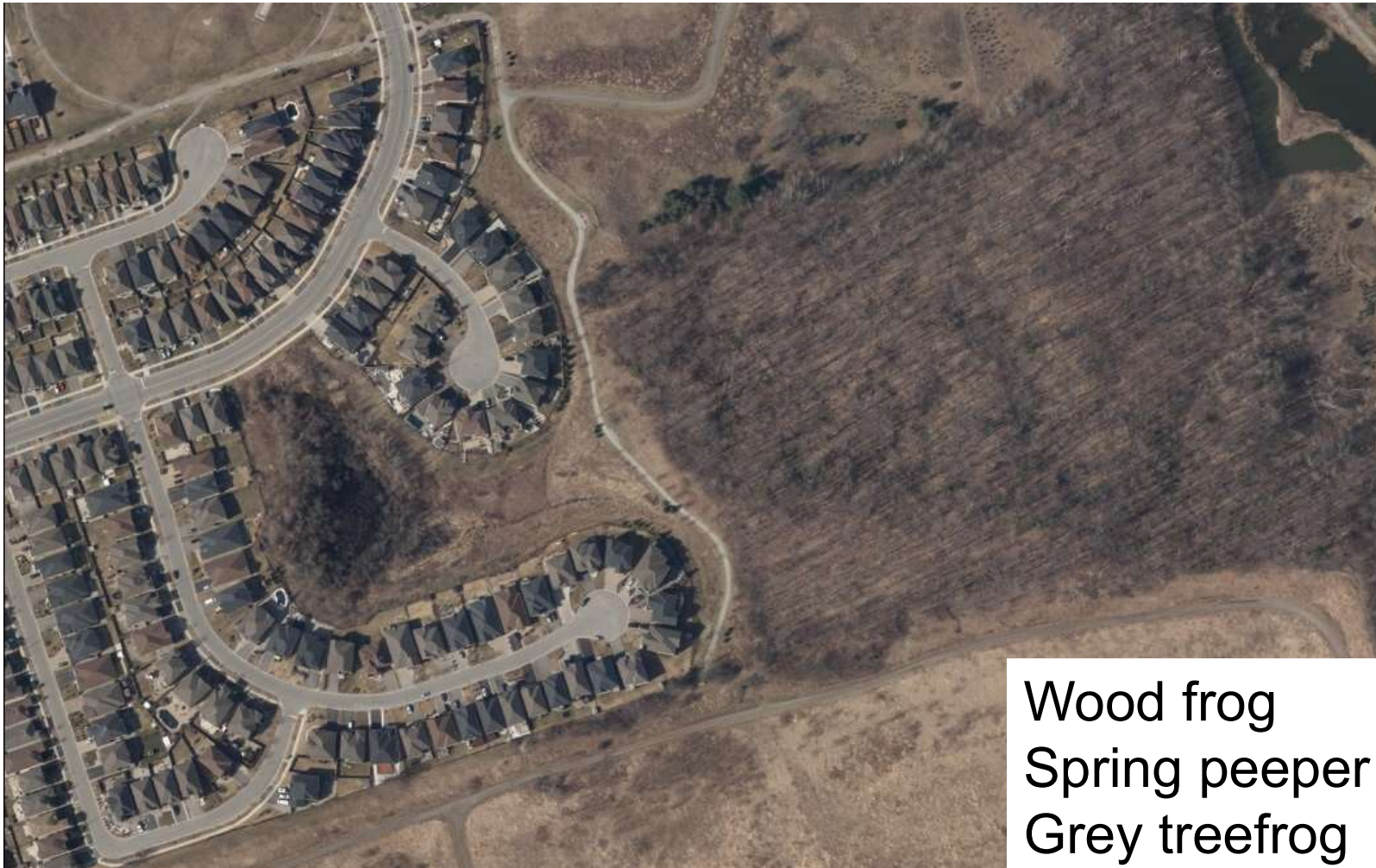


# Bullfrog distribution



