Riparian Bird Surveys at Conservation Areas in the Lower Colorado Region

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Background

1. Implement long-term system-wide monitoring of riparian birds
2. Study the effects of habitat restoration measures

Photo Credit : David Vander Pluym

Focal Species

1. Arizona Bell's Vireo
2. Gilded Flicker
3. Gila Woodpecker
4. Sonoran Yellow Warbler
5. Summer Tanager
6. Vermilion Flycatcher

Photo Credit: Bobby Wilcox

Double Sampling Method

Rapid area search surveys (two visits) on each selected plot

- The goal is to obtain estimates of the number of breeding territories over a large sample of area search plots.

Intensive area search surveys (8 visits) on each selected plot

- The goal is to obtain a complete and unbiased measure of all species breeding on the plot.

Photo by David Vander Pluym

Goals

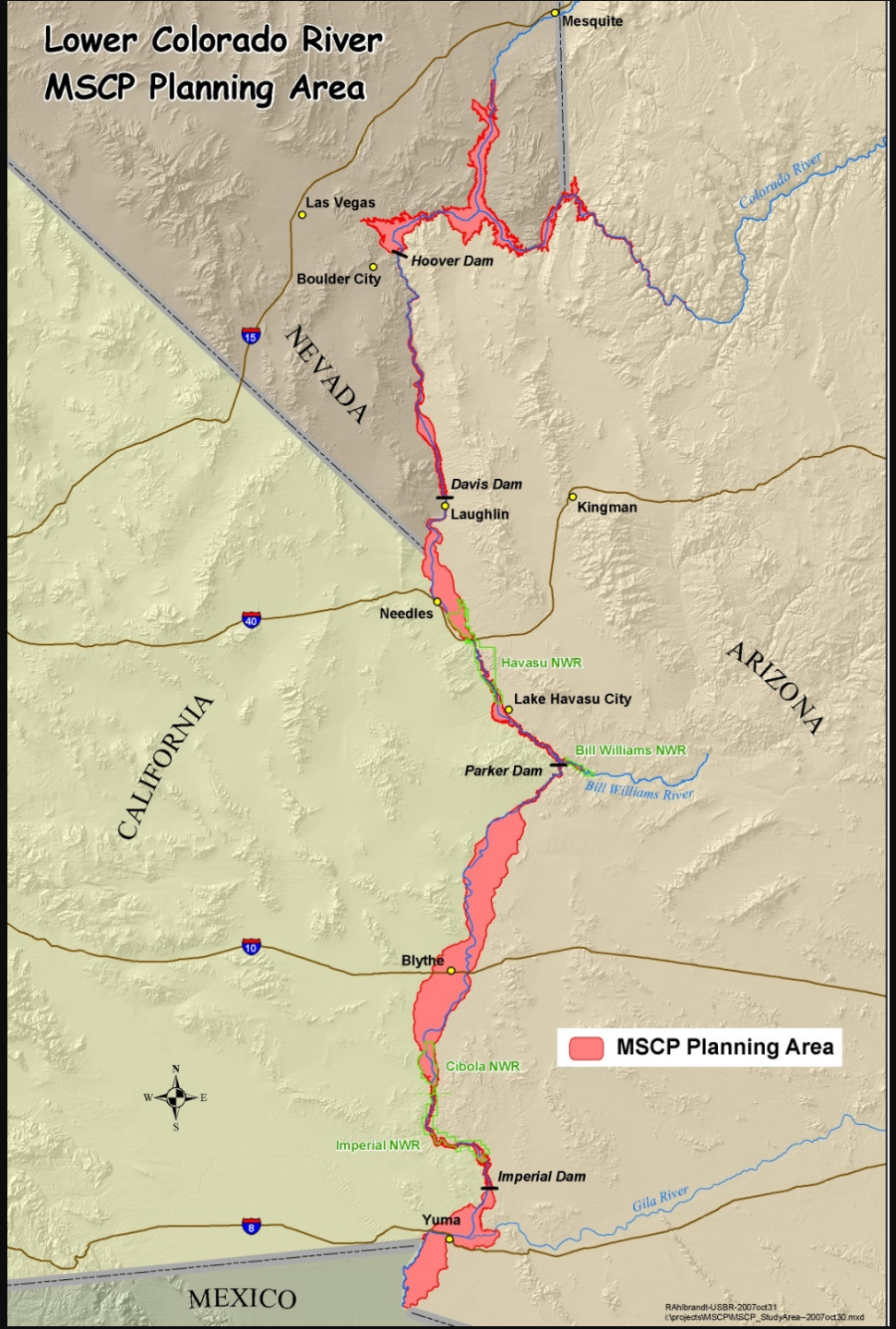
- Determine presence and document breeding territories of riparian birds with emphasis on 6 covered species
- Estimate error in survey data with intensive surveys to eventually calculate population sizes and trends

Study Area/Plot Selection

Plots are selected using a stratified random design

Selected first by conservation area and then by habitat within conservation area

Plots surveyed ranged in size from 4 to 18 hectares (ha)



Plot Distribution 2019

Conservation Areas

Rapid = 81 plots/year

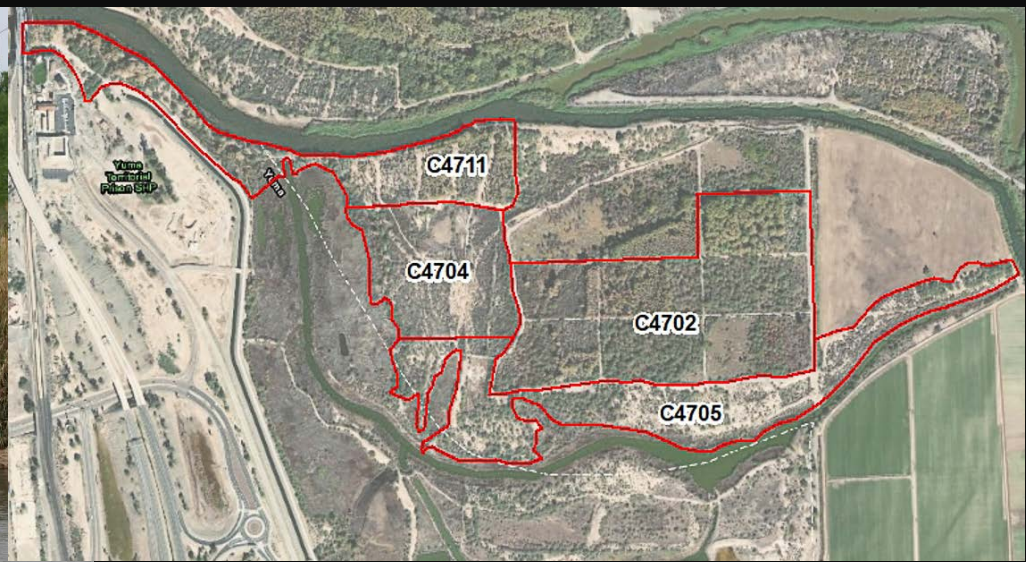
Intensive = 8 plots/year

Plot Breakdown:

Conservation area	# of plots
Beal Lake Conservation Area	2
Middle Bill Williams River NWR East	4
Middle Bill Williams River NWR West	10
Cibola National Wildlife Refuge Unit #1 Conservation Area	10
Cibola Valley Conservation Area	14

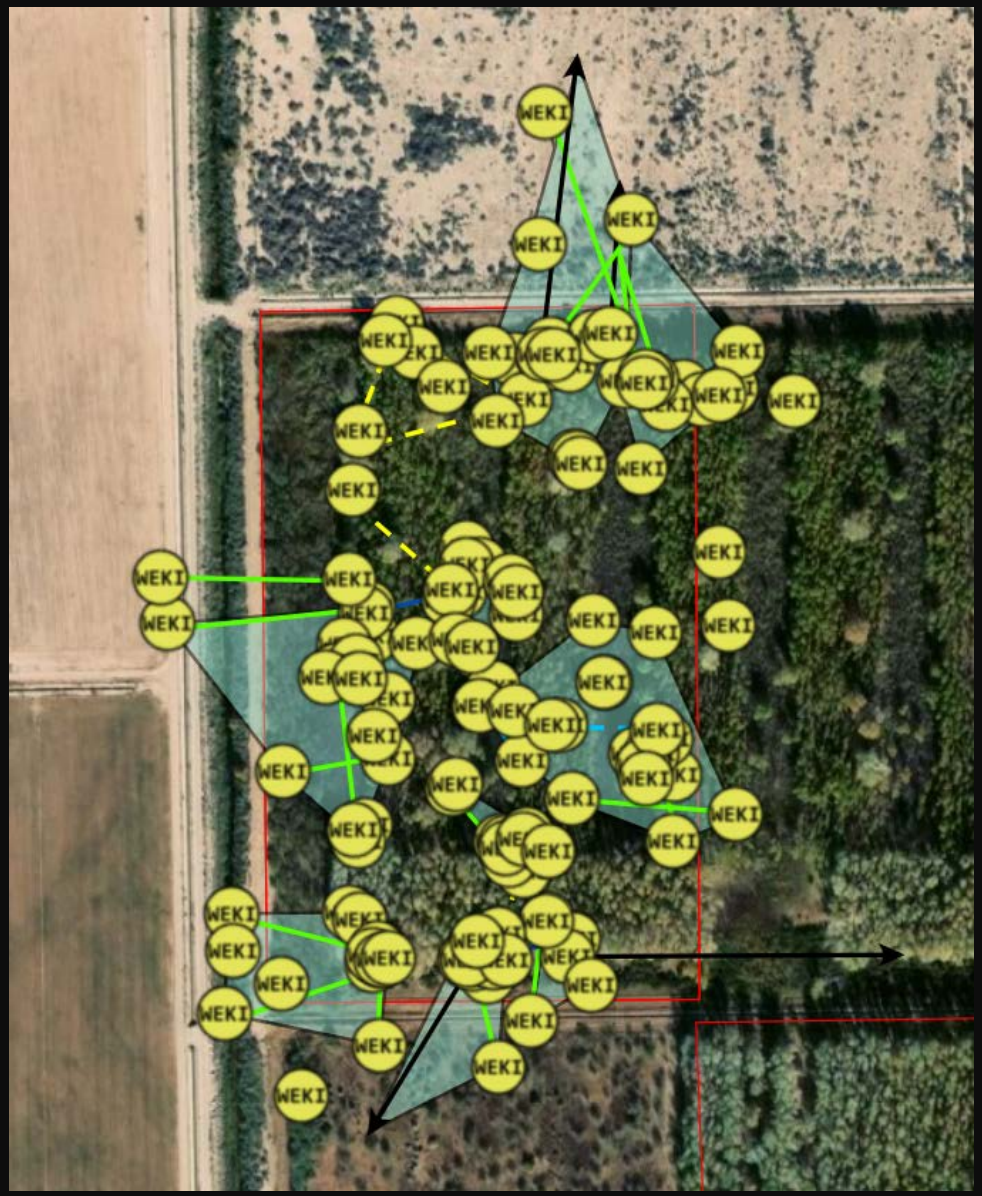
Plot Breakdown Continued:

Conservation area	# of plots
Hunters Hole	1
Laguna Division Conservation Area	10
Palo Verde Ecological Reserve	15
Parker Dam Camp	2
Pretty Water Conservation Area	9
Yuma East Wetlands	4



