The background of the slide features a wide-angle photograph of a desert landscape. In the foreground, there are rolling green hills and fields, with small shrubs scattered across them. In the middle ground, more hills and fields extend towards the horizon. The sky above is a clear blue with some wispy white clouds.

An examination of shrub and animal density-dependent interactions in desert ecosystems: April Progress Report

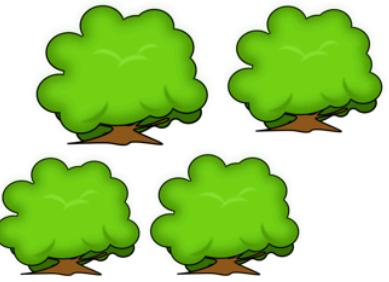
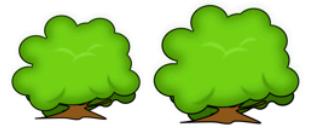
By: Mario Zuliani

Review of Chapter Timeline

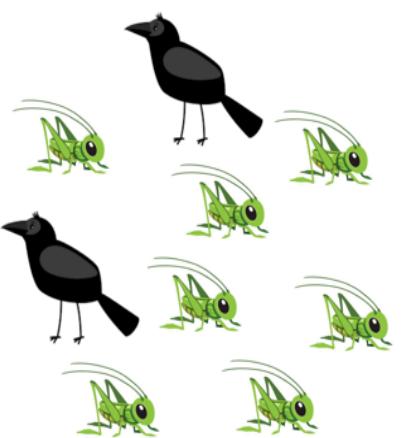
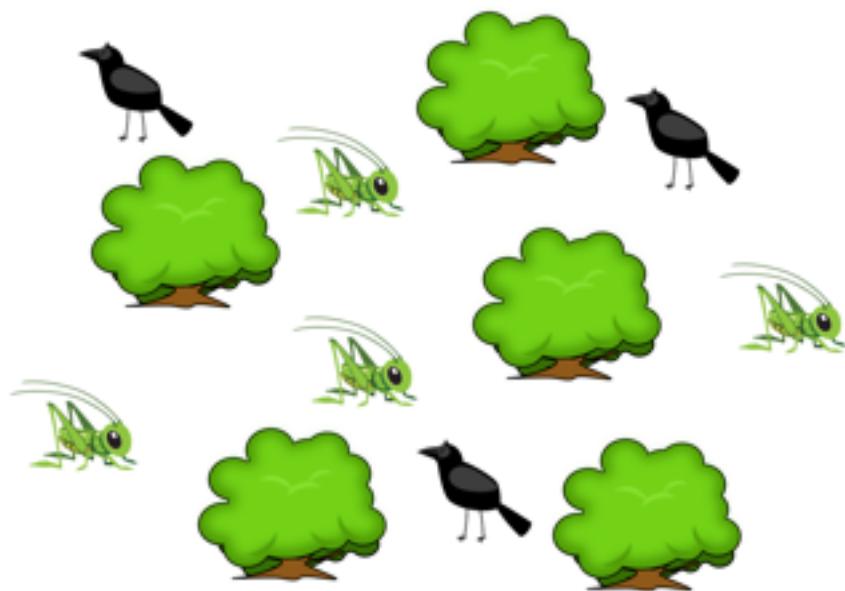
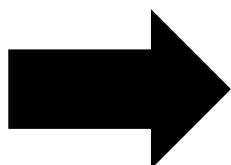
Chapter	Title	Progress	ST Goals	LT Goals
1	Making a deal with the Devil	Literature review started September 2018	Collect preliminary data and have reviewed/analyzed by December 2018/January 2019	Analyses complete by July/August 2019. Draft by September 2019?
2	An examination of shrub and animal density-dependent interactions in desert ecosystems	Field Season to start May 2019	Data analysis by September/October 2019	Second field season May 2020?

Background Reviewed

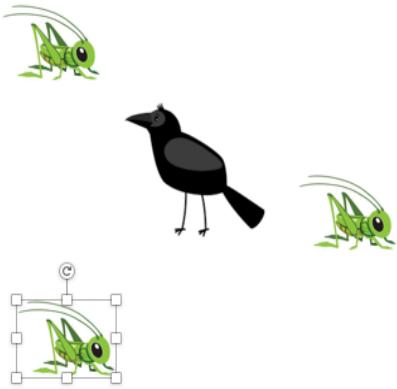




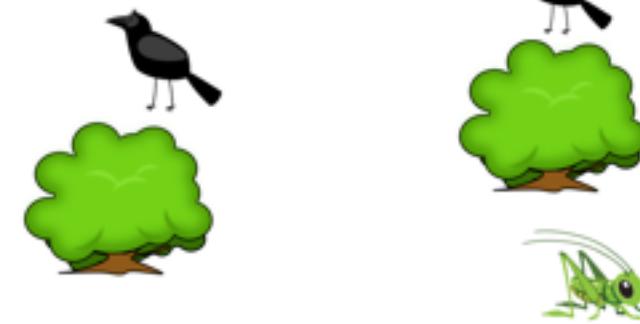
VS.