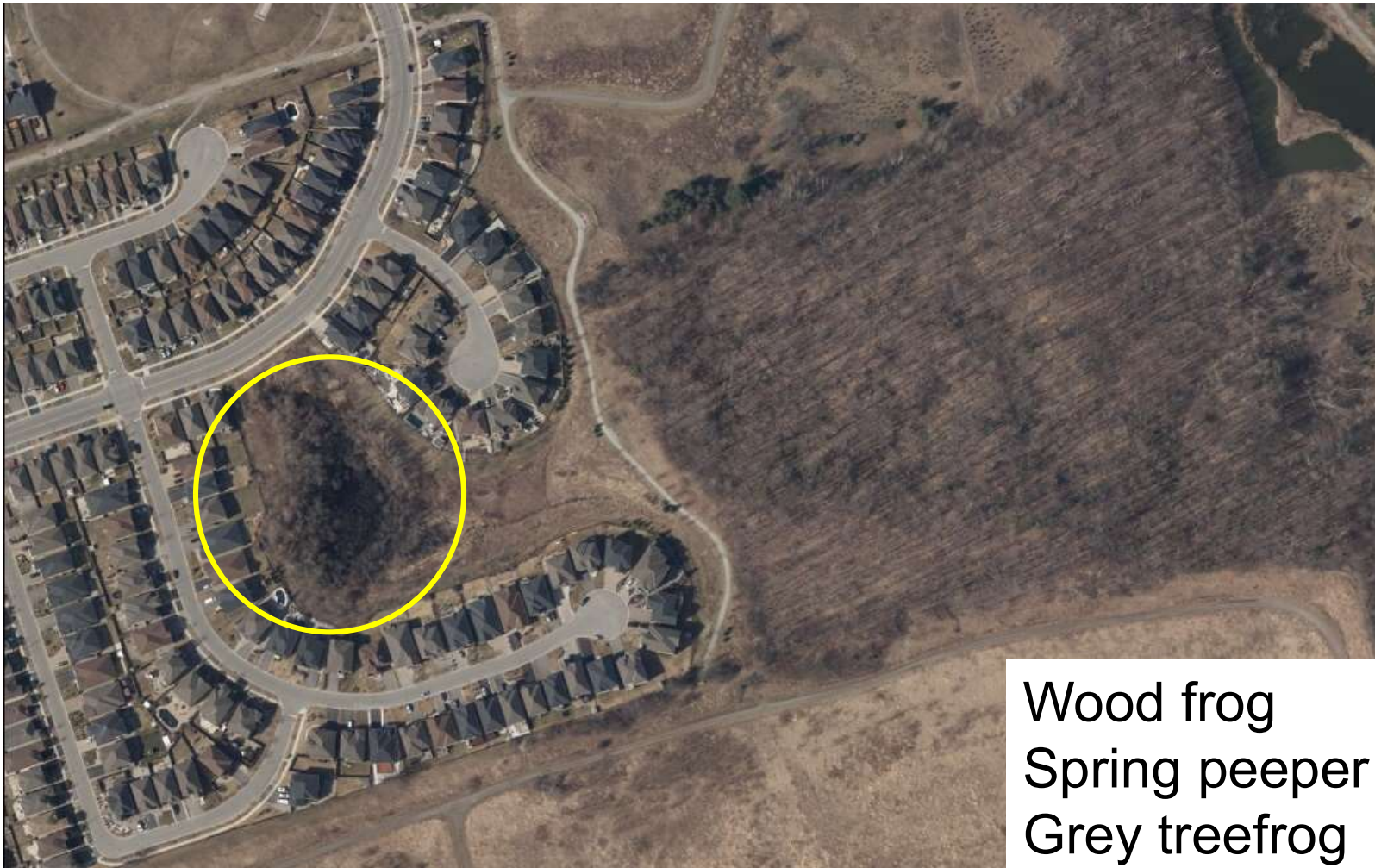


# Habitat Connections



