



# Community Science Bird Monitoring

## Miller Bird Refuge

### 2022 Results



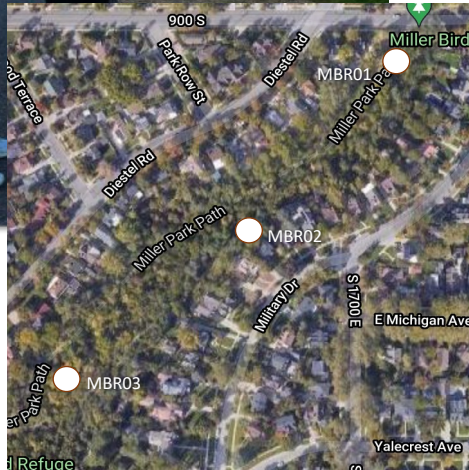


# STUDY GOALS

- 1) Collect data on the avian community to establish a baseline understand the birds that occur in the refuge
- 2) Determine how the bird community is changing over time
- 3) Provide recommendations for how the city and surrounding residence can enhance the bird habitat in the refuge

# BIRD SURVEY METHODS

## Breeding Season Point Count Surveys (April – July)



## Non-breeding Season Group Surveys (August – March)



## Owl Surveys (February – May)

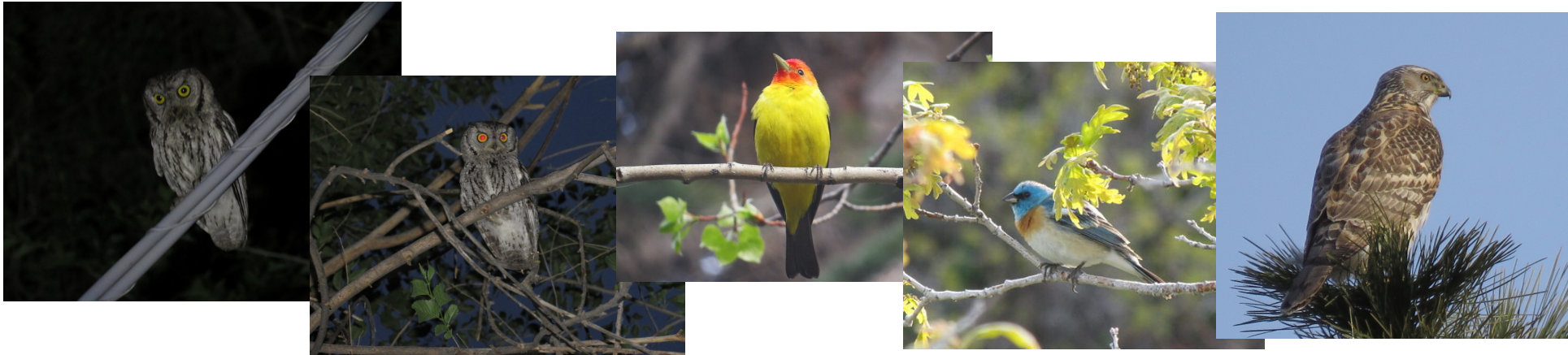


# 2022 RESULTS

**4** Breeding Season Surveys: **103** observations of **24** species

**7** Non-Breeding Season Surveys: **286** observations of **31** species

**2** Owl Surveys: **3** Western Screech Owls observations

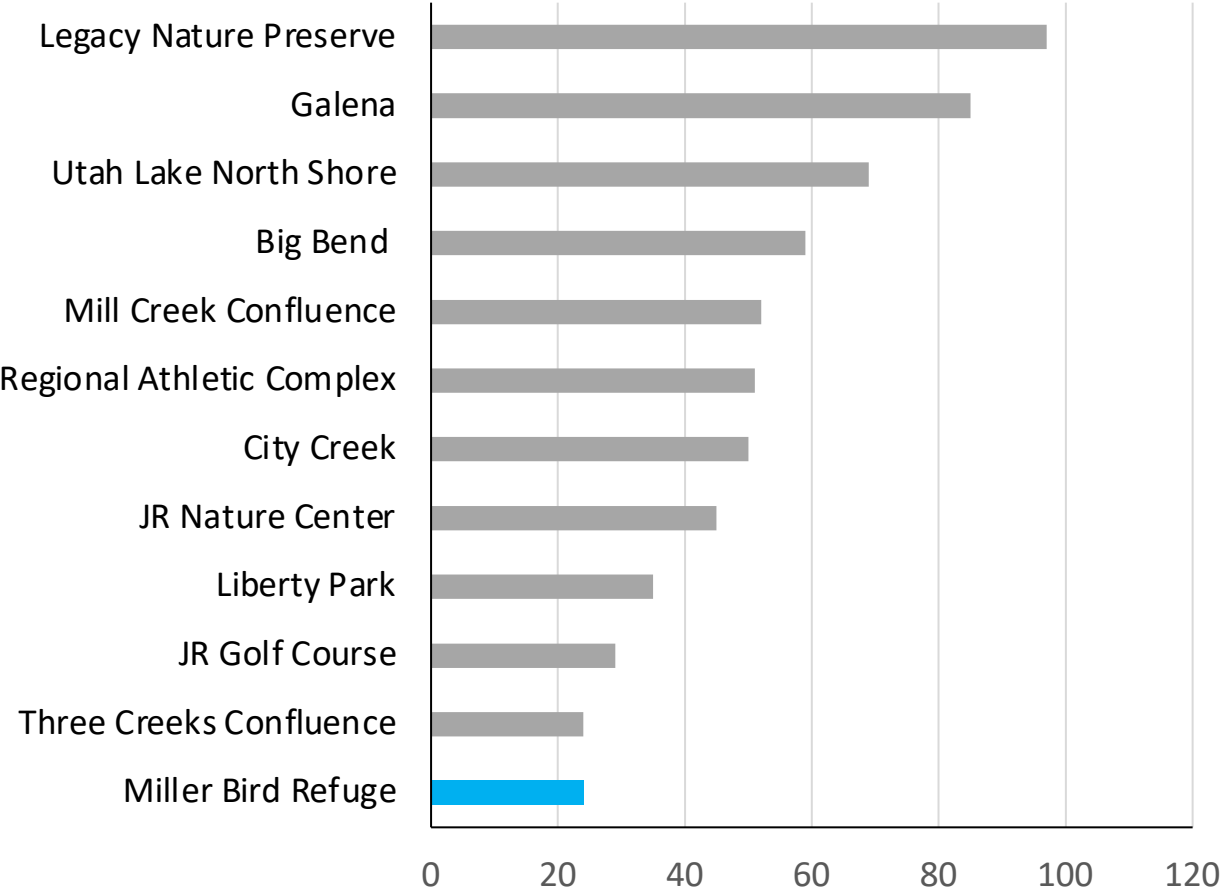


**39** total species during 2022 surveys, last year's data, plus eBird observations = **67** species currently known to use the site