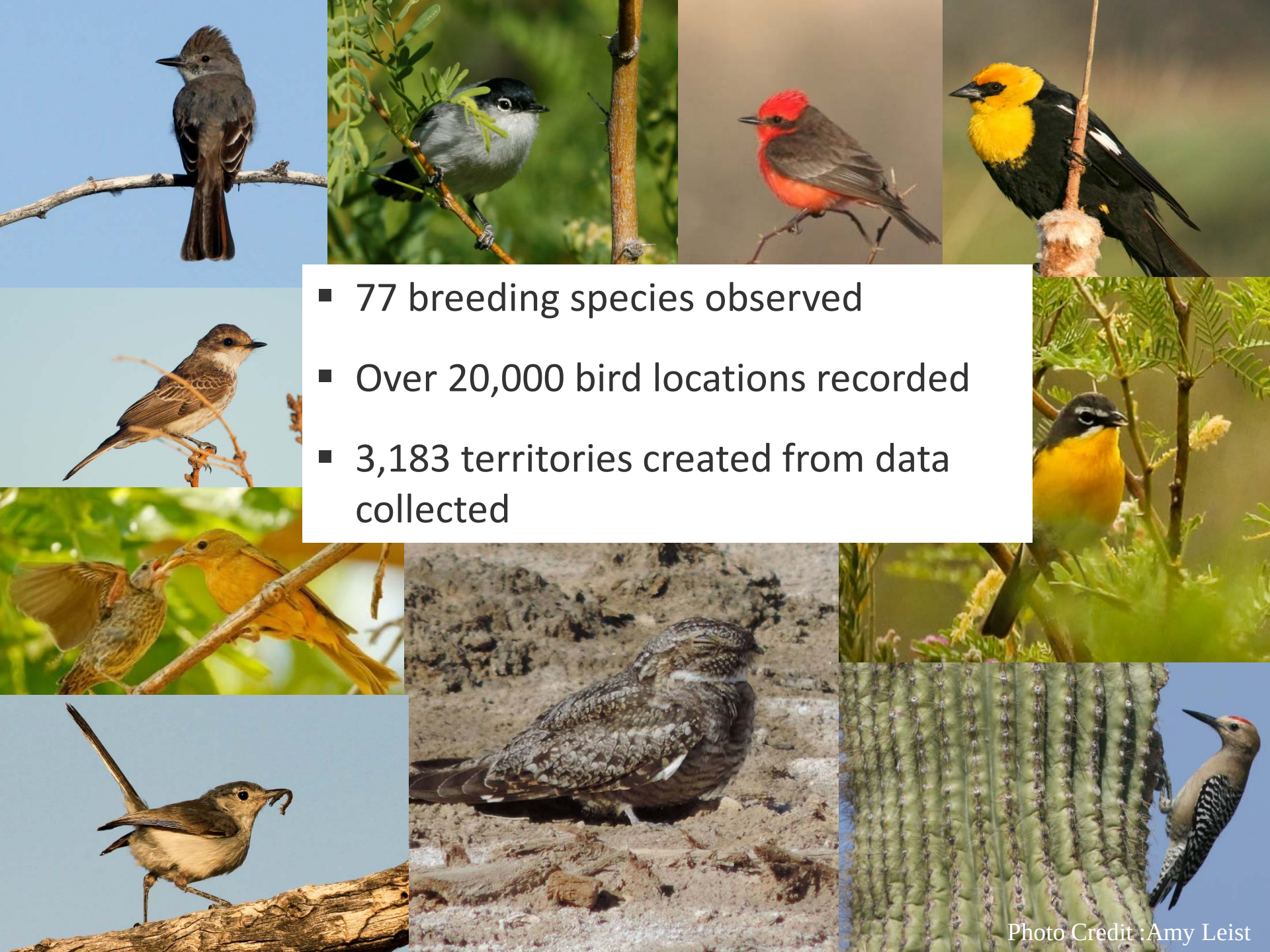
Survey Methods

- Surveys are conducted using area search method
- Begin at sunrise and last several hours
- Surveyed systematically passing within 50m of all points on plot
- Surveyor identifies and maps all territorial breeding birds