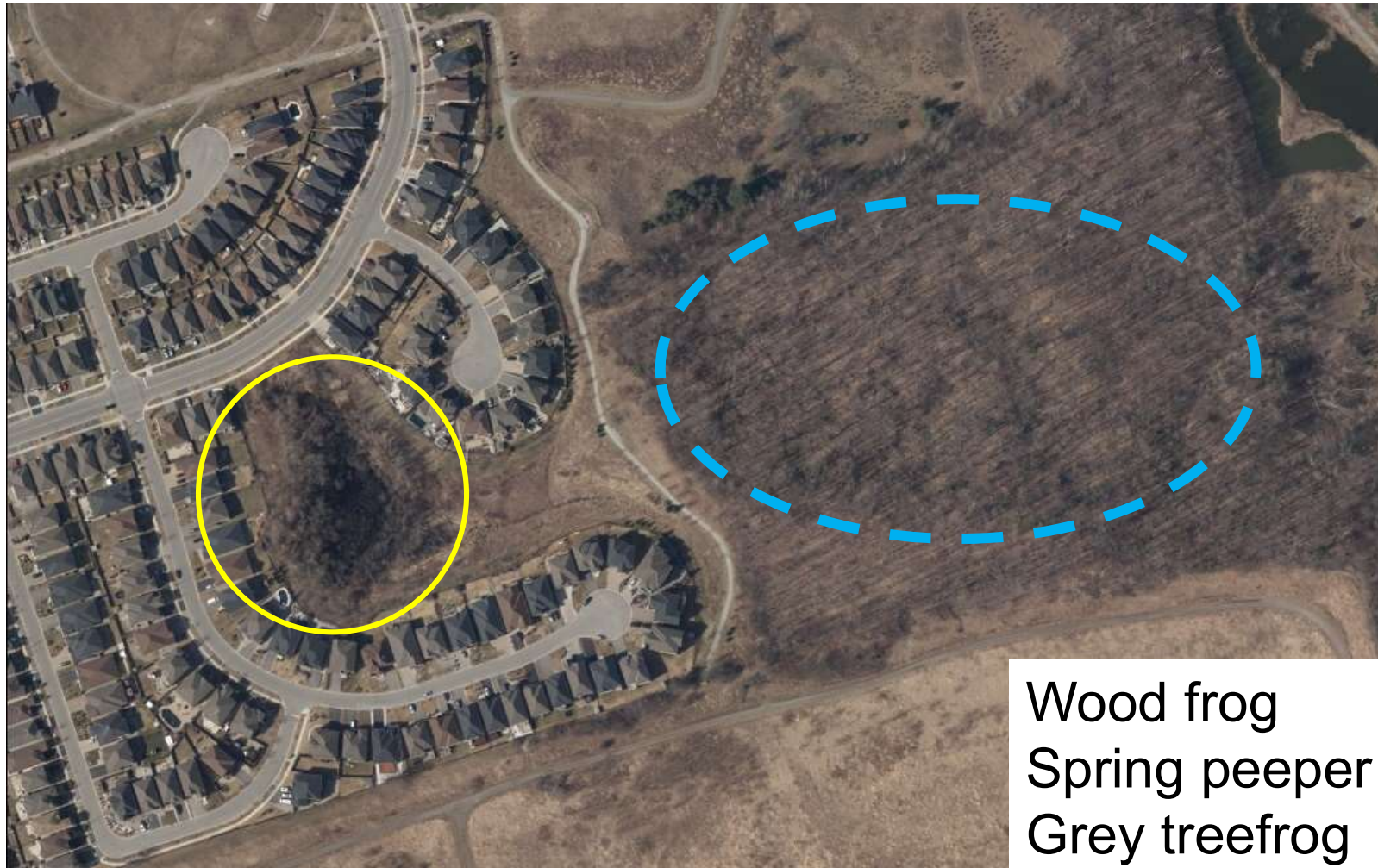


# Habitat Connections



