

Monitoring Breeding and Improving Habitat for Species at Risk Birds at Royal Botanical Gardens



**ROYAL
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GARDENS**
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Presentation by
Lindsay Barr,
Terrestrial Ecologist
November 5, 2013



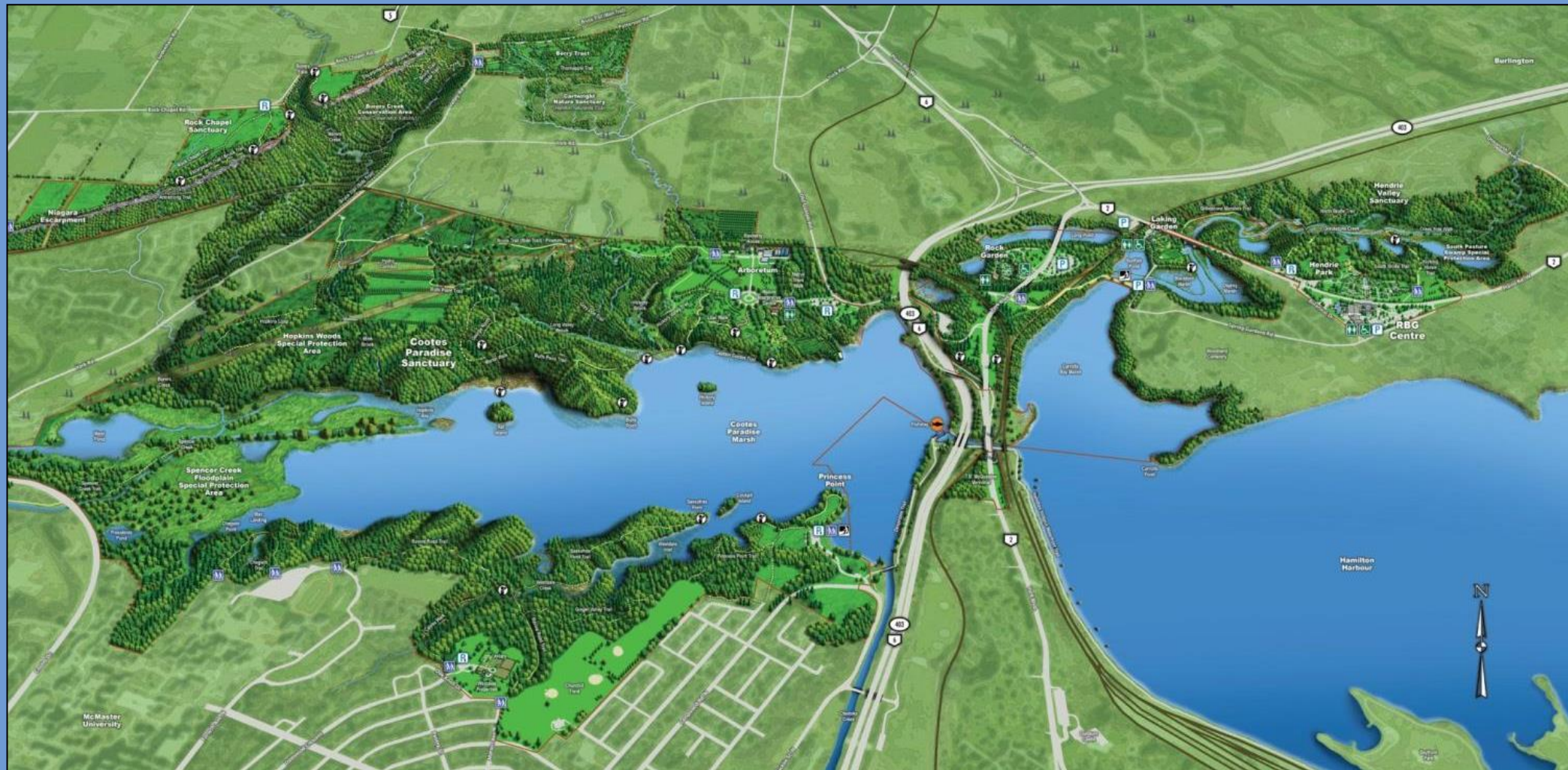
Baltimore Oriole

Photo by Sandra and Frank Horvath

Overview

- About Royal Botanical Gardens
- Why monitor breeding birds?
- How do we monitor breeding birds?
- Monitoring results
- Monitoring for Species at Risk birds
- Acadian Flycatcher Habitat Improvement Project

Royal Botanical Gardens (RBG) is the largest botanical garden in Canada, a National Historic Site, and registered charitable organization with a mandate to bring together people, plants and nature.