VS.



VS.



Chapter 1: Making a Deal with the Devil

Purpose:

- A systematic review to gain insight on the relationship between shrub and Animal densities recorded in literature
- Focus on papers where facilitation occurs and if densities are recorded

Questions:

- What activities are being observed with shrubs?
- If there are interactions then is only one species benefiting?
- Direct and indirect effects?
- Are shrub and/or animal densities recorded?

Chapter 1: Making a Deal with the Devil

Predictions:

1. Many studies are going to focus solely on benefactor interaction
2. Costs to helper species will be overlooked in most papers
3. Shrub densities will not be focused on or included



Chapter 1: Making a Deal with the Devil

Methods:

- Web of Science Screening
- Generation of bar graphs and PRISMA
- Zotero Paper loading
- Screen eligible papers
- Systematic Review write up



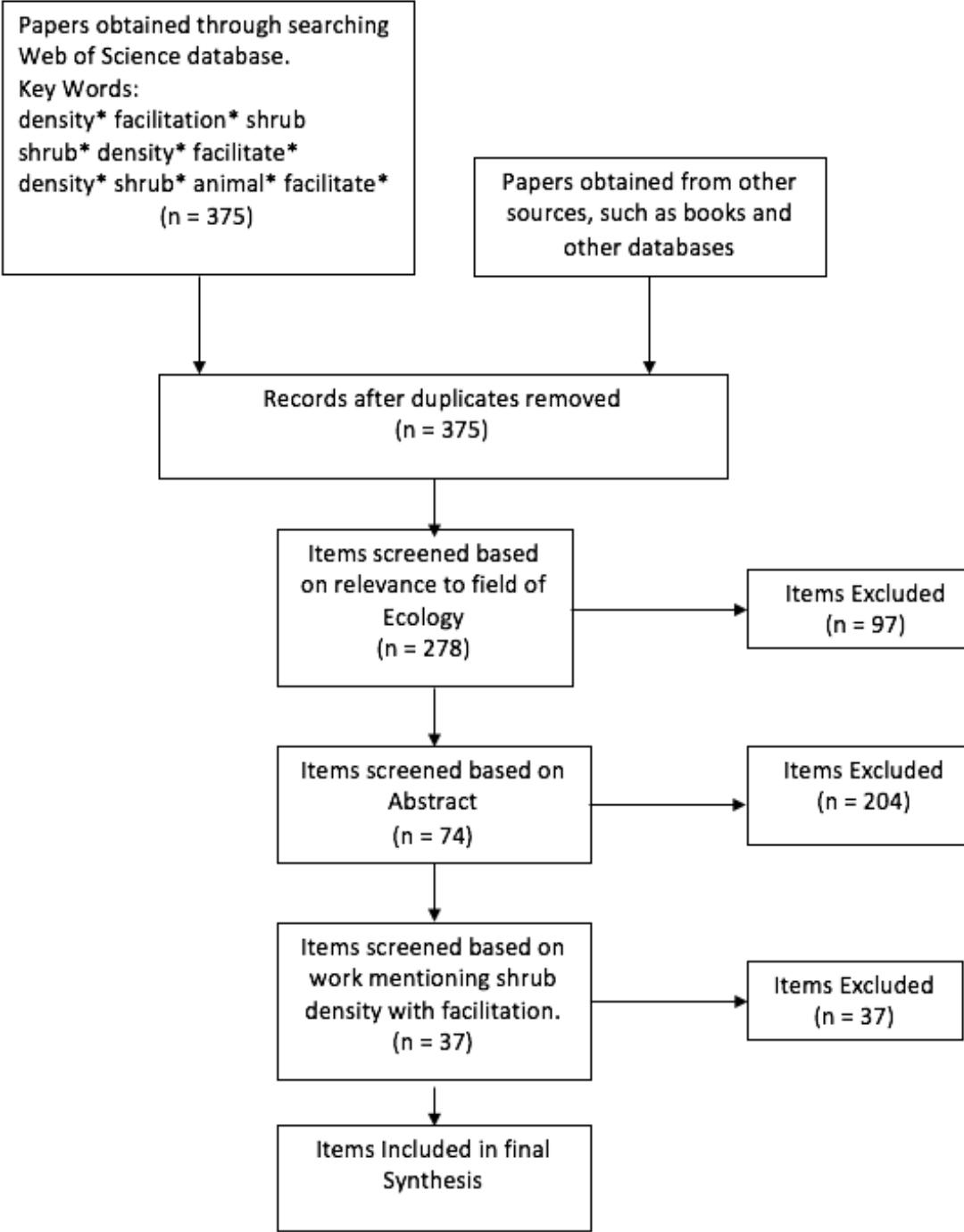
WEB OF SCIENCE™

Chapter 1 Progress so Far

- Total papers reviewed = 375
- Total after Abstract and Full text review = 37
- Criteria for filtering:
 1. What field of study is the paper focusing on
 2. Is density, facilitation and shrub mentioned in the abstract
 3. Is there density data usable in the paper
 4. Are the benefactor and protégé species mentioned
 5. Do the papers pertain to the field of ecology.