Sample of an intensive plot with territory mapping

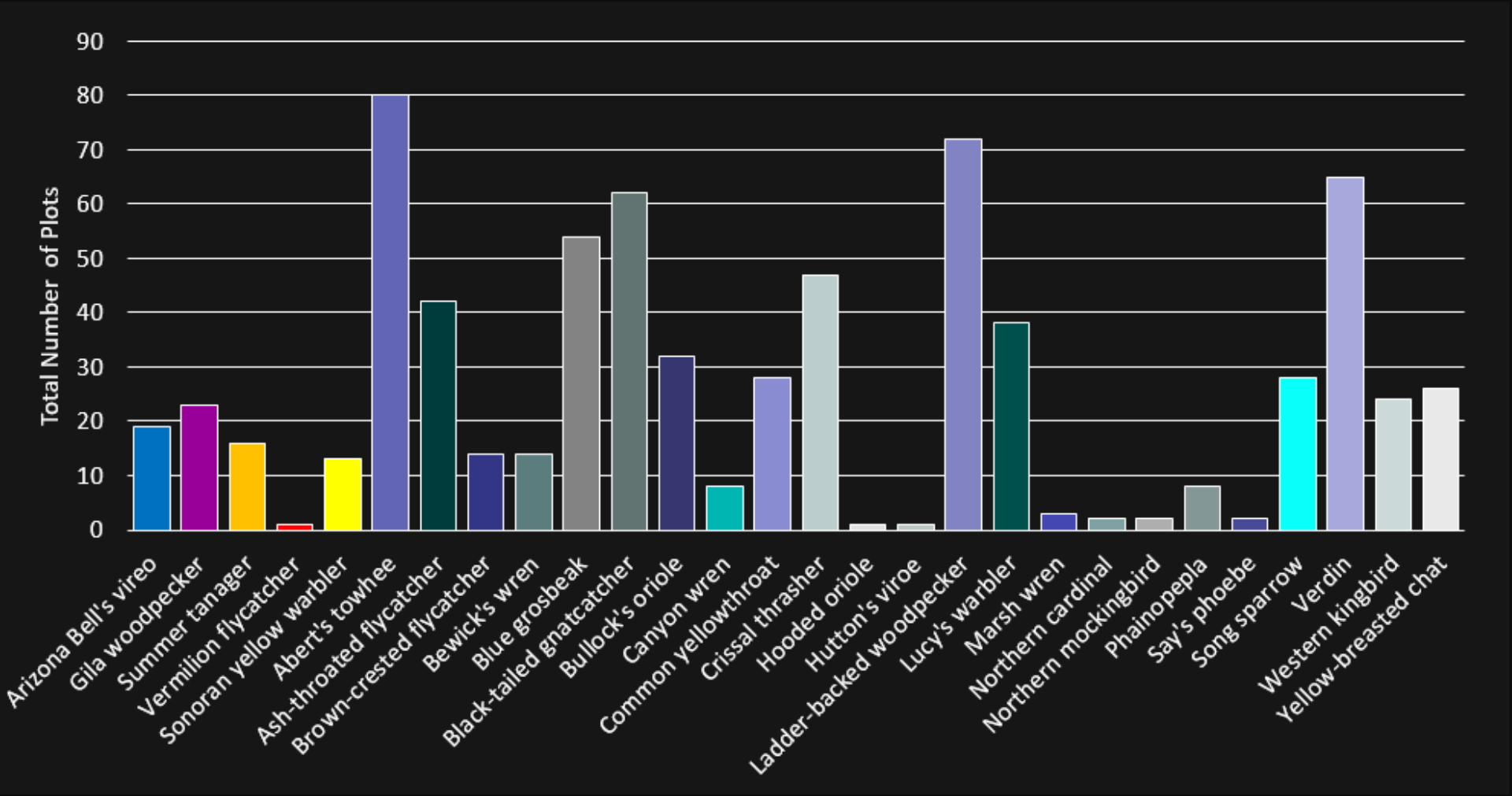
Results



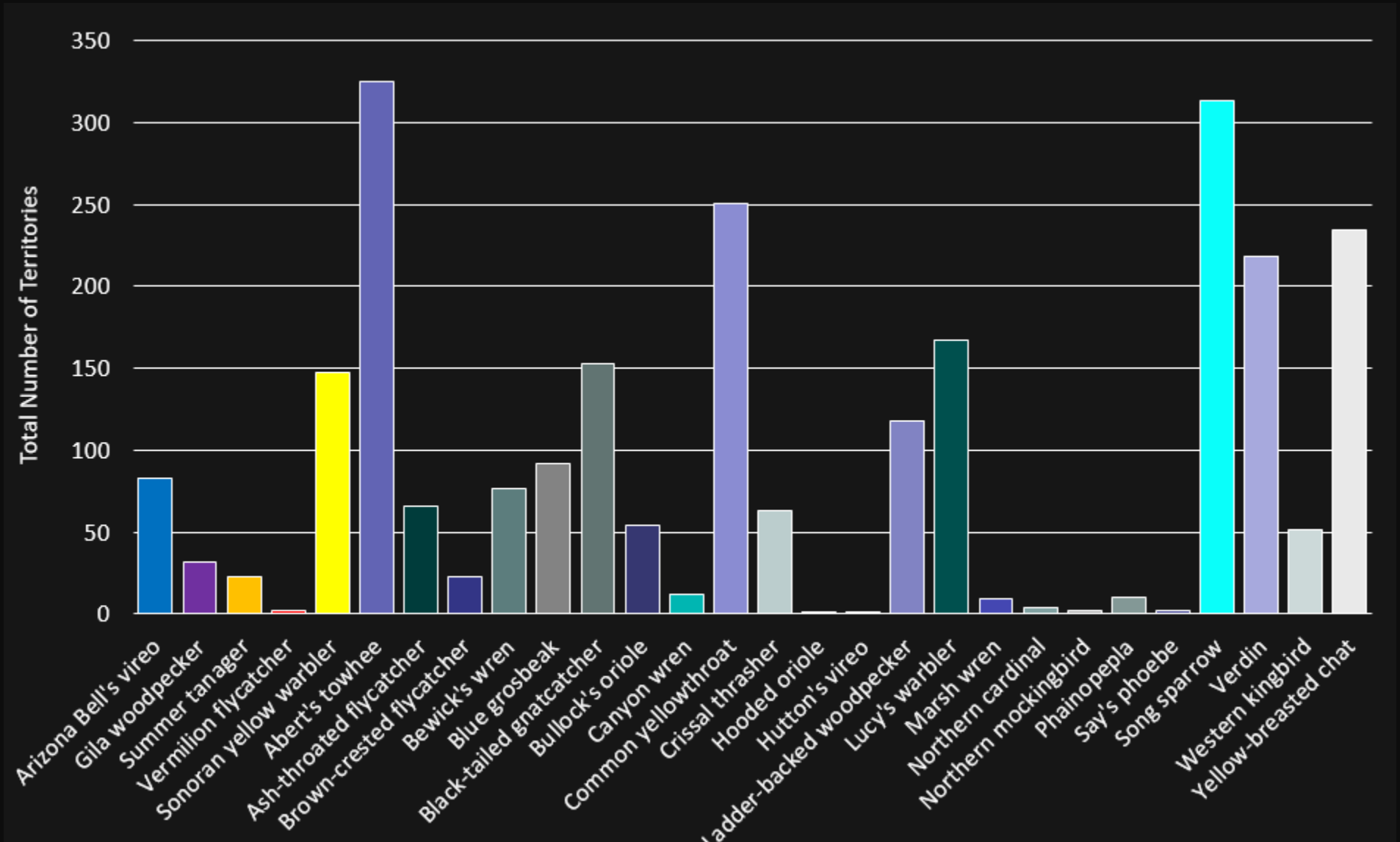
- 77 breeding species observed
- Over 20,000 bird locations recorded
- 3,183 territories created from data collected

Photo Credit :Amy Leist

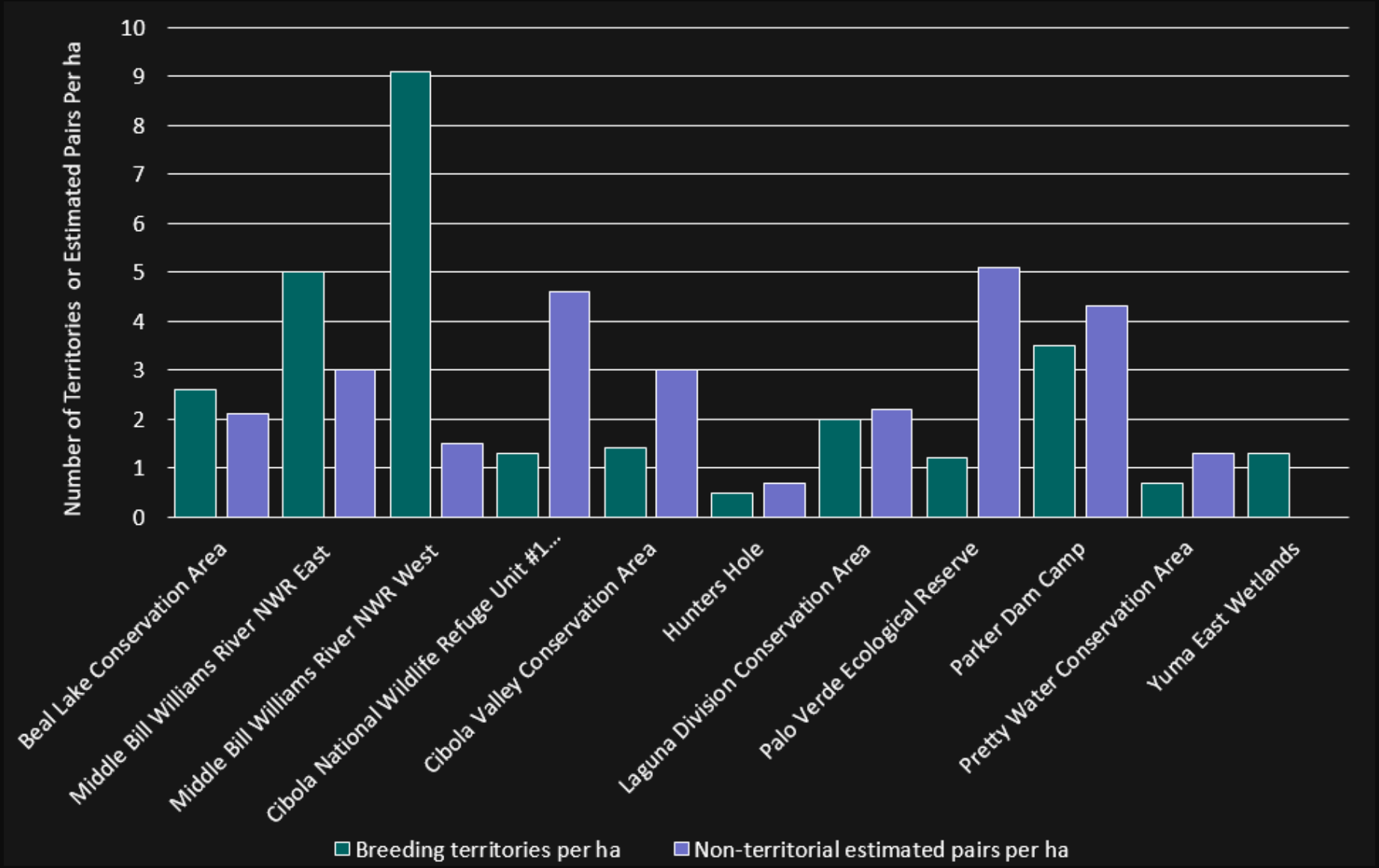
Number of rapid plots with each territorial species