Designations

- UNESCO World Biosphere Reserve
- Important Bird Area (IBA)
- Important Area for Reptiles and Amphibians (IMPARA)
- Provincial Area of Natural and Scientific Interest (ANSI)
- Environmentally Sensitive Area
- Contains Class 1 and 2 wetlands



Why monitor breeding birds?

RBG wouldn't exist if it weren't for the birds! Our land was originally protected because it was recognized for its significance as a **bird sanctuary**.

Each bird species depends on the ecosystem's resources in different ways.

Surveying bird populations is therefore very telling, and can help **identify ecosystem changes and stresses** (in addition to telling us about the birds themselves).

In 2008 Breeding Bird Monitoring was paired with Forest Ecosystem Monitoring. It has become an annual practice which helps us determine the health of our ecosystems.



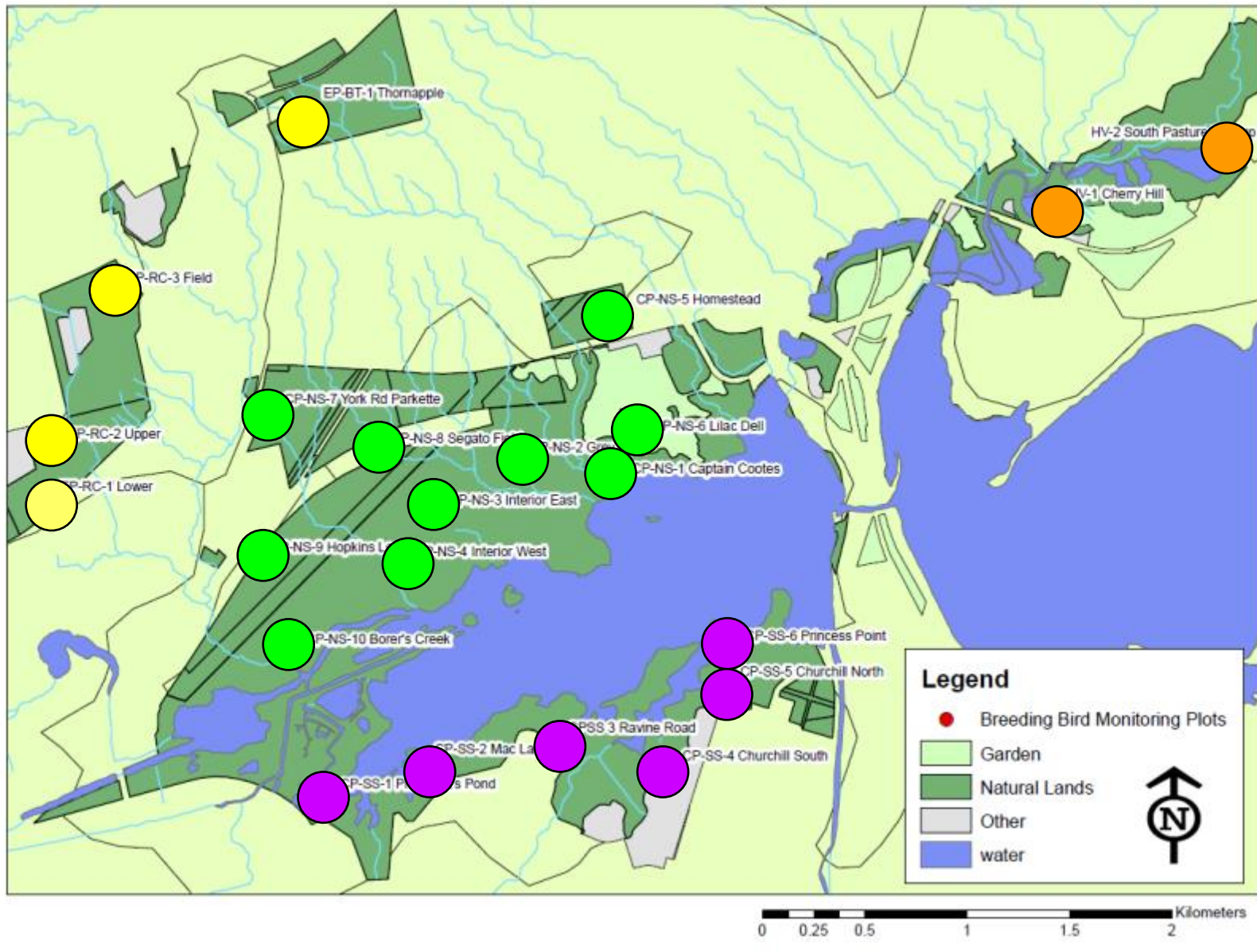
How do we monitor breeding birds?