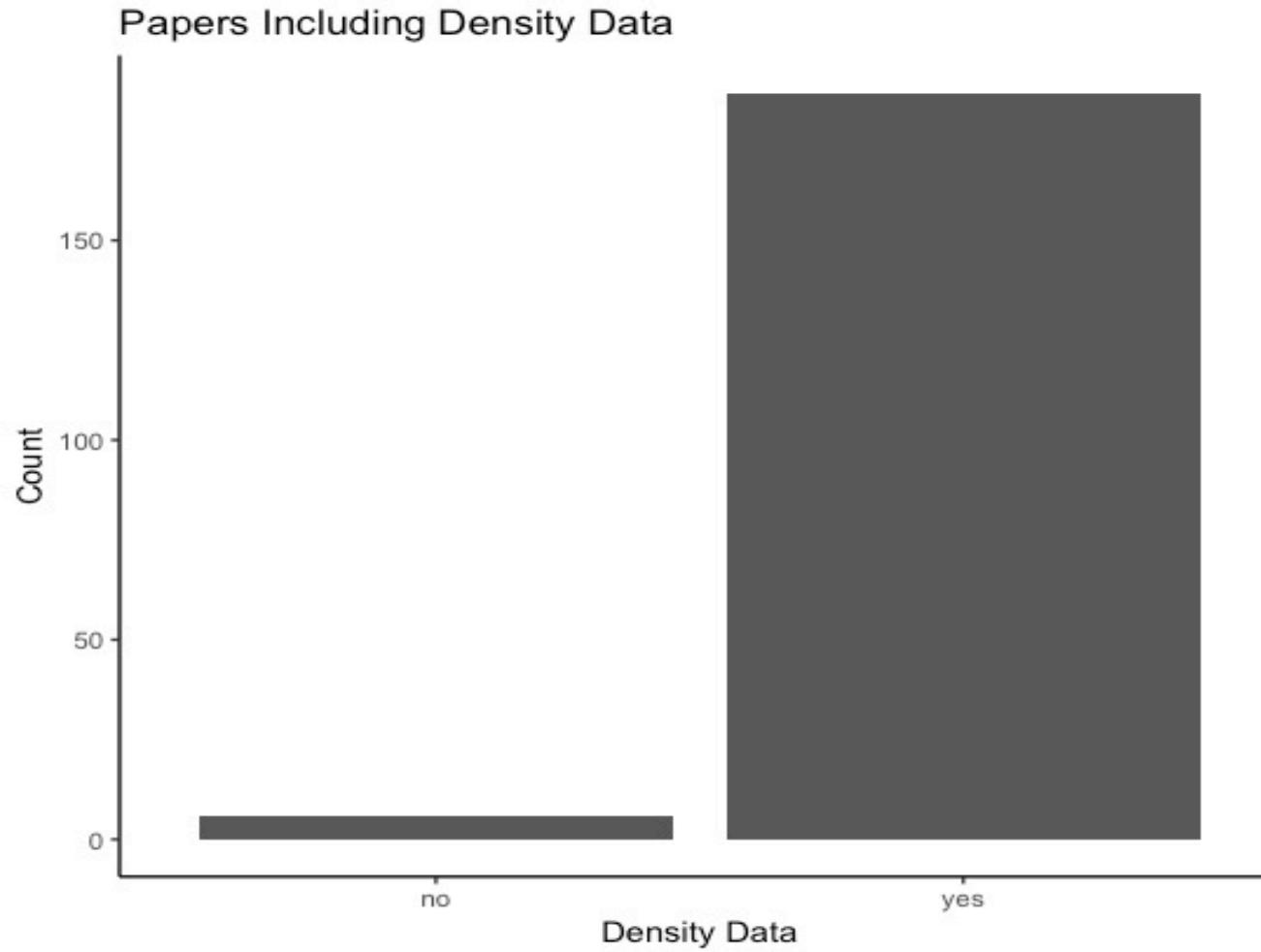


Identification

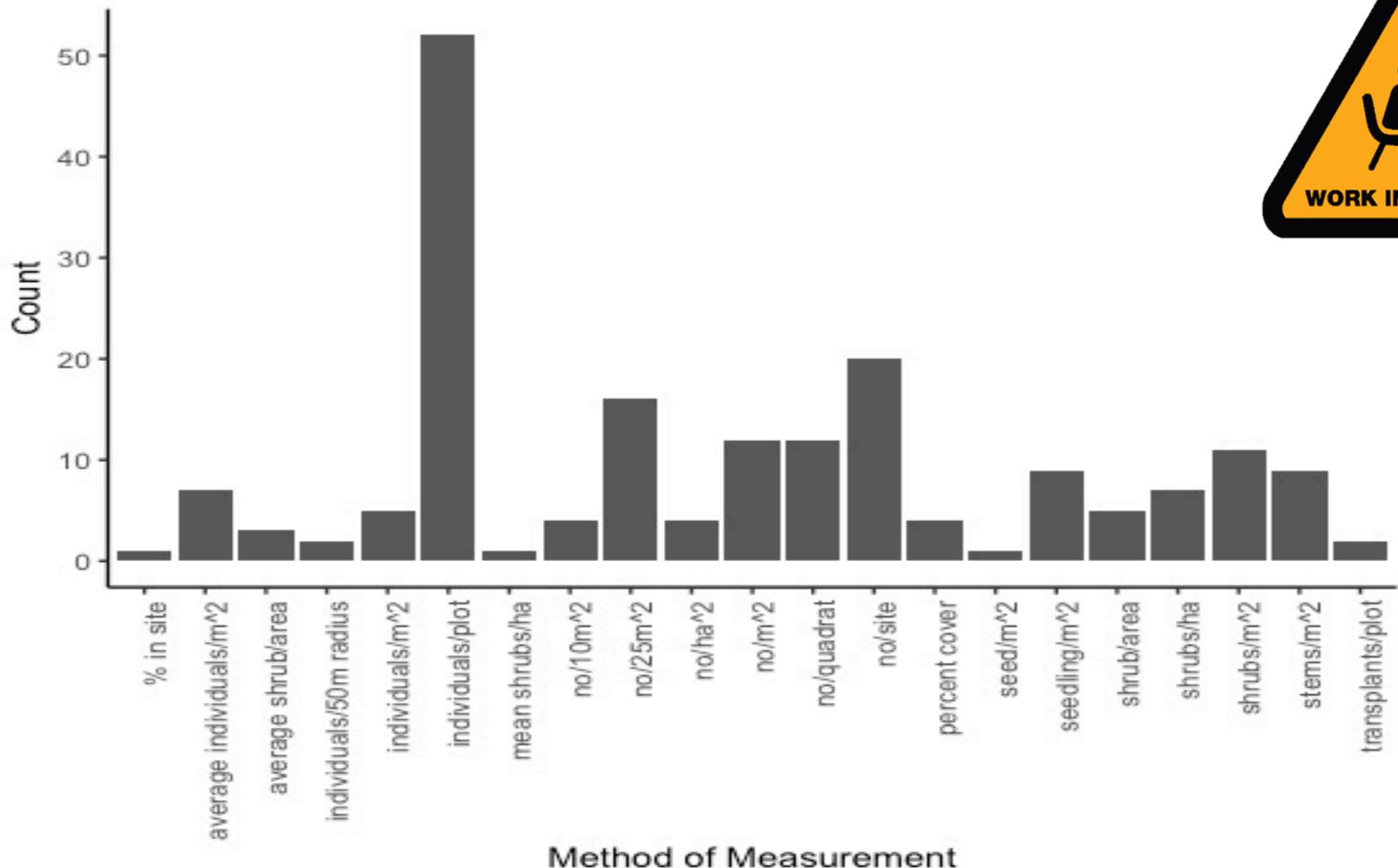