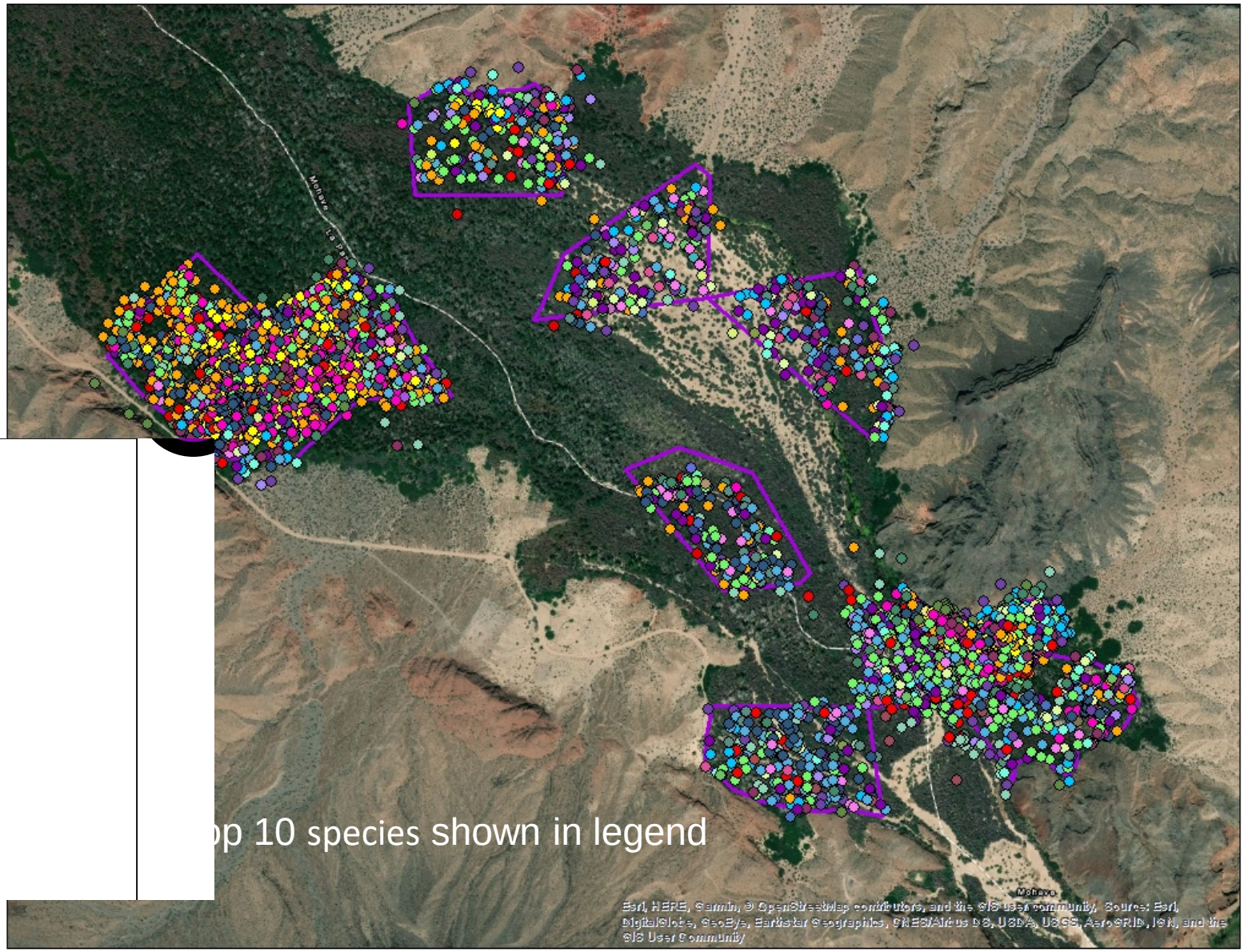
Number of territories



Number of Territories or Estimated Pairs per Hectare by Conservation Area

