Occupancy of Rusty Blackbirds (*Euphagus carolinus*) in the Adirondack Region of New York State

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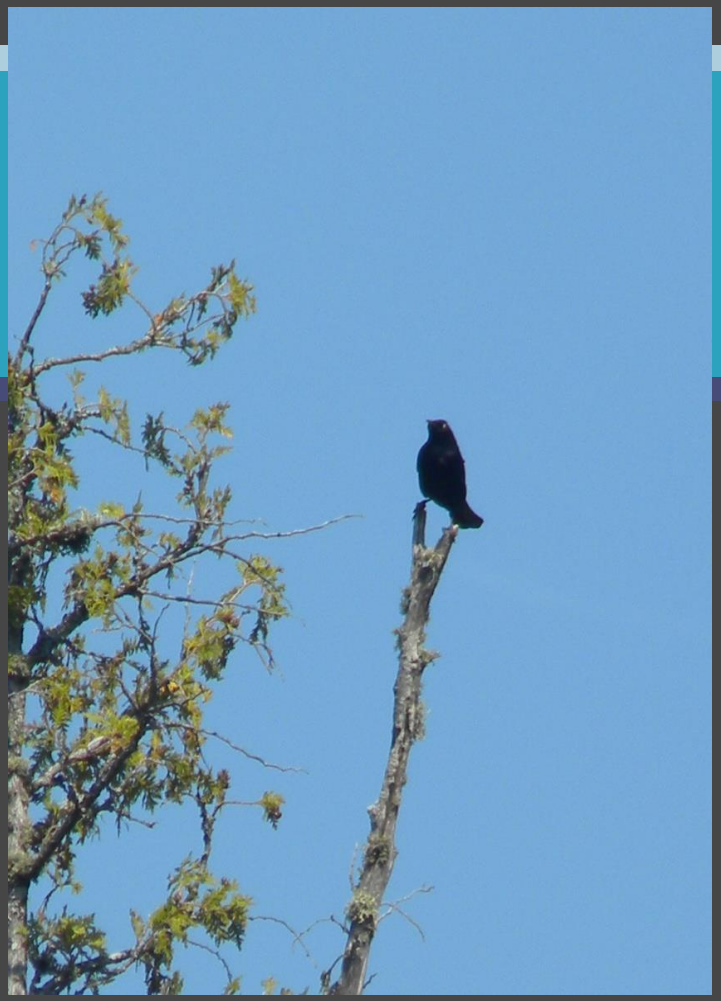


The Adirondack Region of New York State

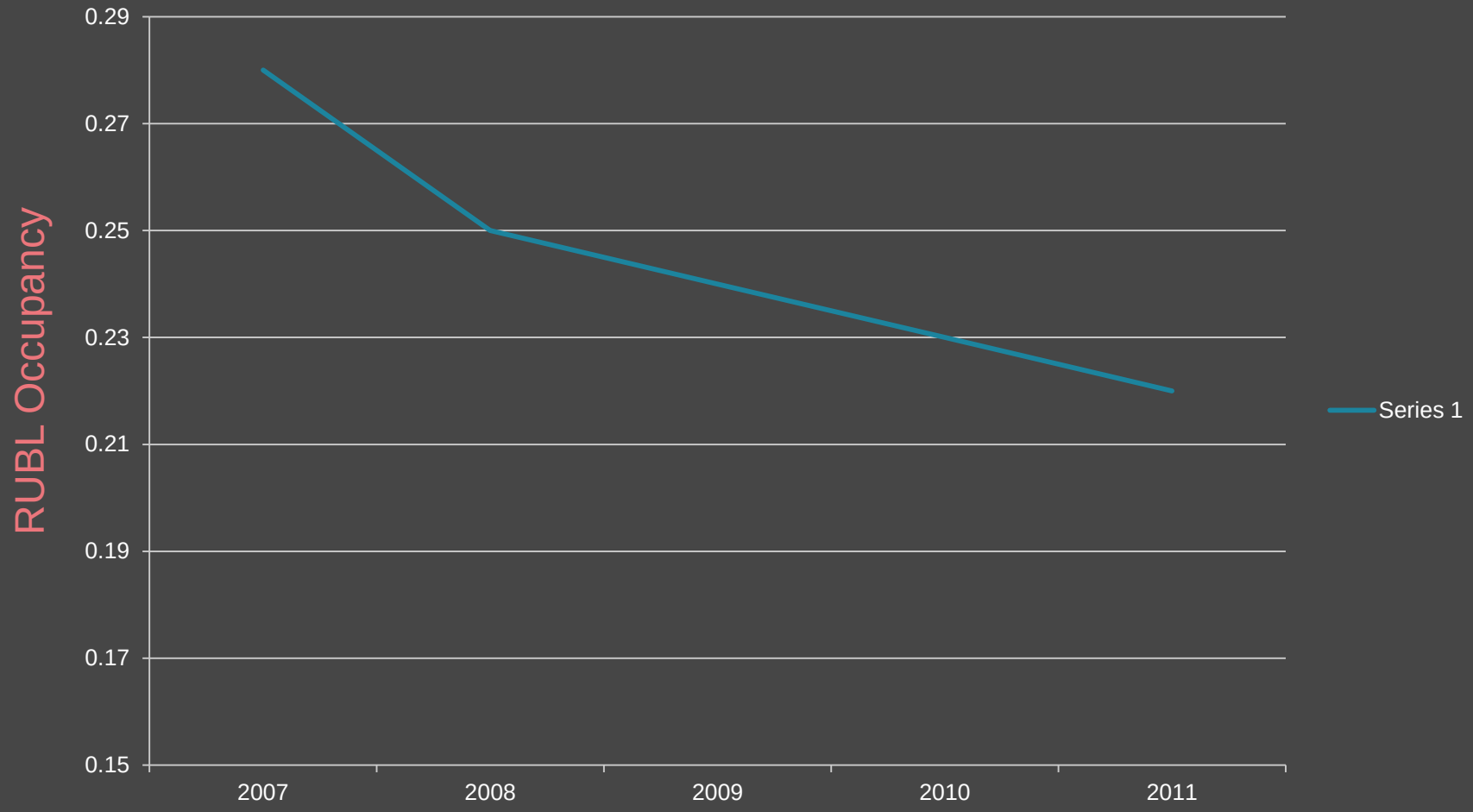
- A 6 million acre park protected by the state constitution, about half of which is state forest preserve kept forever wild
- The other half is under private ownership and open to varying land uses
- Contains thousands of acres of boreal wetlands, home to many boreal species at the