Chapter 1: Progress to Date: PRISMA

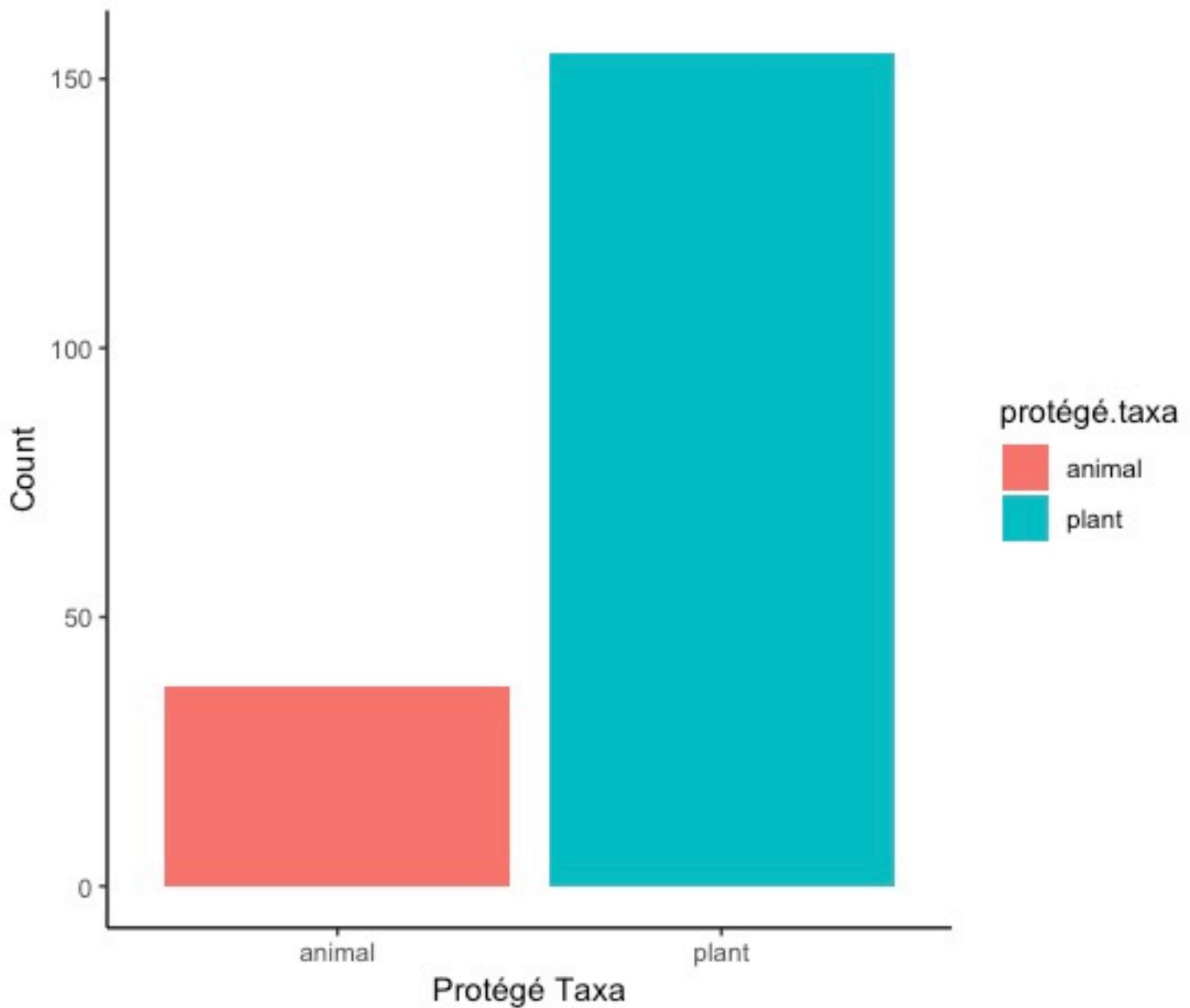
Chapter 1 Progress so Far Cont.