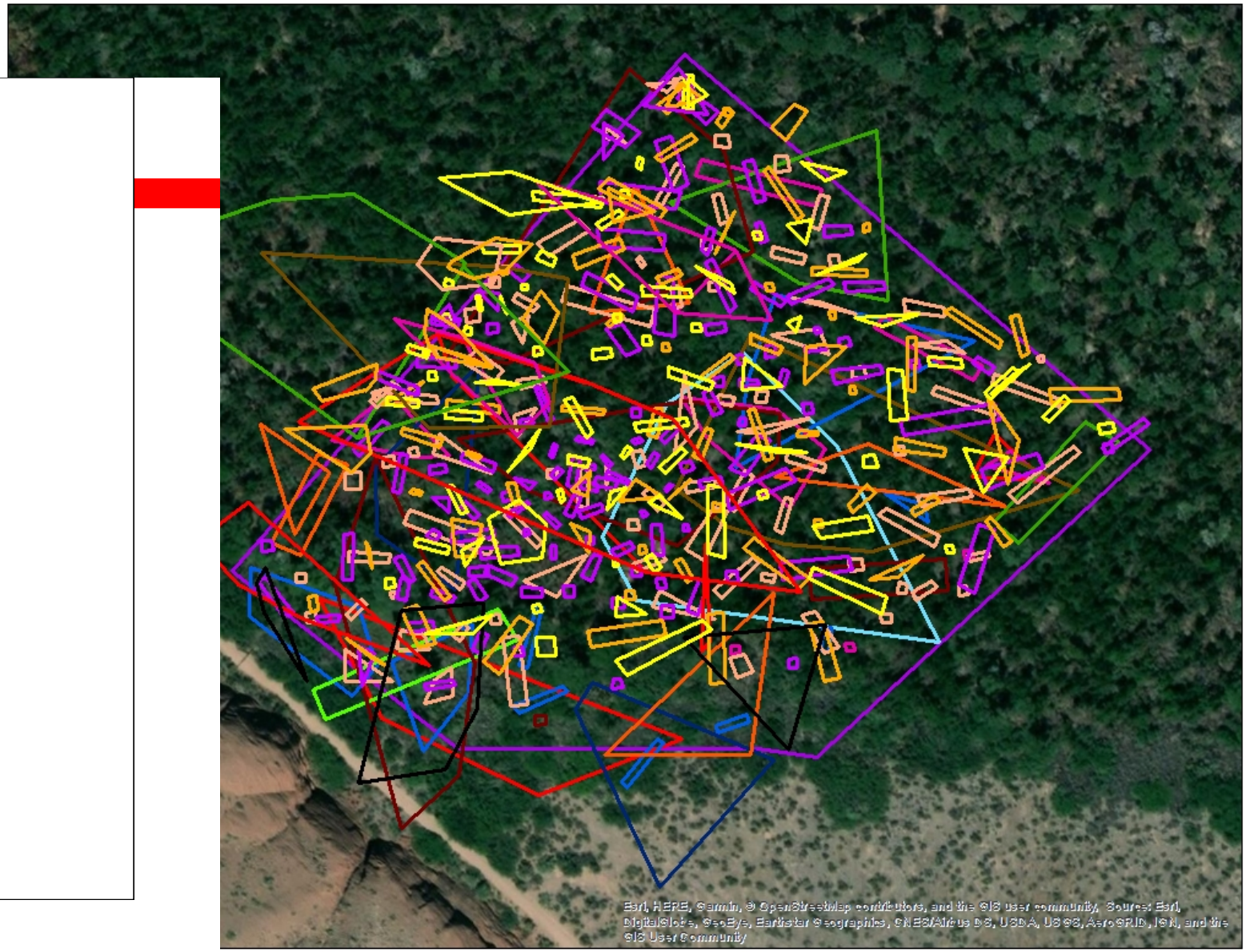


Bird Observations Bill Williams River NWR

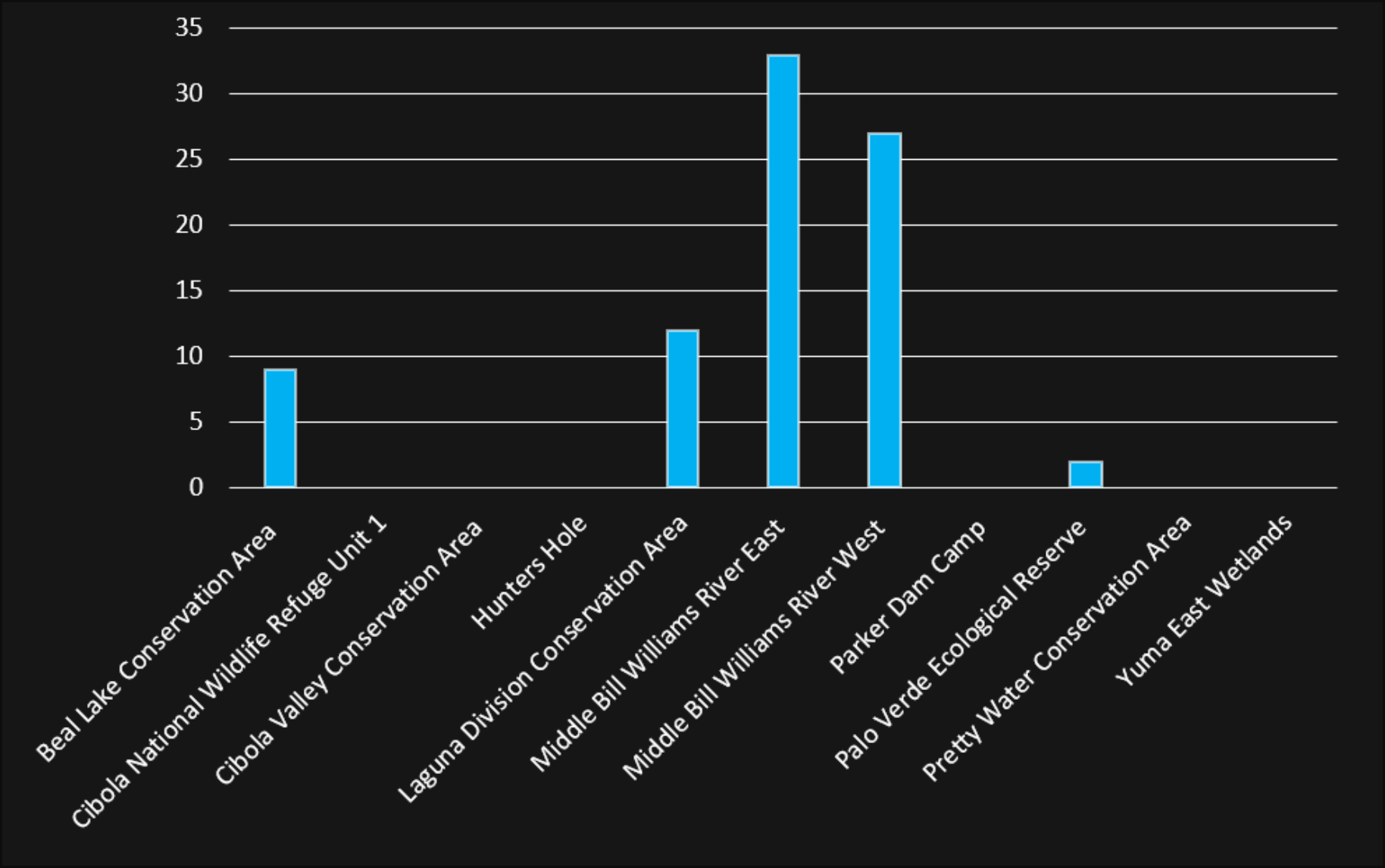


op 10 species shown in legend