# 2022 RESULTS



## Species Richness (number of species detected)

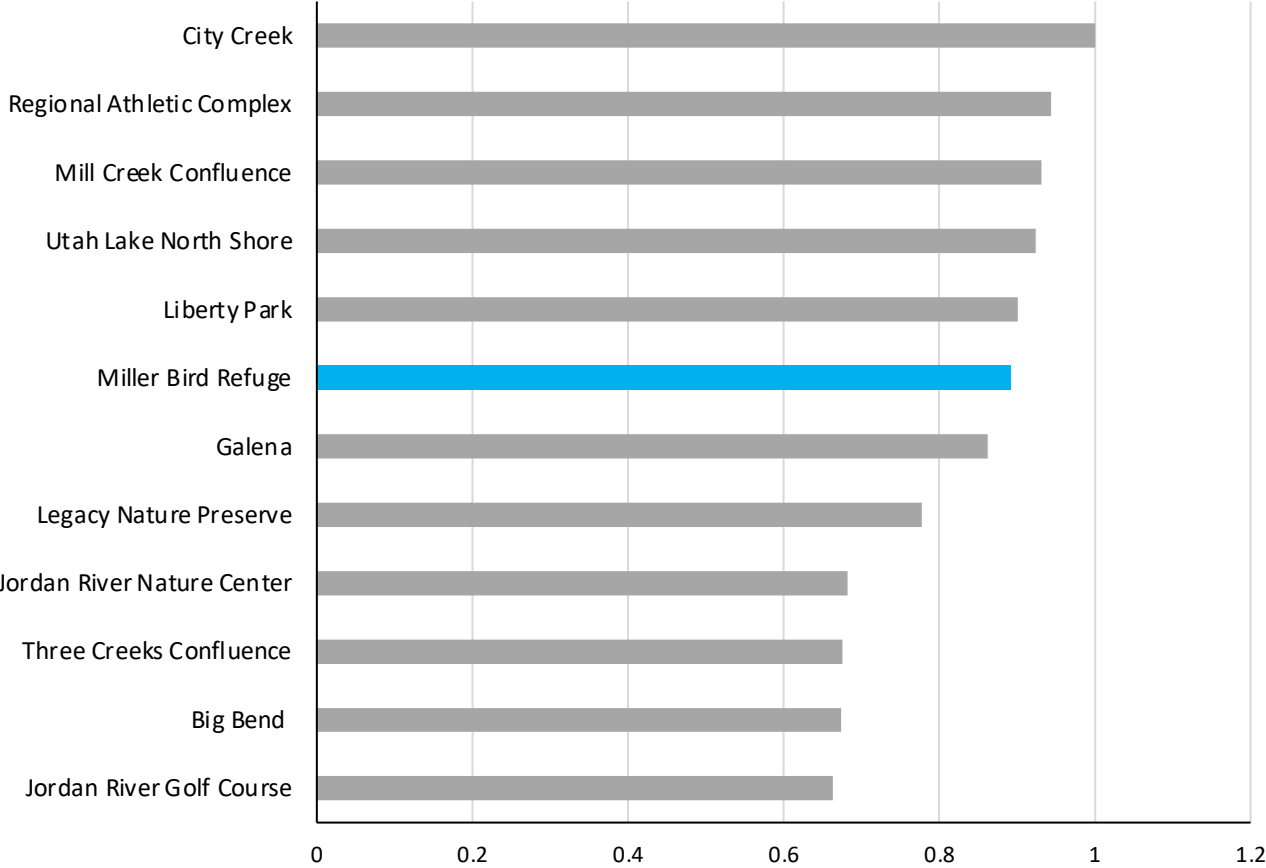




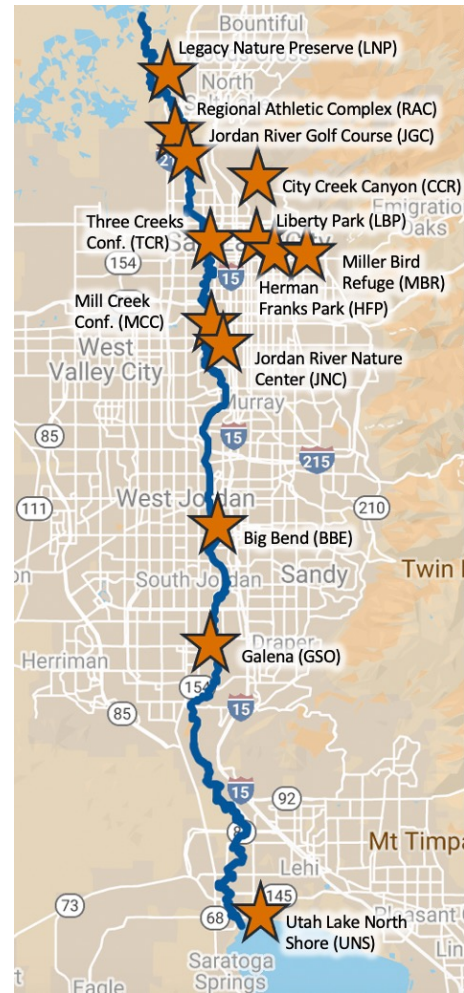