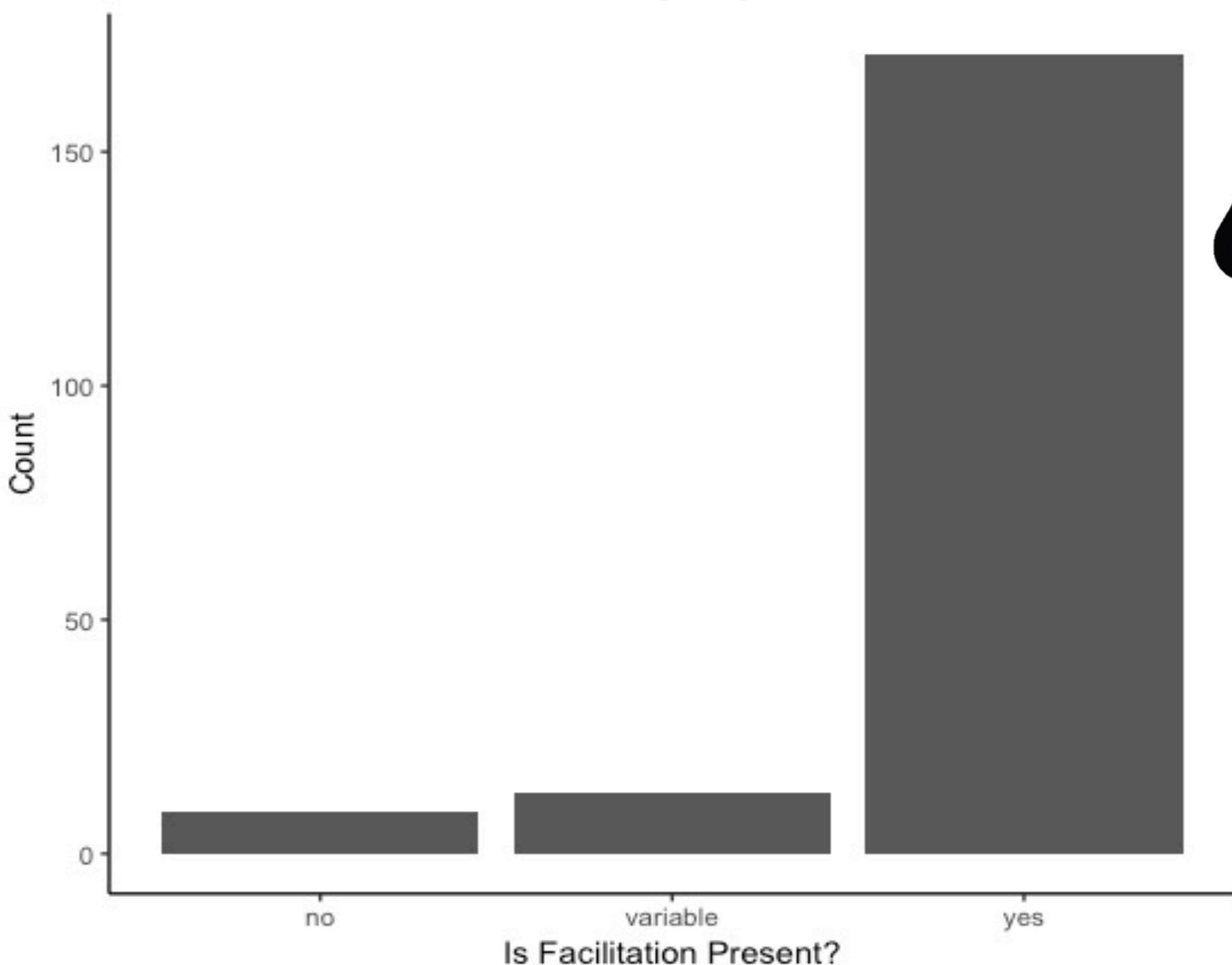
Methods of Measuring Shrub Density



Protégé Taxa in Included Papers