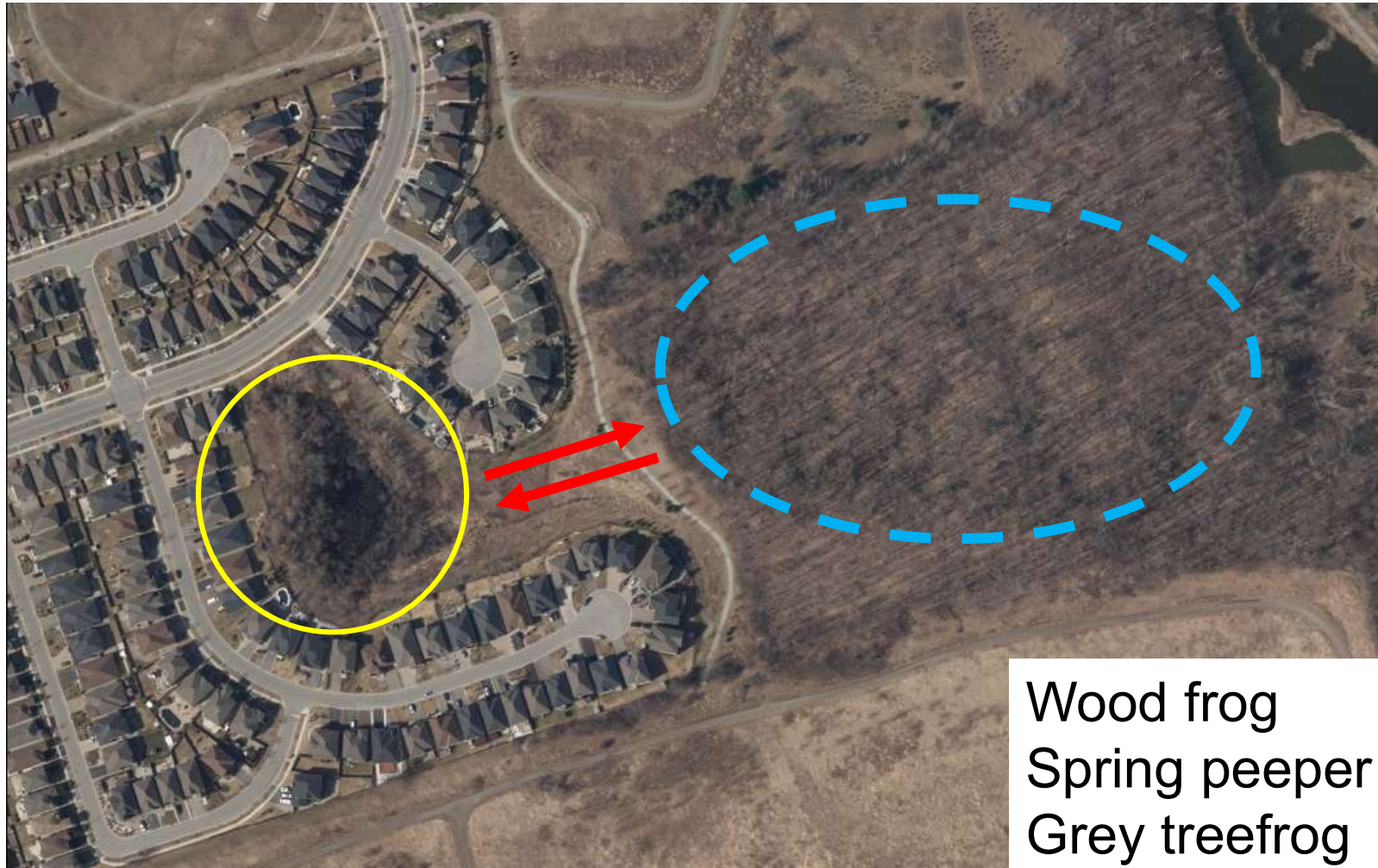
Wood frog  
Spring peeper  
Grey treefrog