# 2022 RESULTS



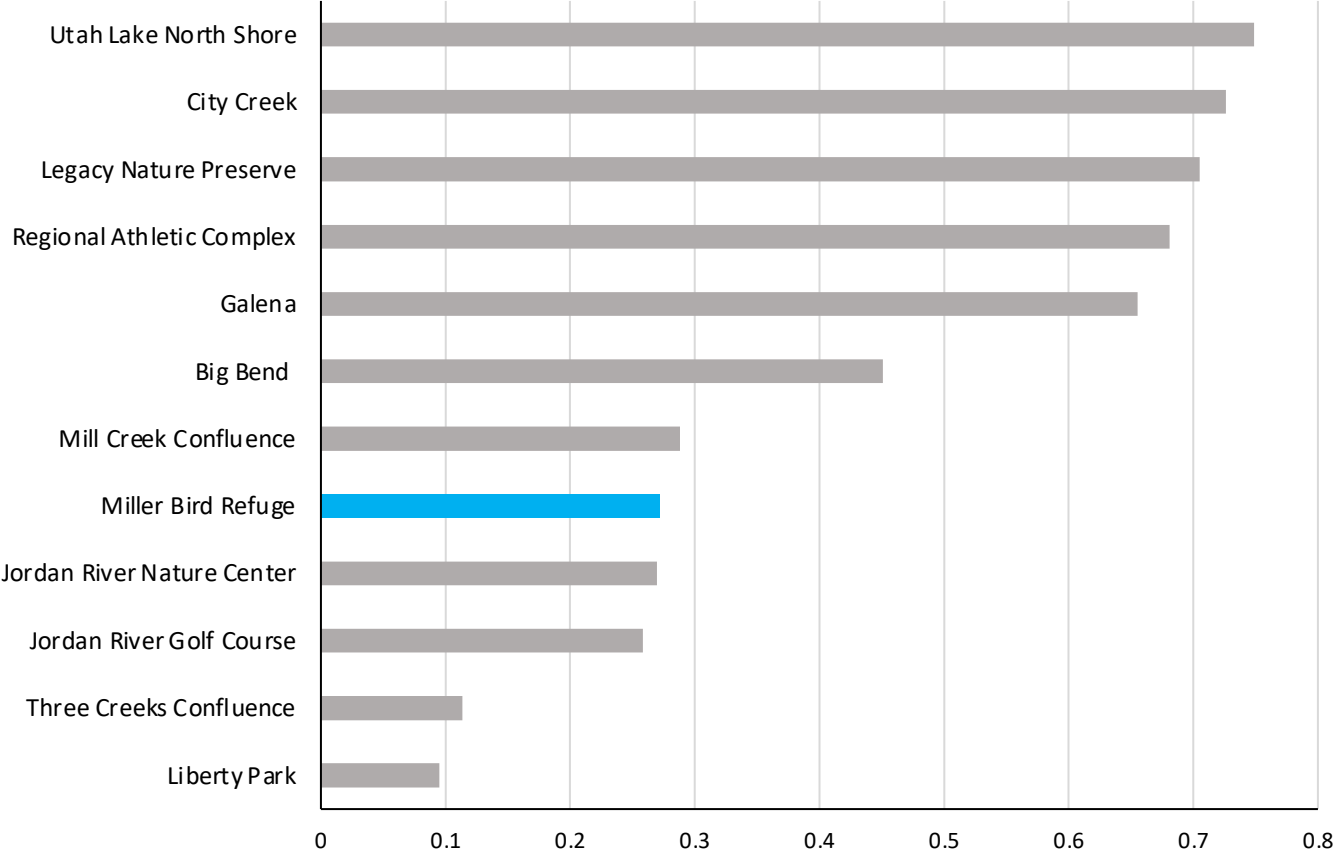
**Native Birds** (proportion of detections that are native species)