Birds **sing to mark their territories**, attract females, and sometimes to keep track of where relatives are.

A trained eye and ear can, in 10 minutes, identify a large proportion of the birds present in a plot.

We use the point count method (based on the Ontario Breeding Bird Atlas).

Plots are circular (100m radius) and visited 4 times during the month of June between the hours of 5:30am and 10:30am.



22 Plots

10 North Shore

6 South Shore

4 Escarpment

2 Hendrie Valley

14 of these plots are paired with long-term forest monitoring plots



Monitoring Results

Dominant Species

Abundance

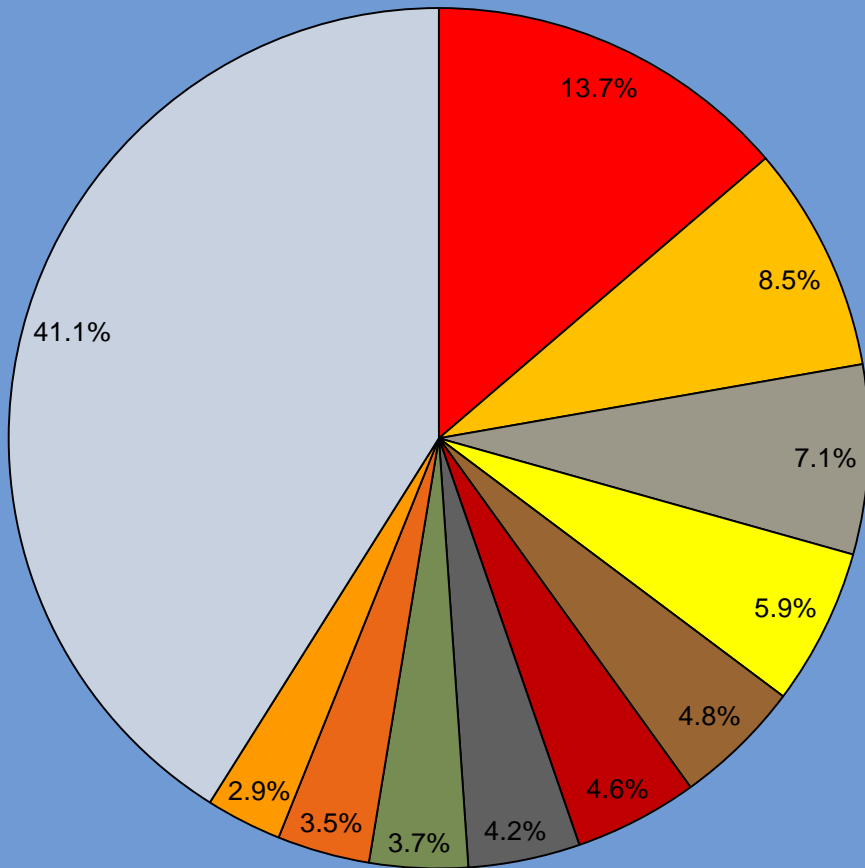
Species Richness

Diversity

Population Characteristics

- % native
- Species at Risk presence/absence
- Habitat preference
- Food preference