# Habitat Connections





# Habitat Connections





# Threats

- Chytrid disease
- Ranavirus

Subsidized  
predators



Habitat  
destruction



Climate change

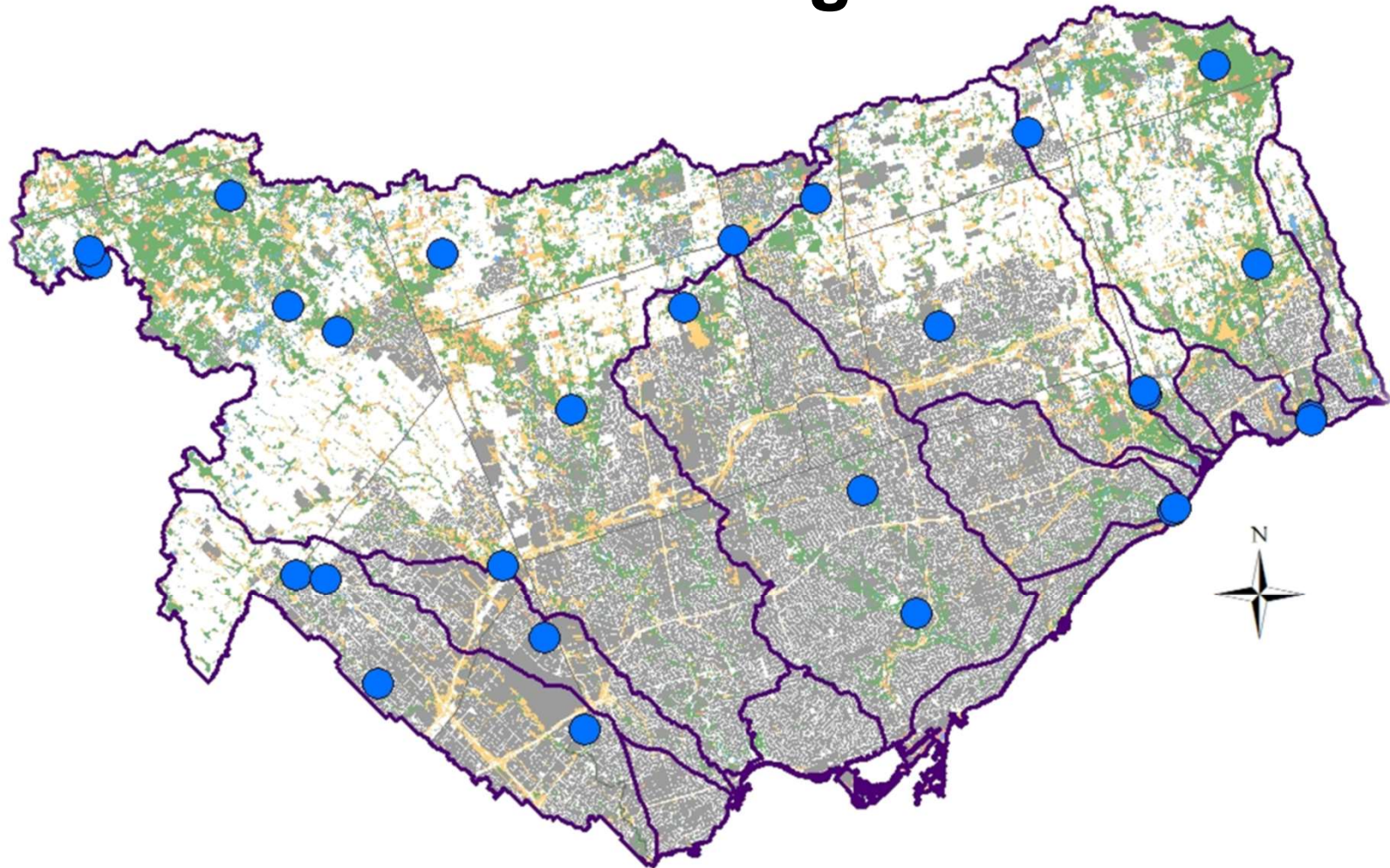


Road mortality

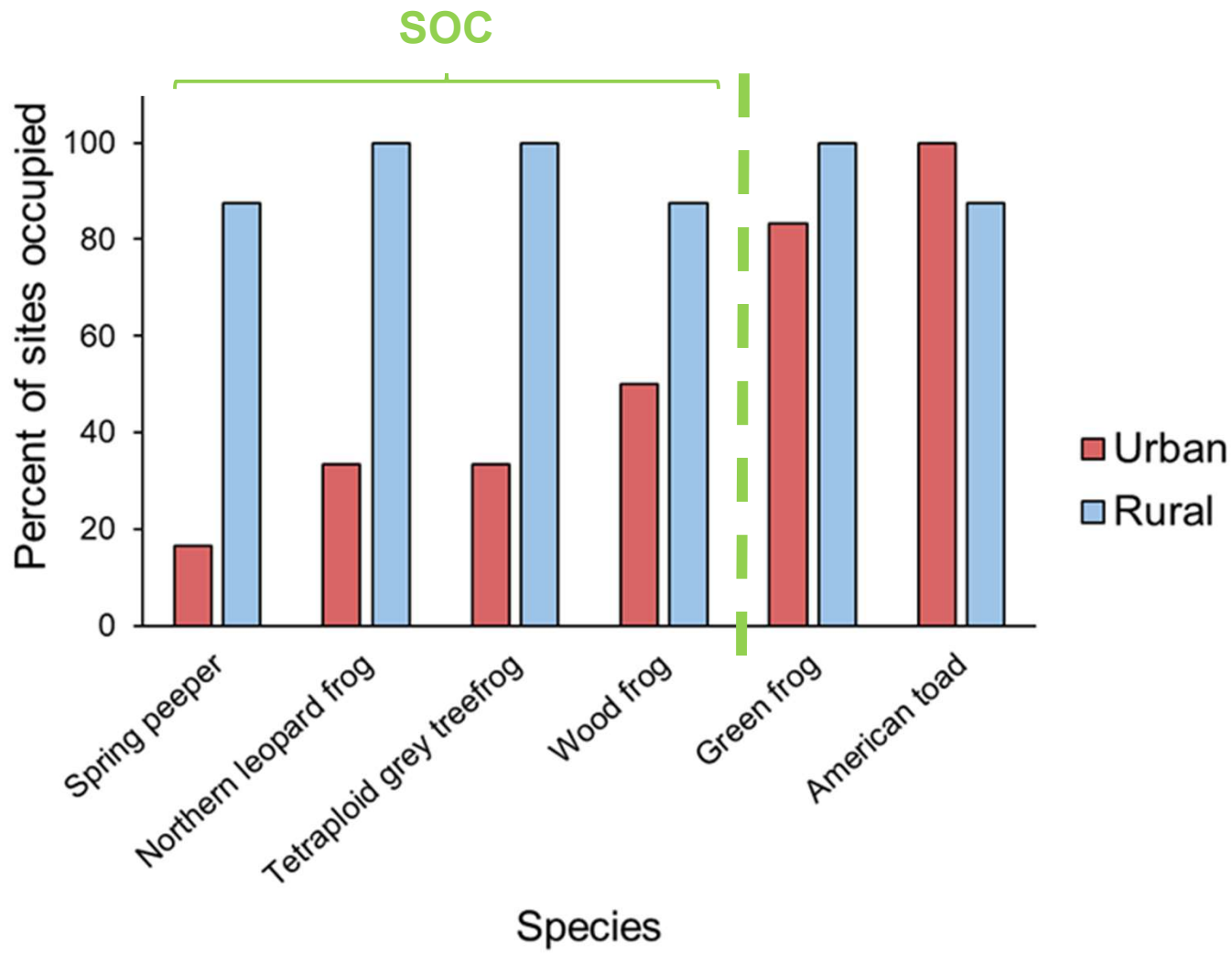




# What are the data telling us?

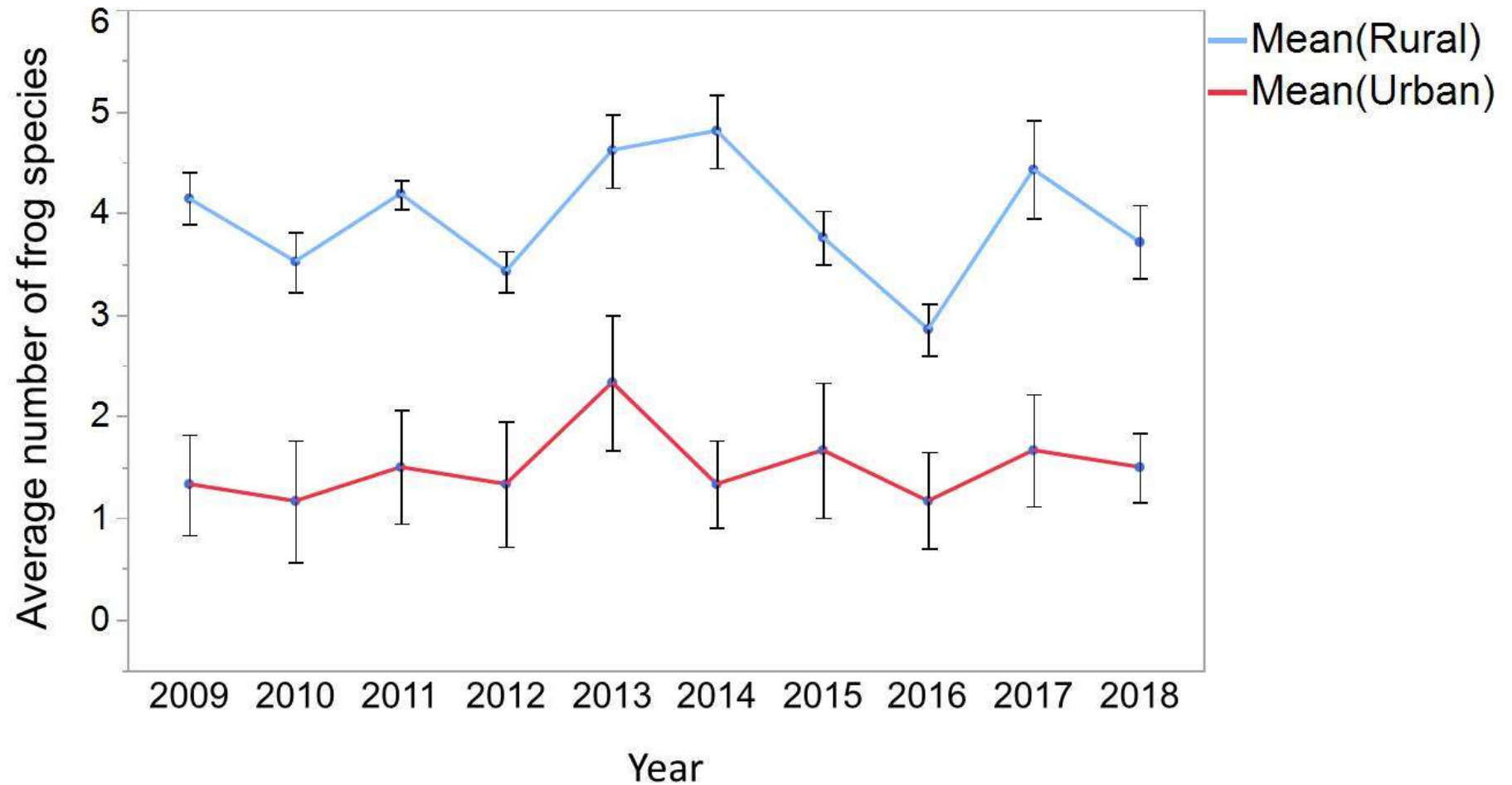