# 2022 RESULTS

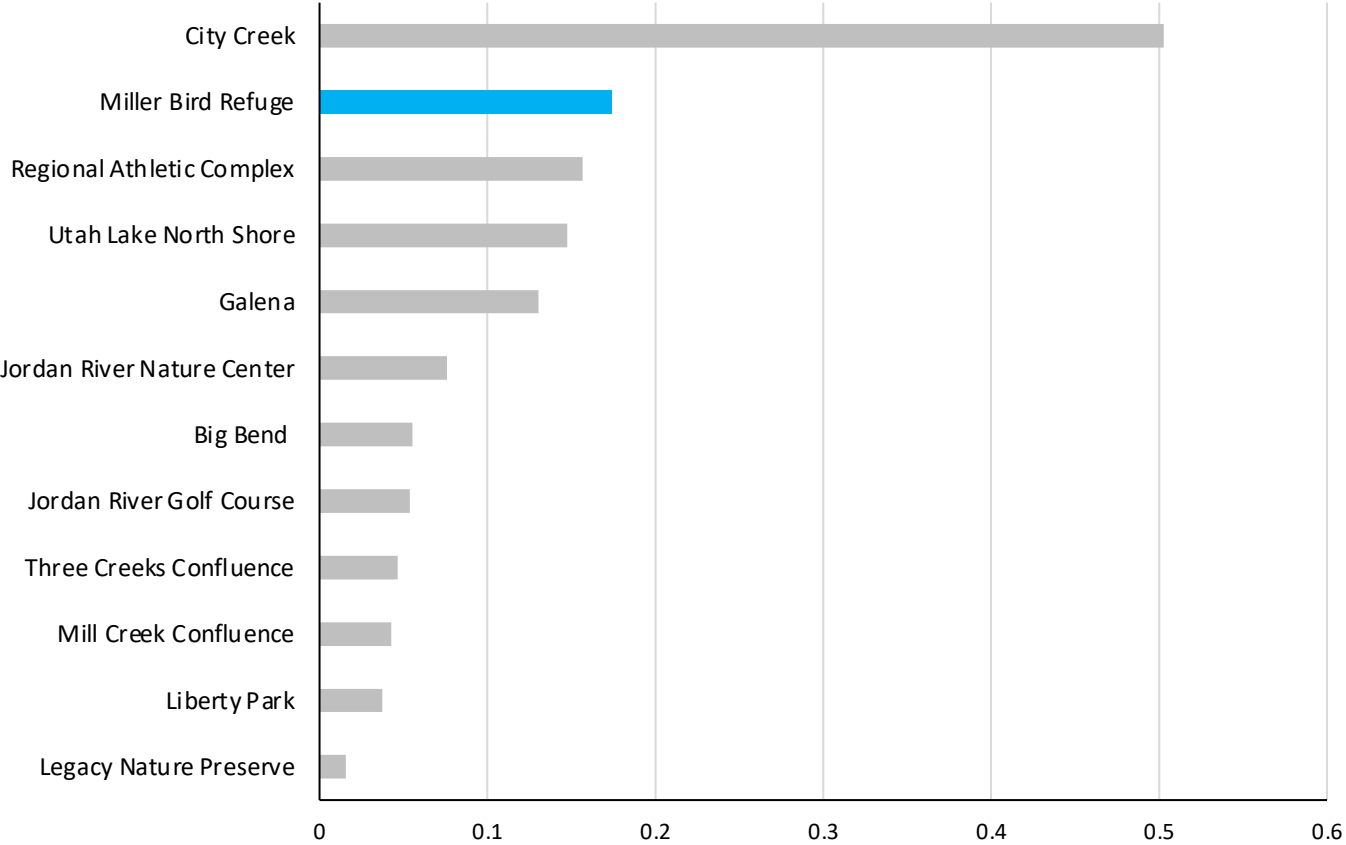


## Urban-sensitive Birds (proportion of detections that are urban-sensitive)



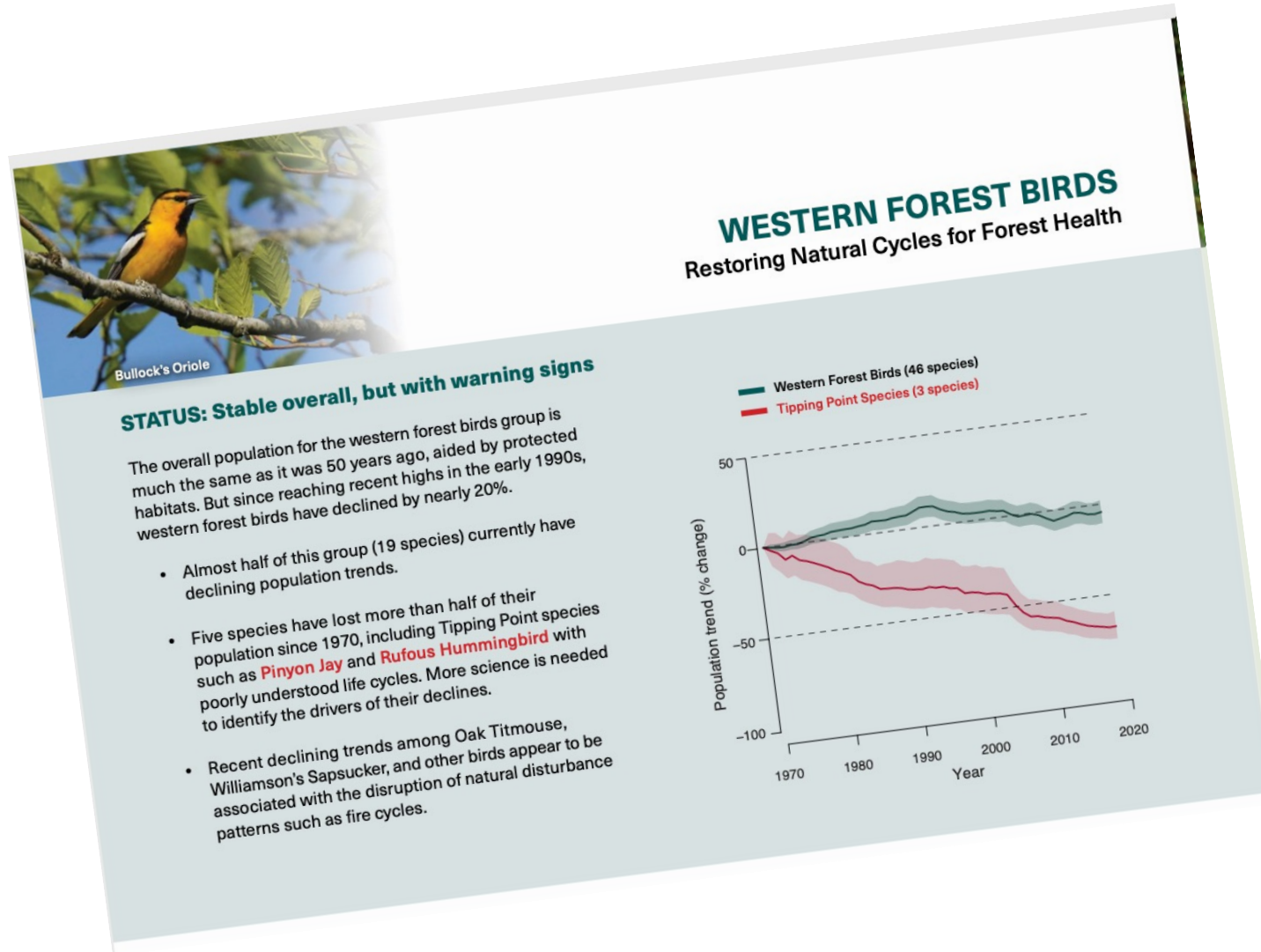
# 2022 RESULTS

**Riparian-Associated** (proportion of detections that birds who rely on riparian habitat for nesting)





# 2022 RESULTS – Larger Conservation Context



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## Broad-tailed Hummingbird



- Using Miller as stopover habitat on way to higher elevation breeding area
- Declining; cumulative decline of 45% between 1966 and 2019
- Climate; less overlap with nectar sources, window strikes, collisions with cars



# 2022 RESULTS – Larger Conservation Context

## Warbling Vireo



- Using Miller as breeding habitat
- Stable populations
- Vulnerable to degradation to streamside habitat, window collisions

# 2022 RESULTS – Larger Conservation Context

## Dark-eyed Junco



- Using Miller as wintering habitat
- Declining; cumulative decline of 31% between 1966 and 2019
- Climate change, habitat loss, window collisions, cat predation



# HEALTH OF THE BIRD COMMUNITY

Factors that may influence population or habitat use trends for birds in the area:

- Local habitat conditions in the park
- Habitat conditions in the surrounding neighborhood
- The presence of other animals, especially non-native and domestic species
- Conditions at larger scales



# Enhance Miller Bird Refuge as Bird Habitat

- Keep dogs on leash and cats indoors
- Stay on designated trails
- Maintain bird-friendly yards and gardens in the surrounding neighborhood.
- Maintain water flow in the stream throughout the year
- Protect the vegetation immediately surrounding the stream
- Maintain vertical structure with a variety of native and/or desirable riparian vegetation at the site
- Any tree removal should be done outside of the breeding season (during mid-July - Feb), and in a phased manner rather than "clear-cutting" so large swaths of habitat are not removed all at once.

Join Tracy Aviary's Community Science Team!  
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