

# Do Socioeconomic Factors Influence Bird Abundance and Richness in CAP Neighborhoods?



## Introduction and Objectives

The Central Arizona-Phoenix Long Term Ecological Research (CAP LTER) is a large scale ongoing urban ecological inquiry about how the evolving urban environment impacts human behavior and subsequently urban and wildlife ecosystems<sub>3</sub>.

As part of the CAP LTER project, they measured long term abundance and diversity of birds across various neighborhoods in the Central Arizona-Phoenix area starting in 2000.

My goal was to investigate the relationship between the socioeconomic status of the neighborhoods and the bird abundance and richness recoded by the point count surveys.



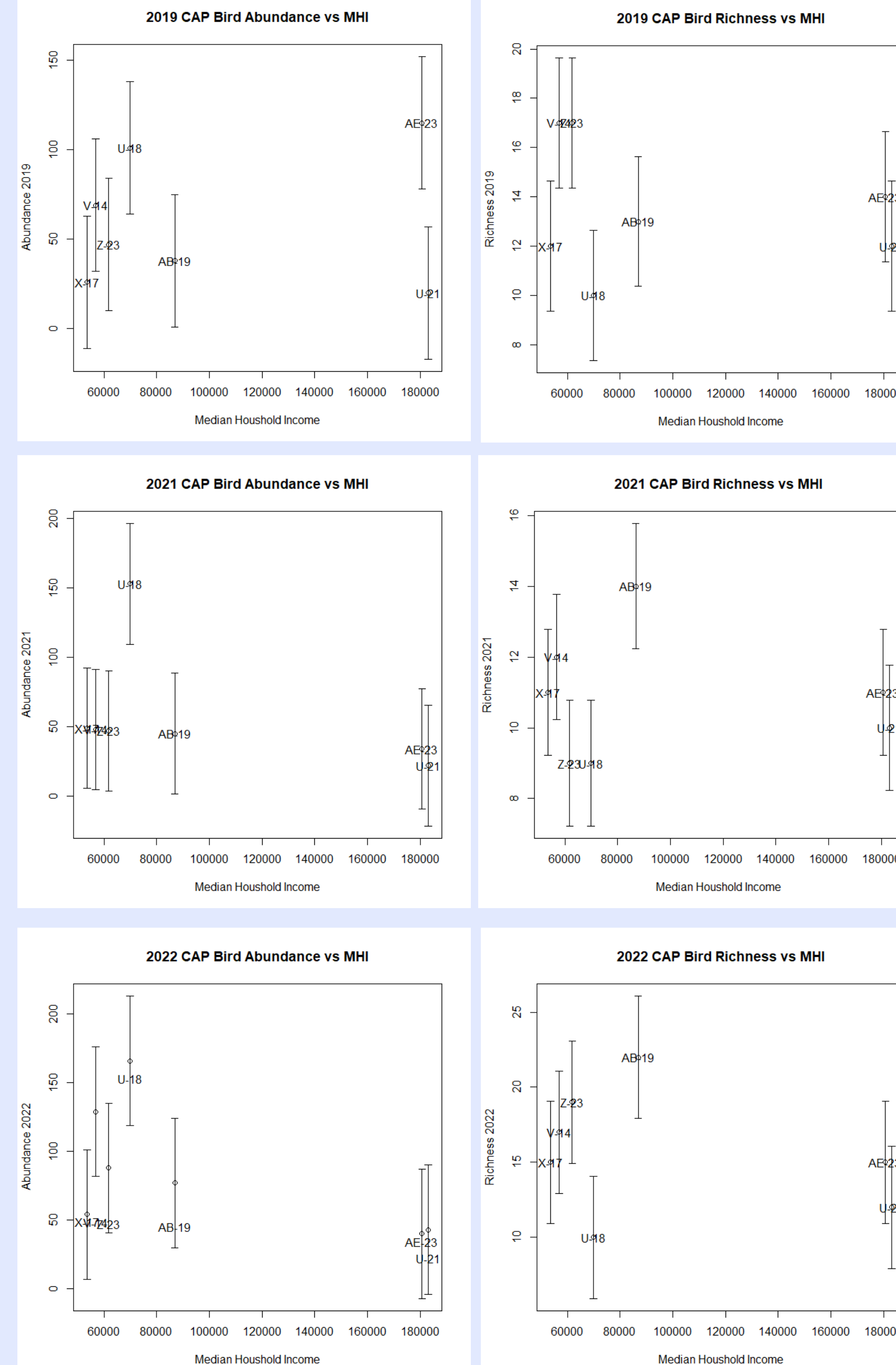
## Methods

I obtained the bird point count dataset from the ASU Global Sustainability CAP LTER website<sub>5</sub>. Socioeconomic variables were gathered from the Phoenix Area Social Survey (PASS) where I gathered median household income for each of the neighborhoods<sub>1</sub>.

I processed the dataset in R<sub>4</sub>, selecting only for seven of the CAP neighborhoods in the study and their point counts across the years 2019, 2021, 2022. The year 2020 was removed from my dataset because point count surveys were only performed for 4 out of the 12 months for that year.

Lastly I calculated Abundance and Richness values for all seven neighborhoods across all three years.

## Results



## Results

From the seven neighborhood, AE-23 and U-21 represented high income neighborhoods (Queen Creek and Ahwatukee). U-18 and X-17 represented low income (Phoenix and Tempe), and AB-19 and V-14 represented middle income neighborhoods (Gilbert and Phoenix). Z-23 was a low-middle income neighborhood (Chandler).

Abundance values for each neighborhood were not significantly different across all three years when comparing median household income.

Richness values for each neighborhood individually fluctuated across the three years. Richness values were not significantly different across the seven neighborhoods.

Median Household income was not a significant predictor for bird abundance and richness.

## Conclusions

Native desert bird abundance and richness have been linked to socioeconomic factors other than income in the past such as landscape care and the presence of bird feeders<sub>5</sub>. However, this analysis observed solely MHI which depicted changes in bird abundance and richness across the three years. The results were not significant between the three income ranges classified.

Socioeconomic factors have been linked to native bird richness in residential yards<sub>2</sub>, however there may be more explanatory variables available to elucidate that relationship

## Literature Cited & Acknowledgements

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