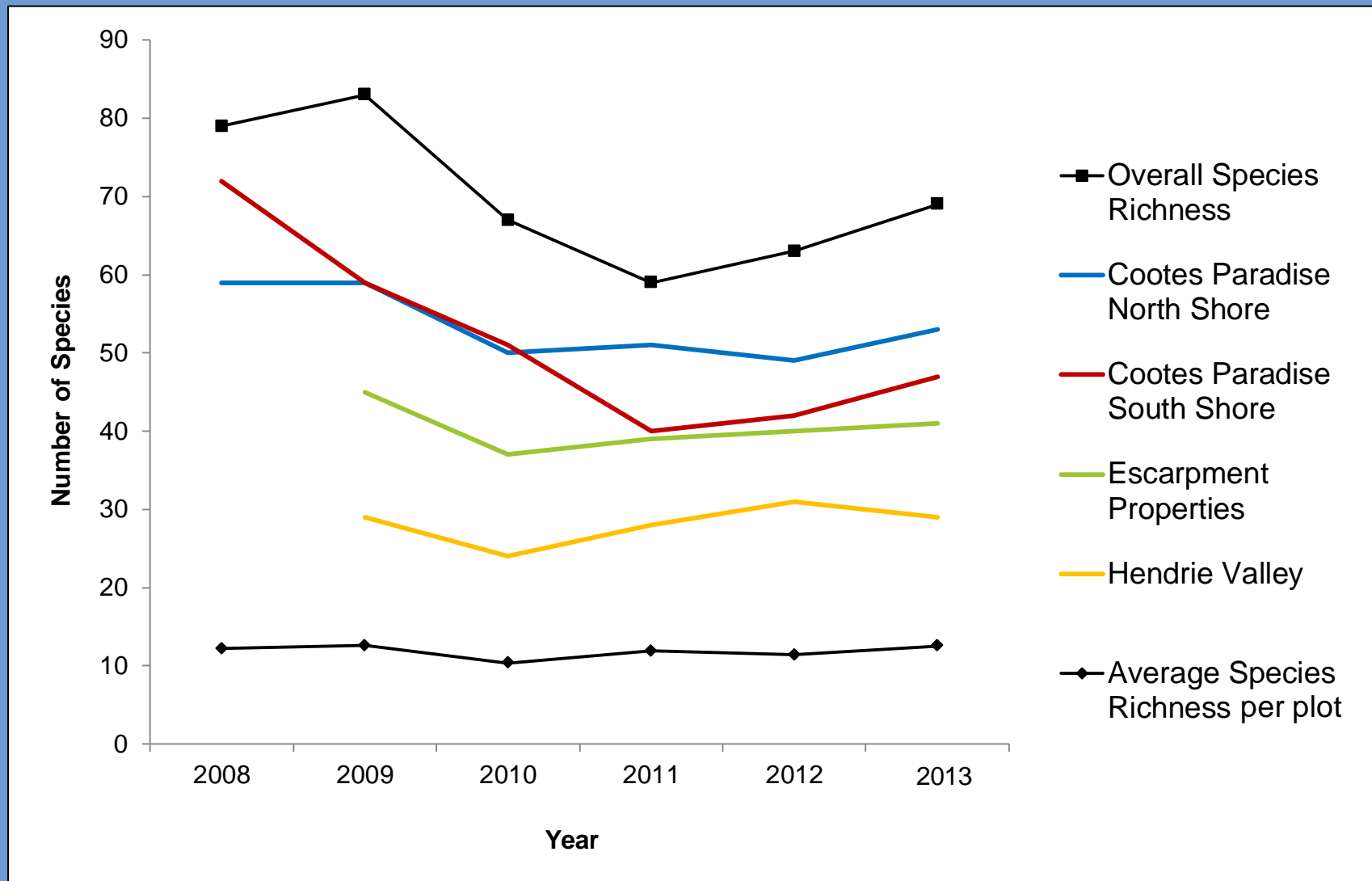
Species Abundance 2013



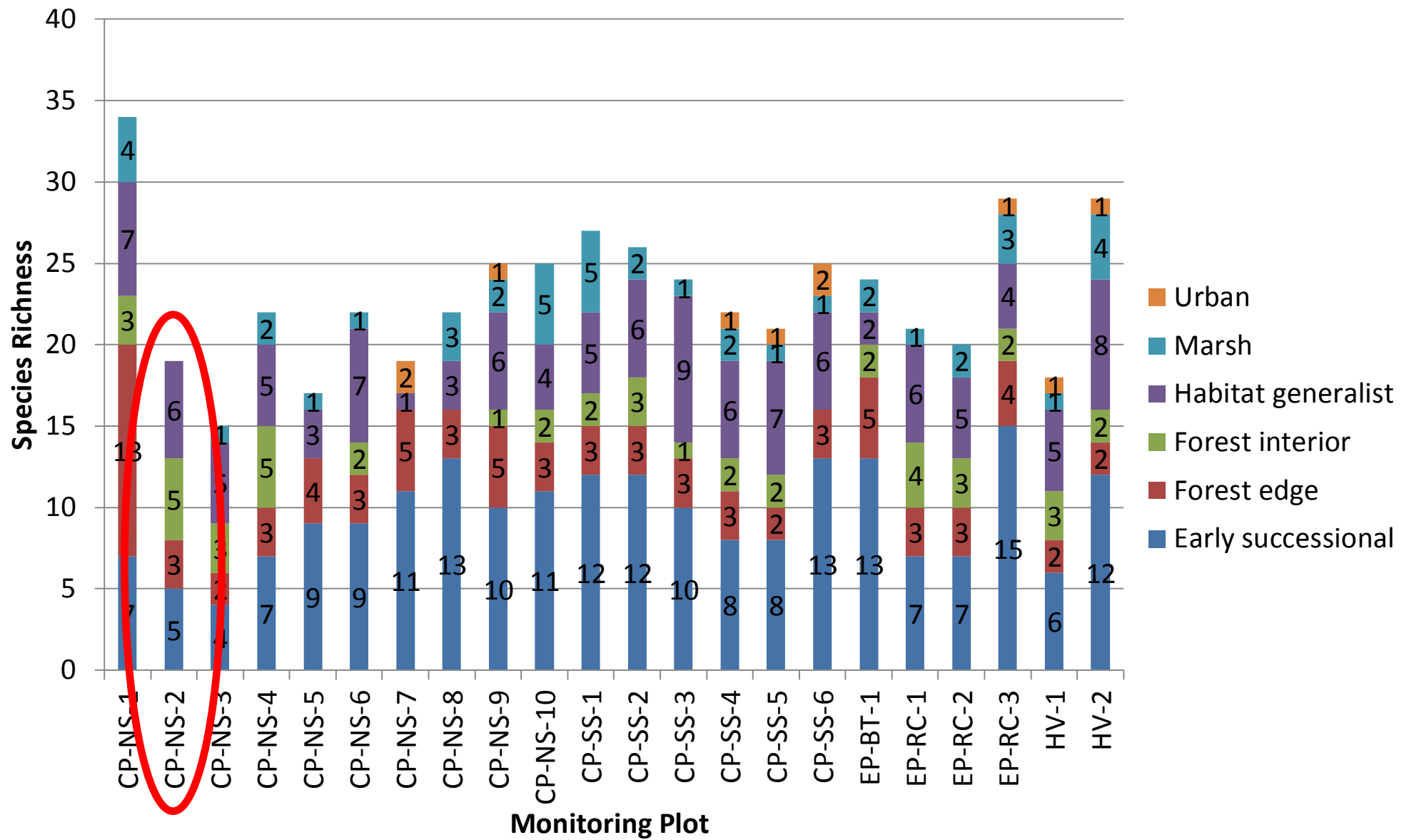
- Red-winged Blackbird
- Yellow Warbler
- Cedar Waxwing
- American Goldfinch
- Song Sparrow
- Northern Cardinal
- Black-capped Chickadee
- Red-eyed Vireo
- American Robin
- Baltimore Oriole
- Other



Species Richness Trends 2008-2013



Population Characteristics – Habitat Preference





Monitoring Results

Dominant Species

Abundance

Species Richness

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- % native
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SAR Birds Detected During Breeding Bird Point Count Monitoring – 2008-2013

Acadian Flycatcher

Endangered

Barn swallow

Threatened

Chimney swift

Threatened

Hooded Warbler

Special concern

Eastern Wood-Pewee

Special concern (only federal)

Wood Thrush

Threatened (only federal)



Wood Thrush

Designated **Threatened** in November 2012.

In Canada, this forest-nesting species has shown significant declines in population abundance.

The species is threatened by habitat loss on its wintering grounds and habitat fragmentation and degradation on its breeding grounds.

It also suffers from high rates of nest predation and cowbird parasitism.

Wood Thrushes were detected at 8 out of 22 monitoring plots this year.