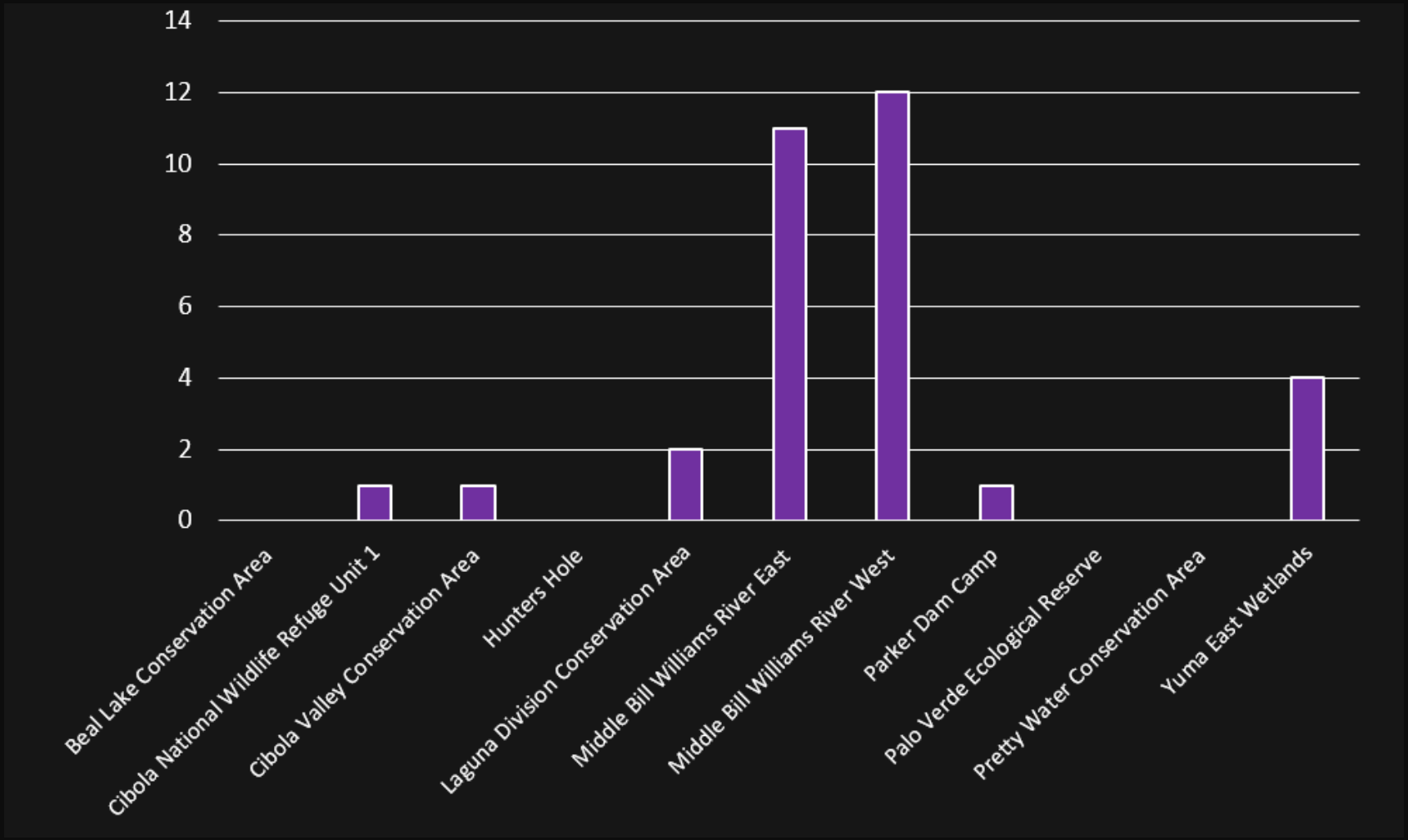
Survey Plot with Territories



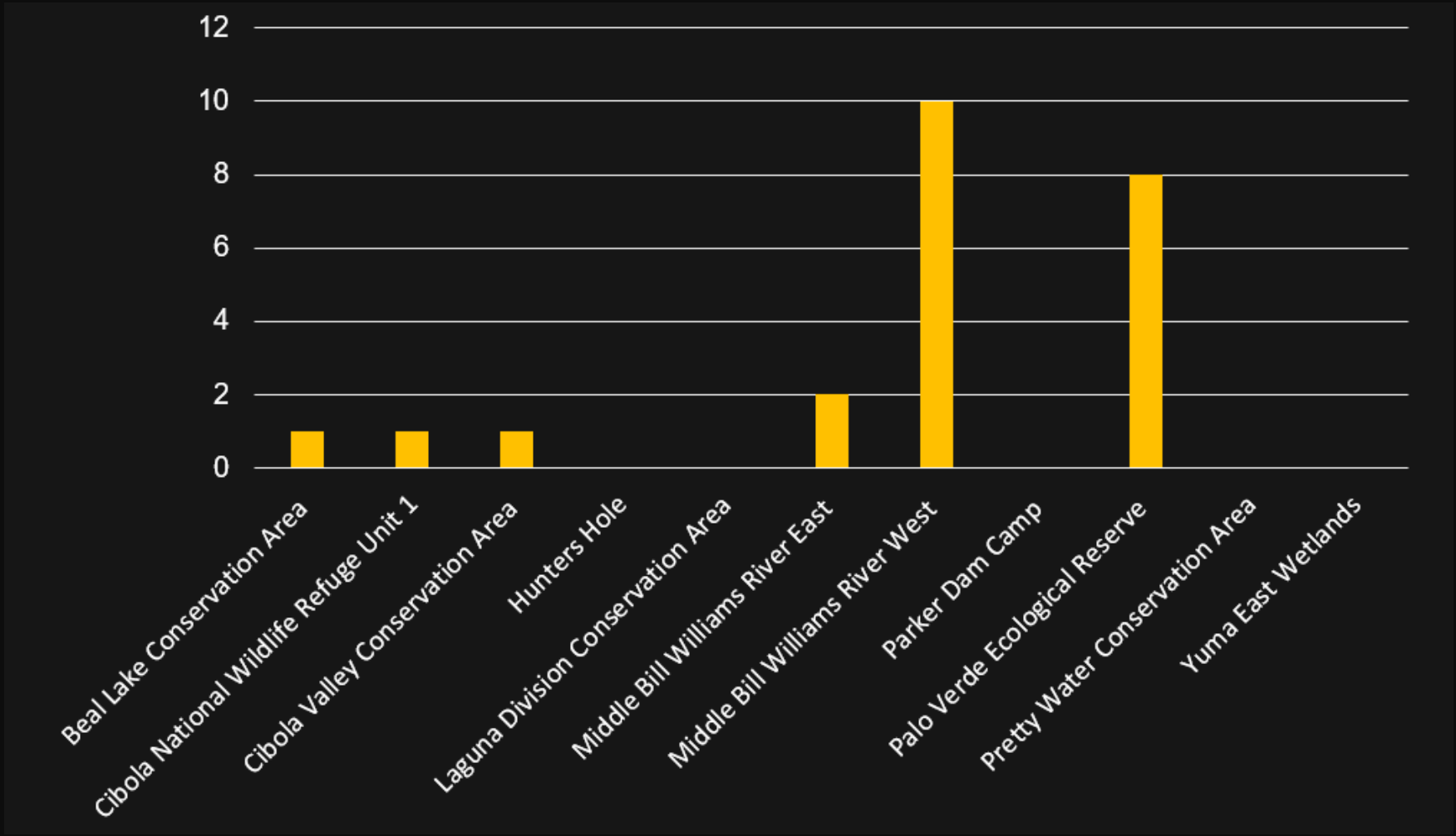
Bell's Vireo Territories by Conservation Area