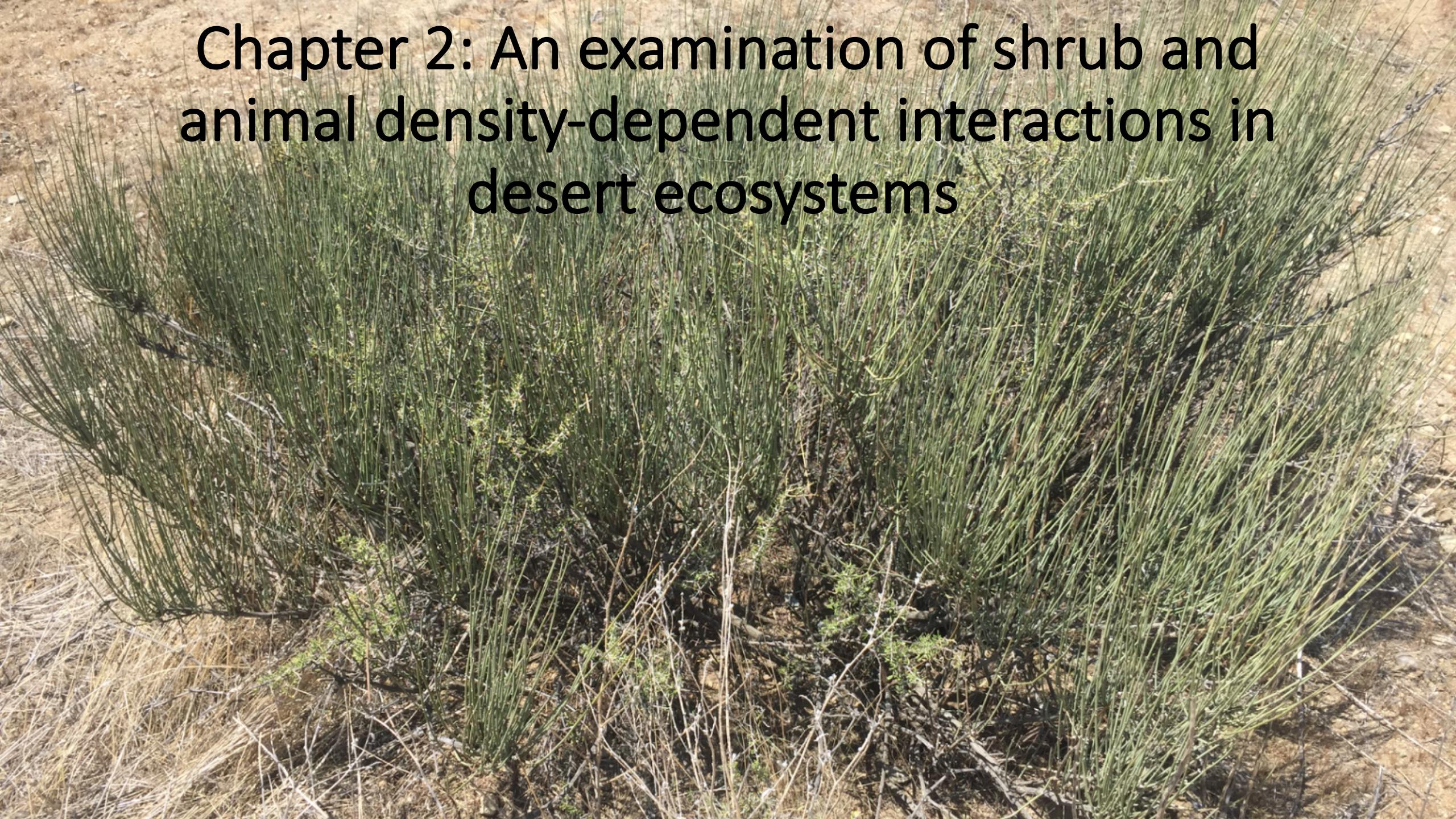
Is Facilitation Present in Density Papers



Chapter 1: So What Do We See so Far?