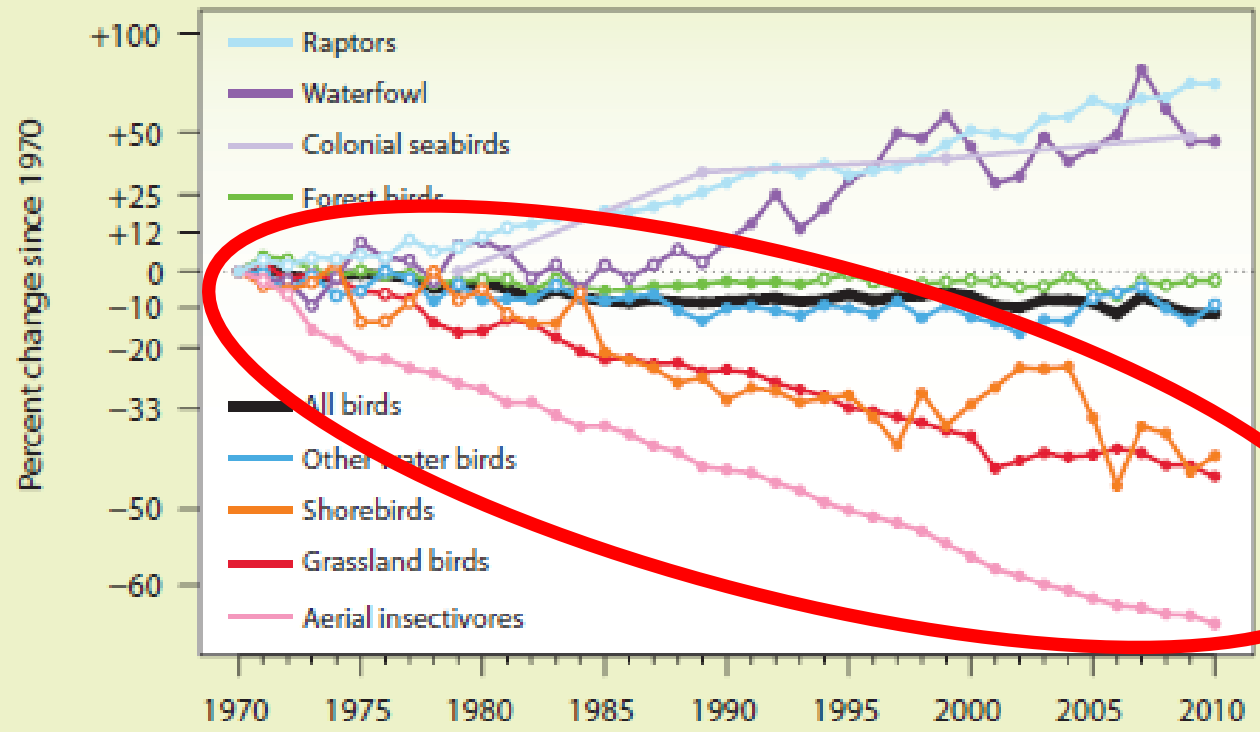
EP-RC-1, located on the talus slope of the Niagara Escarpment, has consistently had the highest number of individuals to date.

Three monitoring plots contained both Wood Thrush and Brown-headed Cowbird.