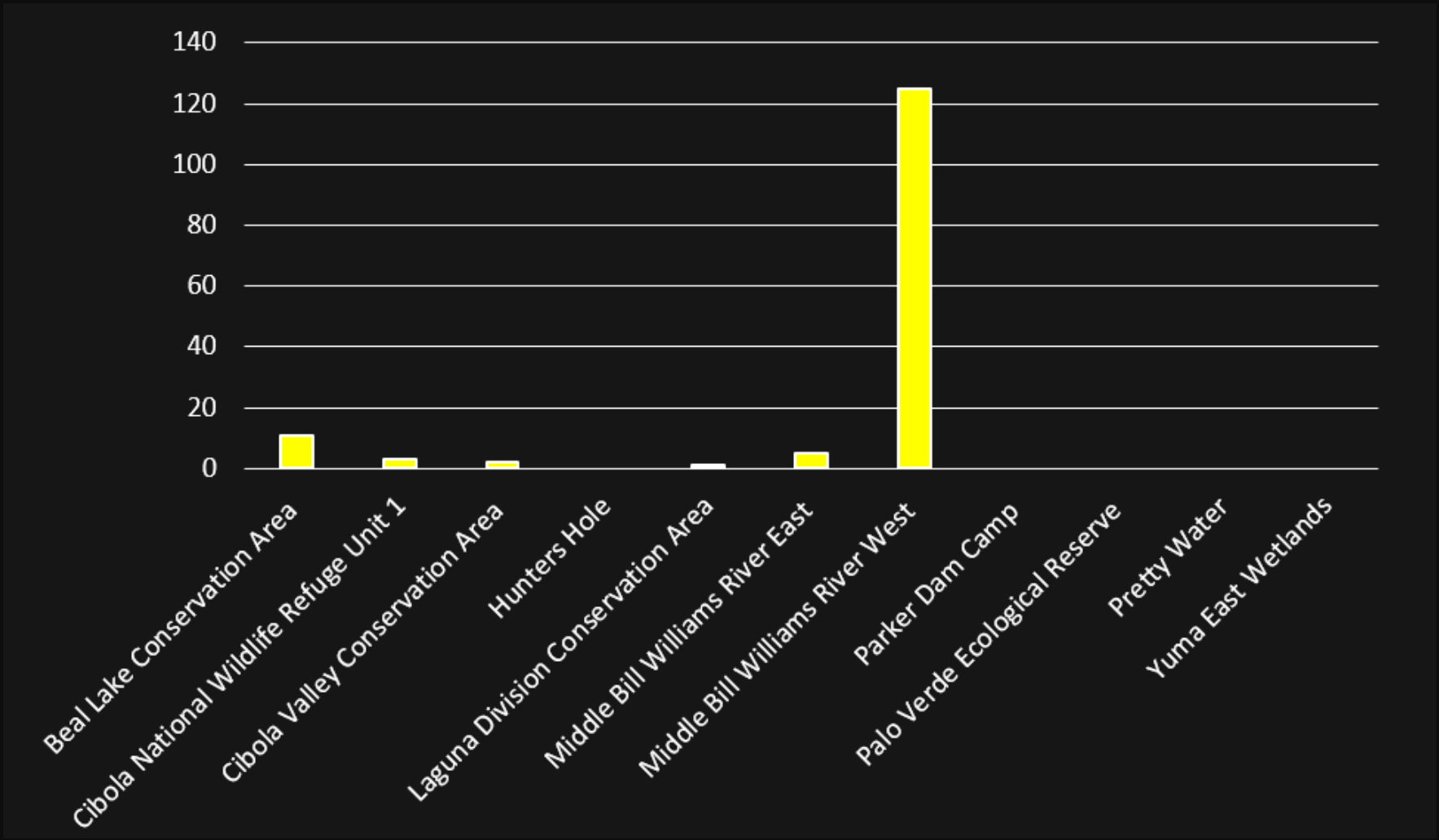
Gila Woodpecker Territories by Conservation Area



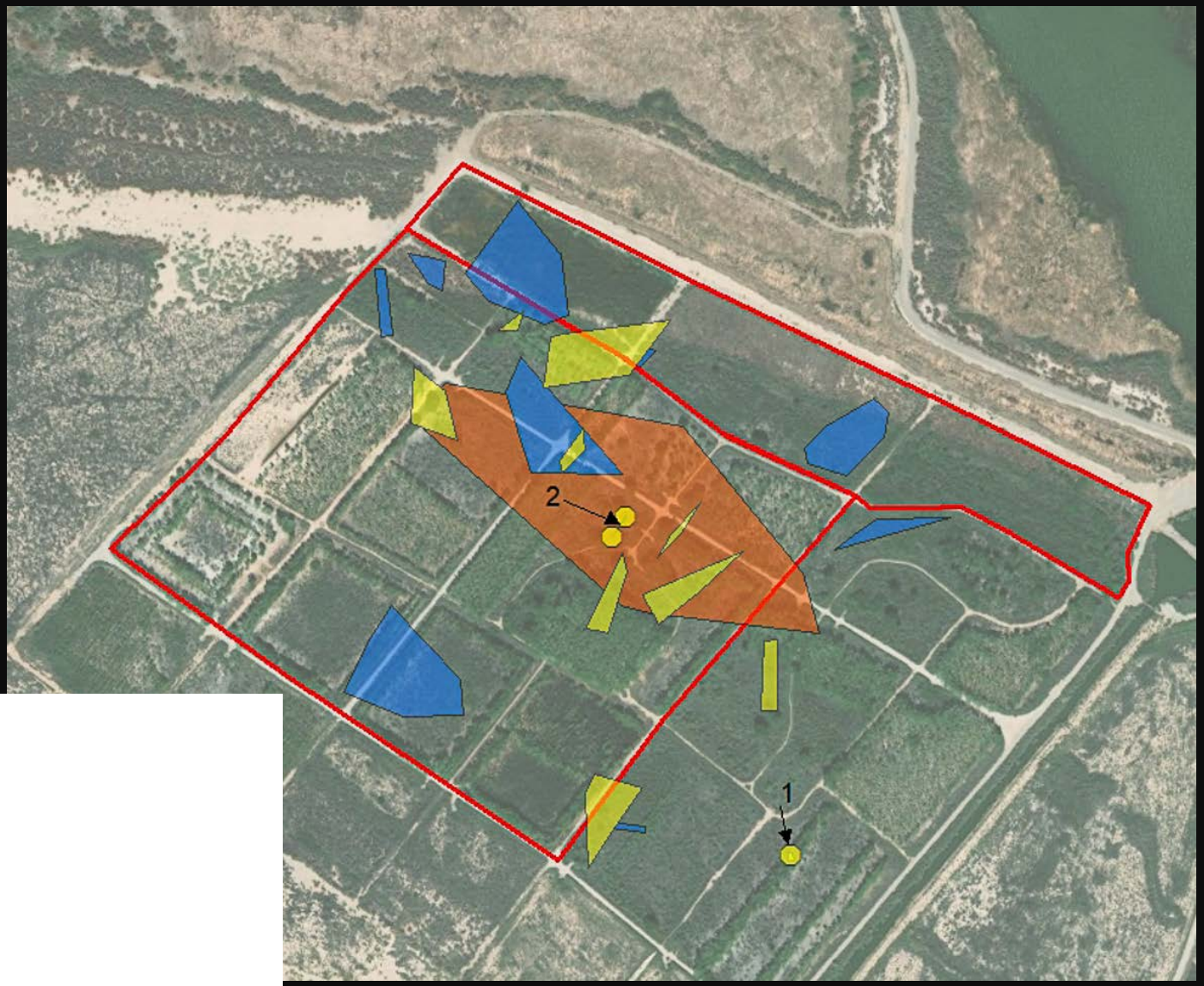
Summer Tanager Territories by Conservation Area



Yellow Warbler Territories by Conservation Area



Plots and Focal Species Territories



Highlight: Gila Woodpecker

CVCA

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Cibola NWR Unit #1

Acknowledgements

— US Bureau of Reclamation Wildlife Group

— National Wildlife Refuge Staff

— Awesome field crew