Rusty Blackbirds in the Adirondacks

- Historical records indicate that they were once much more abundant than they are today
- The best scientific data comes from the NYS Breeding Bird Atlases conducted in 1980-1985 and 2000-2005
- Between the 2 atlases there was a 23% decline in the number of atlas blocks with possible breeding RUBL
- Study on boreal bird species conducted by WCS between 2007-2011 shows a decline in the species based on standard point counts

Rusty Blackbird Occupancy in the Adirondacks 2007-2011

Wildlife Conservation Society, unpublished data



Research Goals

- Create a baseline of data for RUBL distribution in the Adirondack Park
- Expand search beyond wetlands included in the WCS study and improve detection methods
- Identify which factors at the habitat and landscape scale are positively correlated with RUBL occupancy
- Identify which wetlands have the highest likelihood of RUBL occupancy to determine which wetlands should have the highest priority for the species' conservation

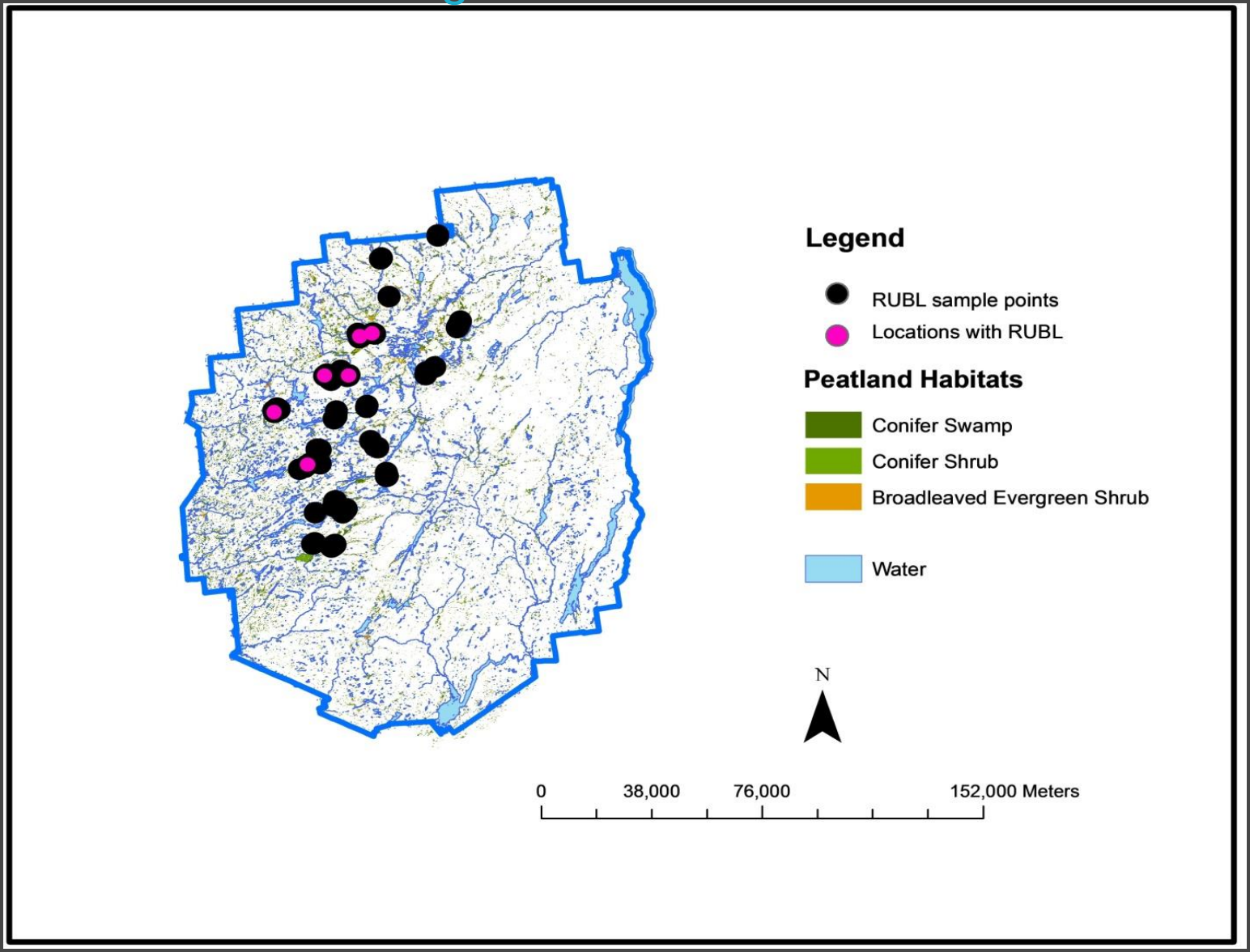
Methods

- Conducted surveys at 75 points within 15 wetland complexes
- Point counts were conducted on foot or by boat using the RUBL Monitoring Protocol of 7 minute surveys using playback recording at 3 min
- Each point was surveyed twice between May 13th and June 15th in 2010
- Occupancy was modeled as a function of site-specific and sampling covariates using single-season analysis in the program PRESENCE

Occupancy Results

- Rusty Blackbirds were detected on 8 out of 148 surveys at 6 of the 74 points (naïve occupancy= 0.11)
- A total of 15 individuals were recorded, including a pair with two fledglings at Spring Pond Bog
- The best-fitting models had an estimated mean occupancy of 0.13 ± 0.05 SE and a mean detectability of 0.54 ± 0.18 SE

Sites surveyed for Rusty Blackbirds in the Adirondack Region of New York State in 2010



Model Results

- Due to small sample size the best fitting model was the null model, but all models received some support