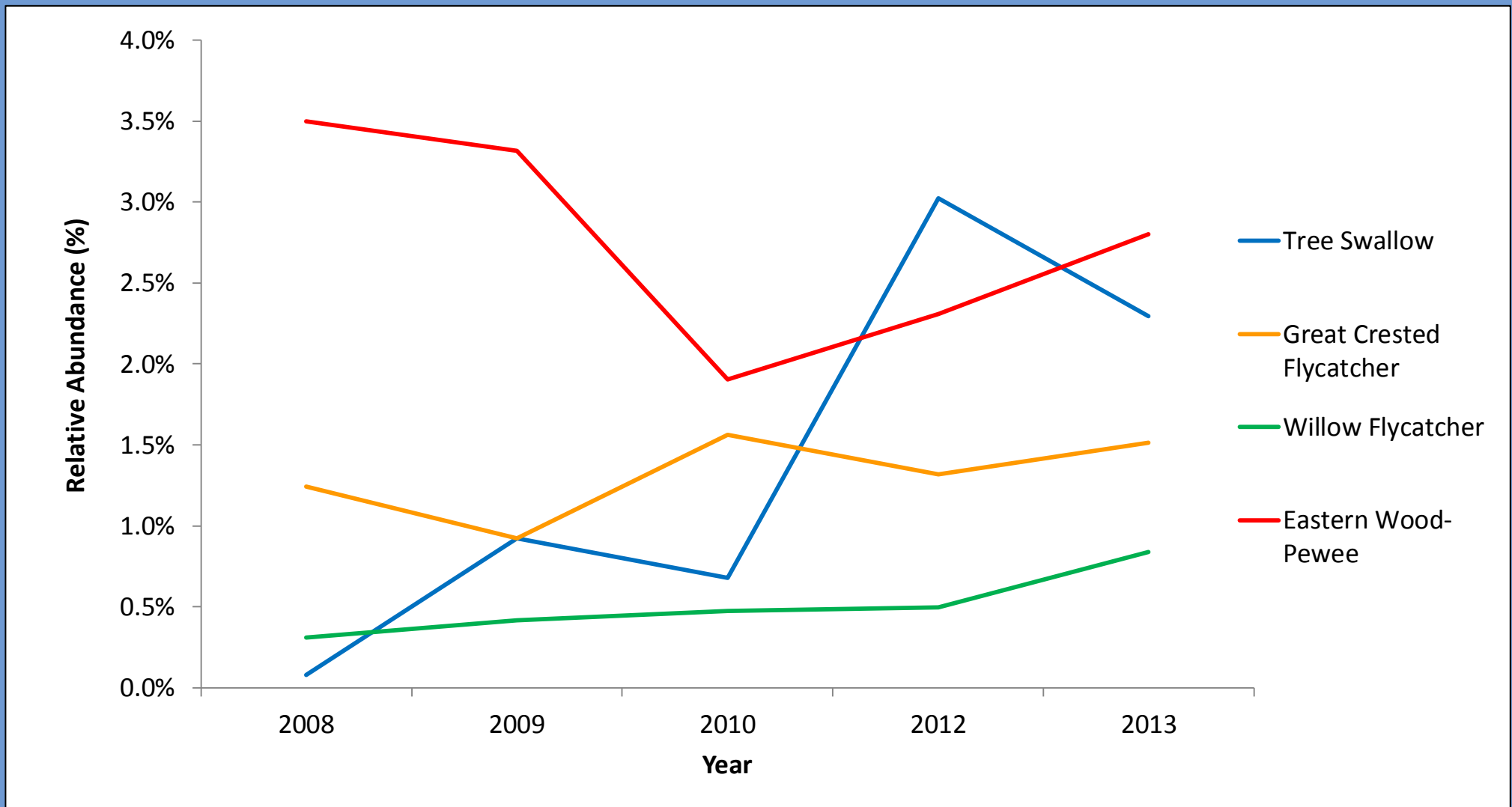
Grassland birds and aerial insectivores, birds that catch insects in flight, are declining steeply.

National Trends



Indicators of the national population status of all regularly occurring native bird species in Canada and eight selected subgroups.

Aerial insectivores





Additional Species at Risk Monitoring 2013

Additional Surveys for specific Species at Risk were undertaken in 2013 by searching their habitat.

- **Louisiana Waterthrush** x
- **Acadian Flycatcher** ✓
- **Eastern Meadowlark** ✓
- **Bobolink** ✓
- **Chimney Swift** ✓
- **Barn Swallow** ✓
- **Bald Eagles** ✓

2014 SAR Monitoring will include habitat searches for:
Least Bittern, Yellow Rail, Black Tern and Prothonotary Warbler

Projects for SAR Birds at RBG ...



Acadian Flycatcher
Endangered



Forest Interior Habitat

Long Valley Monitoring Plot

Forest interior birds detected since 2008 during the breeding season:

- Hairy Woodpecker
- Pileated Woodpecker
- Red-bellied Woodpecker
- Pine Warbler
- Red-eyed Vireo
- Ovenbird
- Brown Creeper
- Scarlet Tanager
- Wood Thrush
- Winter Wren
- **Acadian Flycatcher**

This project was undertaken with the financial support of:



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Protecting Interior Forest from Invasive Plants

*RBG Interior Forest:
Old growth deciduous and mixed forest with ephemeral pools, large regions of interior forest and steep-sloped wooded ravines. Also home to plant and animal species at risk.*

Goal: protect habitat for forest interior birds, such as the Acadian Flycatcher, by removing invasive plants and keeping them out of the interior forest.