# What are the data telling us?





# What are the data telling us?





Want to know more?

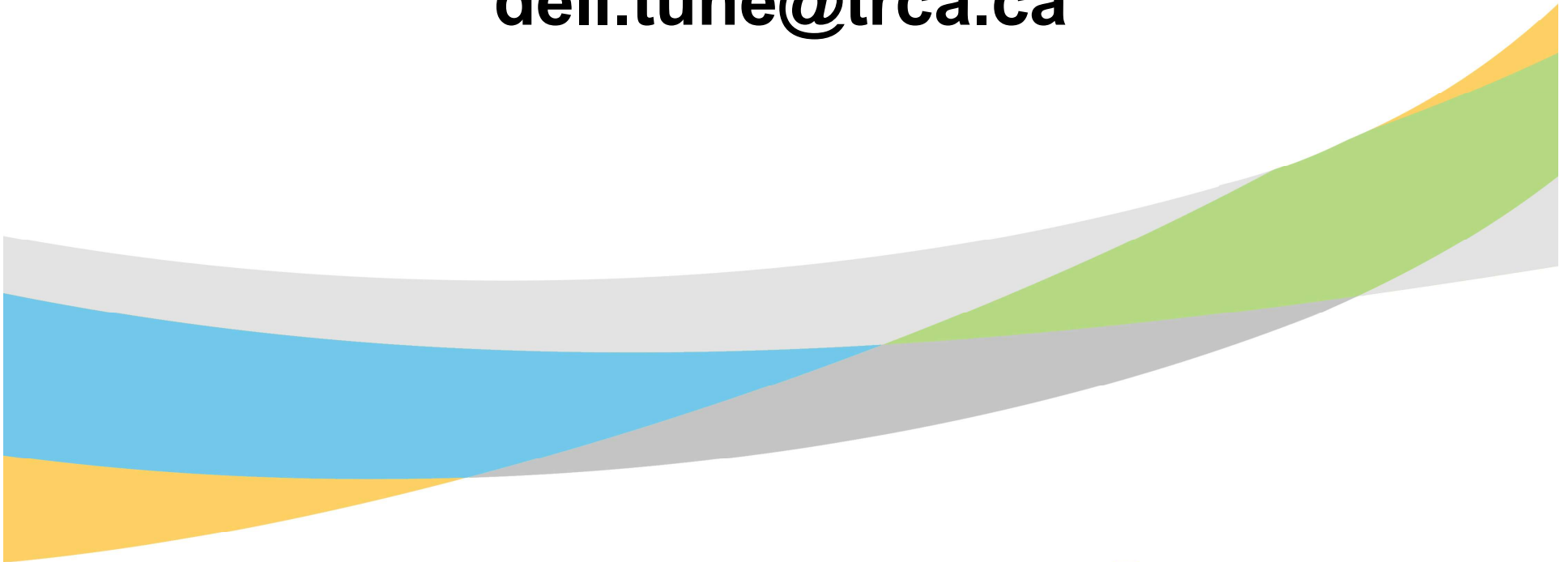
<https://trca.ca/conservation/environmental-monitoring/>

Thanks to our regional municipal partners, City of Toronto and Town of Richmond Hill



**Thank you**

**dell.tune@trca.ca**



[www.trca.ca](http://www.trca.ca)