- 1) Many of the papers focusing on facilitation and shrub density produce a value for shrub density.
- 2) Most papers do not have a numeric value to quantify facilitation
- 3) There is no universally agreed upon unit of measurement for shrub density, and can vary greatly depending on the study
- 4) Many papers looking at density and facilitation conclude that facilitation is present in their system

Chapter 2: An examination of shrub and animal density-dependent interactions in desert ecosystems



Chapter 2: An examination of shrub and animal density-dependent interactions in desert ecosystems

Purpose:

- To examine the density dependent interactions between shrub and animal species in desert ecosystems

Question:

- Is there a relationship between the shrub density and animal density in the Carrizo Plain?
- Do animal populations respond to shrub density
- How are the varying species interacting with the shrubs?

Chapter 2: An examination of shrub and animal density-dependent interactions in desert ecosystems

Hypothesis:

- Shrub and animal interactions will increase at higher densities, due to an increase in facilitation, and will influence the species richness in these areas.

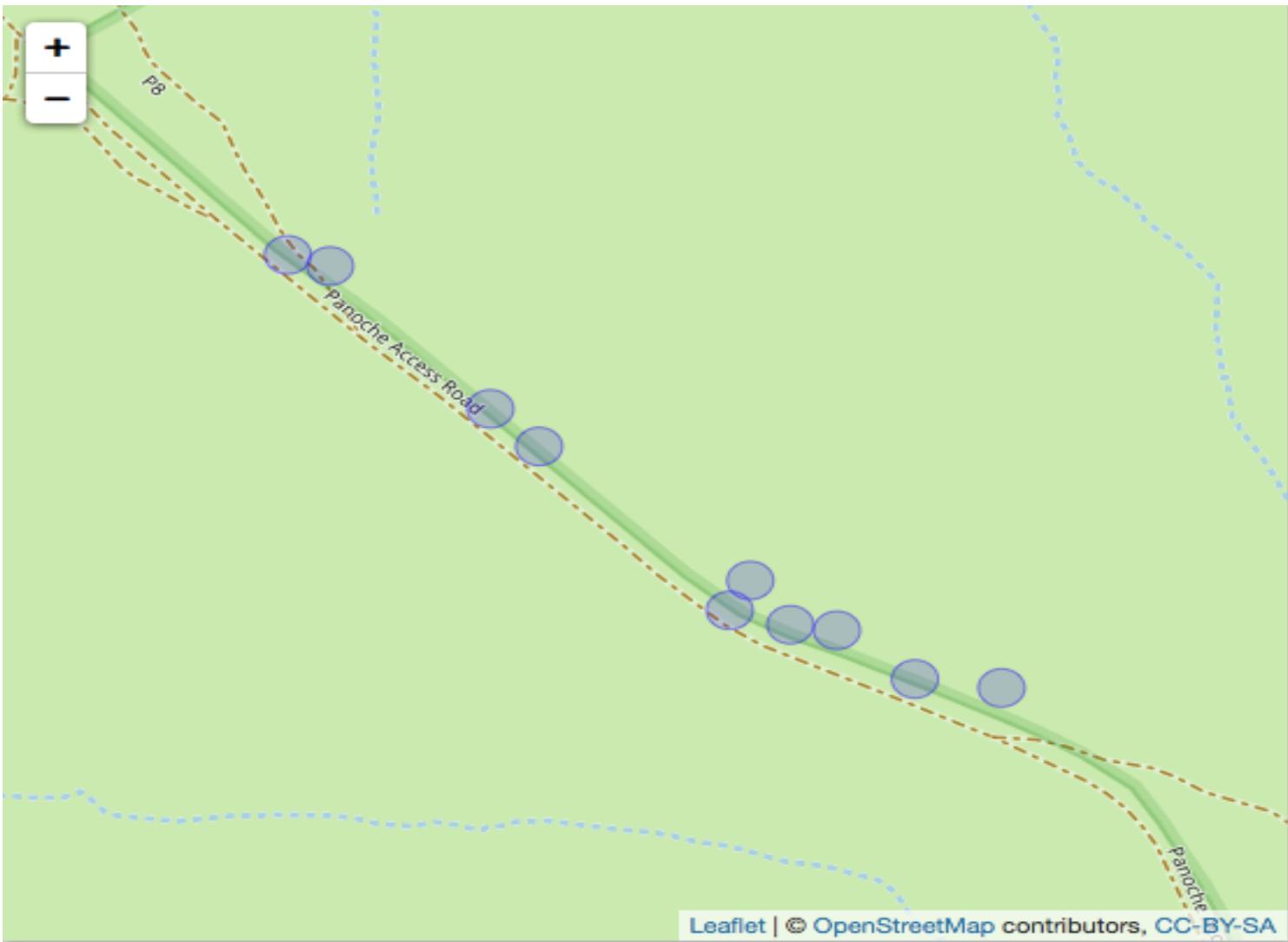
Predictions:

1. Higher Shrub density will correlate with a higher animal species density.
2. Shrub and animal densities within a site are positively density dependent
3. High shrub densities also increase animal species richness
4. Larger shrub size will have a positive impact on animal density

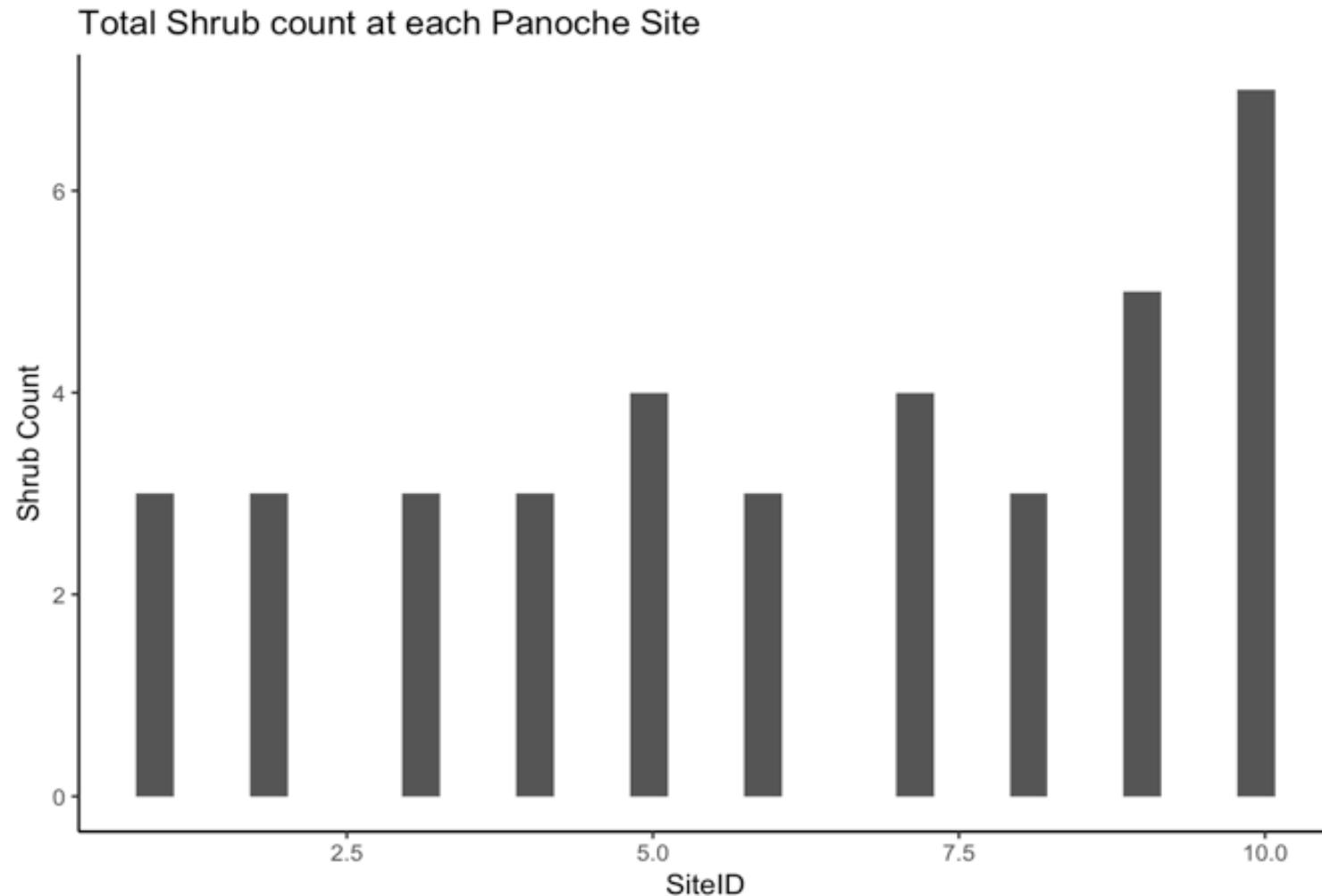
Chapter 2: Progress so Far



Chapter 2: Progress so Far



Chapter 2: Progress so Far



In-depth Timeline

Timeline	Goals
February 2019	Travel to Carrizo study site to get preliminary data on potential sites. Pick potential sites.
March 2019	Work with data collected from February trip.
April 2019	Continue working with data collected from February trip, work on write up for Chapter 1
May 2019	Travel to Carrizo site, acquire camera traps and SD cards. Deploy cameras at sites (Chosen in February). Conduct focal observations and transects
June 2019	Return from field site. Begin analyzing data from camera traps, transects and focal observations. Continue work on Chapter 1.
July 2019	Continue working with dataset from May field month. Continue work on Chapter 1.



Thank You! 😊