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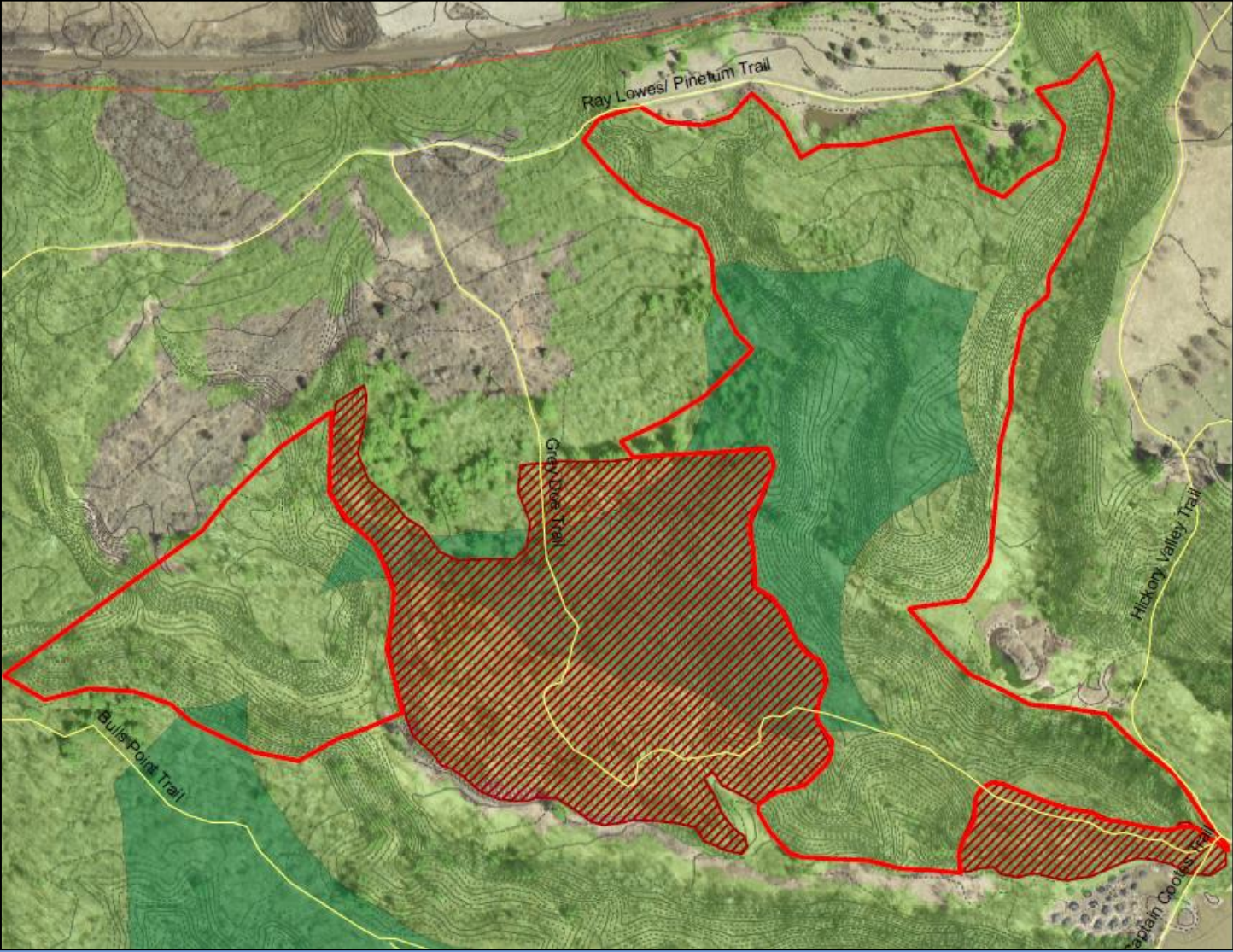
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Expanding Invasive Plant Removal from Long Valley to Hickory Valley



- RBG TRAILS
- 2013
- 2012
- FOREST INTERIOR
- FOREST COVER

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Additional RBG Objectives Related to Acadian Flycatcher Recovery:

- Coordinate best practices for Species-at-Risk recovery among professionals
- Promote stewardship within the community
- Raise public awareness of the declining populations of aerial insectivores by creating an educational poster
- Survey and map RBG interior forest habitat using Ecological Land Classification

These project activities will help gain critical species and habitat information, promote stewardship and, most importantly, improve habitat for the Acadian Flycatcher.



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Thank You

Questions?

Lindsay Barr

Terrestrial Ecologist

lbarr@rbg.ca

Photo credit: Dave d'Entremont



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