- Only single-covariate models were used
- Temperature was the best-fit model for detectability and was used in all occupancy models

Site-Scale Model Results

- Positive Correlation:
  - White Cedar
  - Pine spp.
  - Mud
  - Speckled Alder
- Negative Correlation:
  - Heath spp.
  - Sphagnum spp.

Examples of RUBL Habitat

Spring Pond Bog

Dead Creek

Landscape Model Results

- Positive:
  - 5km-10km
    - Boreal Acidic Peatland
    - Conifer Swamp
    - Open Bog
- Negative:
  - 500m-
    - Open Bog

Site Occupancy

Wetland complexes with the highest likelihood of RUBL occupancy:

- Based on site-scale characteristics:
  - Massawepie Mire
  - Bloomingdale Bog
  - Shingle Shanty Preserve
- Based on landscape-scale characteristics:
  - Bloomingdale Bog
  - Massawepie Mire

So why aren't Rusty Blackbirds found in all of these wetlands?

Hypothetical Reasons:

Acidification of wetlands

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Reduced aquatic invertebrate populations

Climate change

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Changing wetland hydrology

Ranges shifting north

Exurban Development

- Fragmentation of wetland complexes
- Degradation of habitat due to reduced buffers, changing water levels

- Increased predation
- Increased competition with other Icterid species
- Fewer foraging areas

•Adirondack land classifications create a complicated landscape for preserving the park's largest wetlands

Further Research Needs

- Long-term monitoring to determine if and where RUBL extinctions are occurring
- Ecosystem-scale research monitoring changes in hydrology, water quality, prey populations where local extinctions have occurred
- Landscape-scale research to monitoring exurban development in relation to RUBL extinctions in adjacent wetlands
- Long-term monitoring of other boreal species whose ranges are contracting

Can the Adirondack Population be saved??

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