



# INTRODUCTION

Figure 1.

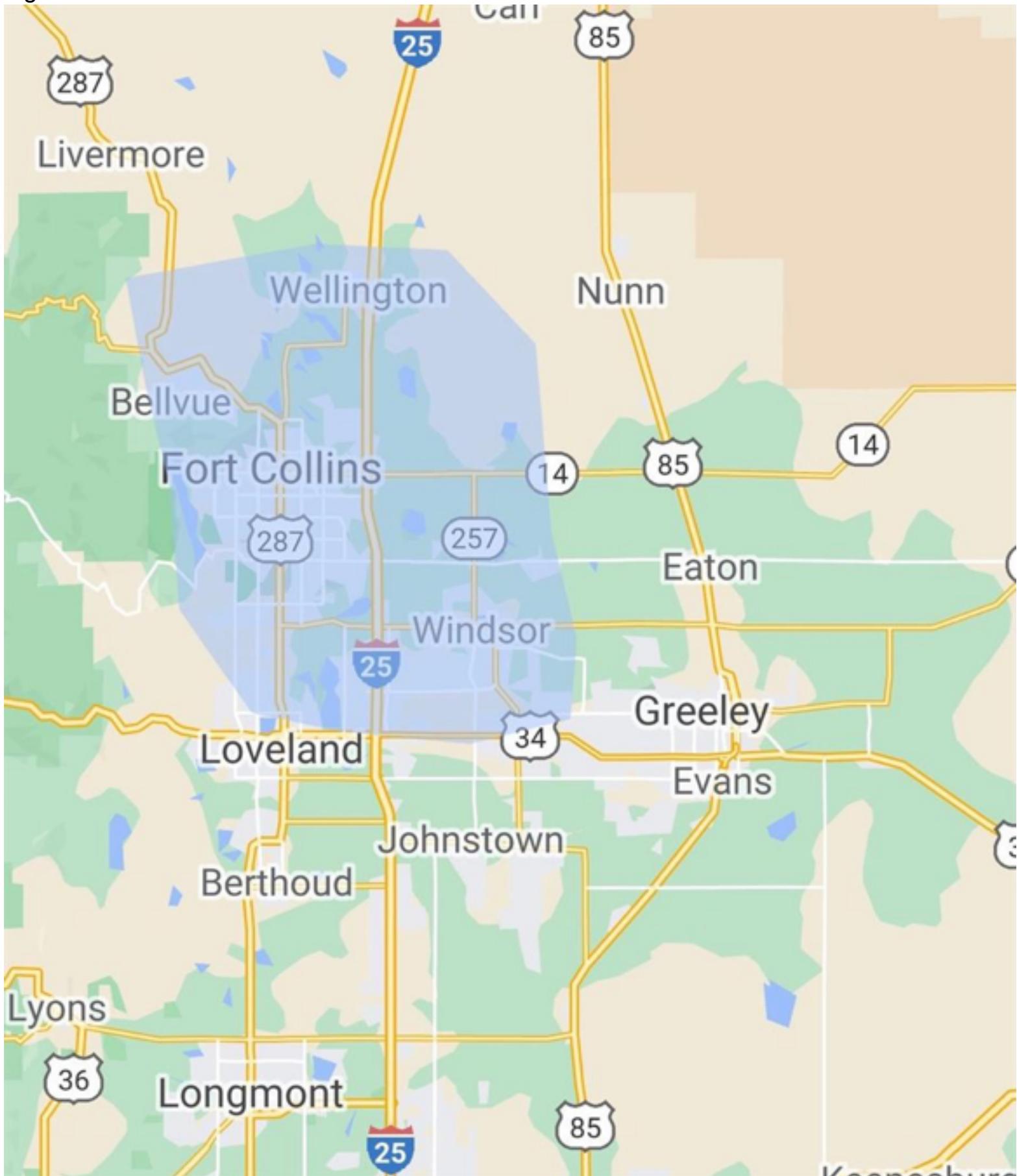


Figure 1. A map of the greater Fort Collins area, highlighting the area the survey was intended to monitor and where the majority of responses came from

In this study, we worked with the City of Fort Collins Natural Areas Department and focused on the perception's residents have about native plant gardening and advocacy and barriers and motivators for these behaviors.

This was done through the design of experiments that would allow for the researchers to track the social diffusion of native plant vouchers, and surveys to measure the engagement and visions that citizens have regarding native planting and wild scaping conservation strategies in the greater Fort Collins area (Figure 1). Conservation leaders discuss how one of the most powerful and influential methods of conducting change is through social networks and institutions (Niemiec et al., 2020).

This research project also investigates native plant actions where there is a stronger sense of self-efficacy, which is defined as an individual's belief in their ability to execute a behavior or action and is a direct reflectance of their confidence (Bandura, 1997).

### **Research Question:**

- What are some barriers and motivators residents in the greater Fort Collins area encounter regarding native plant gardening and advocacy?
  - **Hypothesis:** Participants will experience the majority of barriers related to socioeconomic status, lack of self-efficacy related to the right to talk to others in motivating native plant behaviors, and worries about how others will view them especially from larger organizations such as HOA's.

# METHODS

Figure 2.

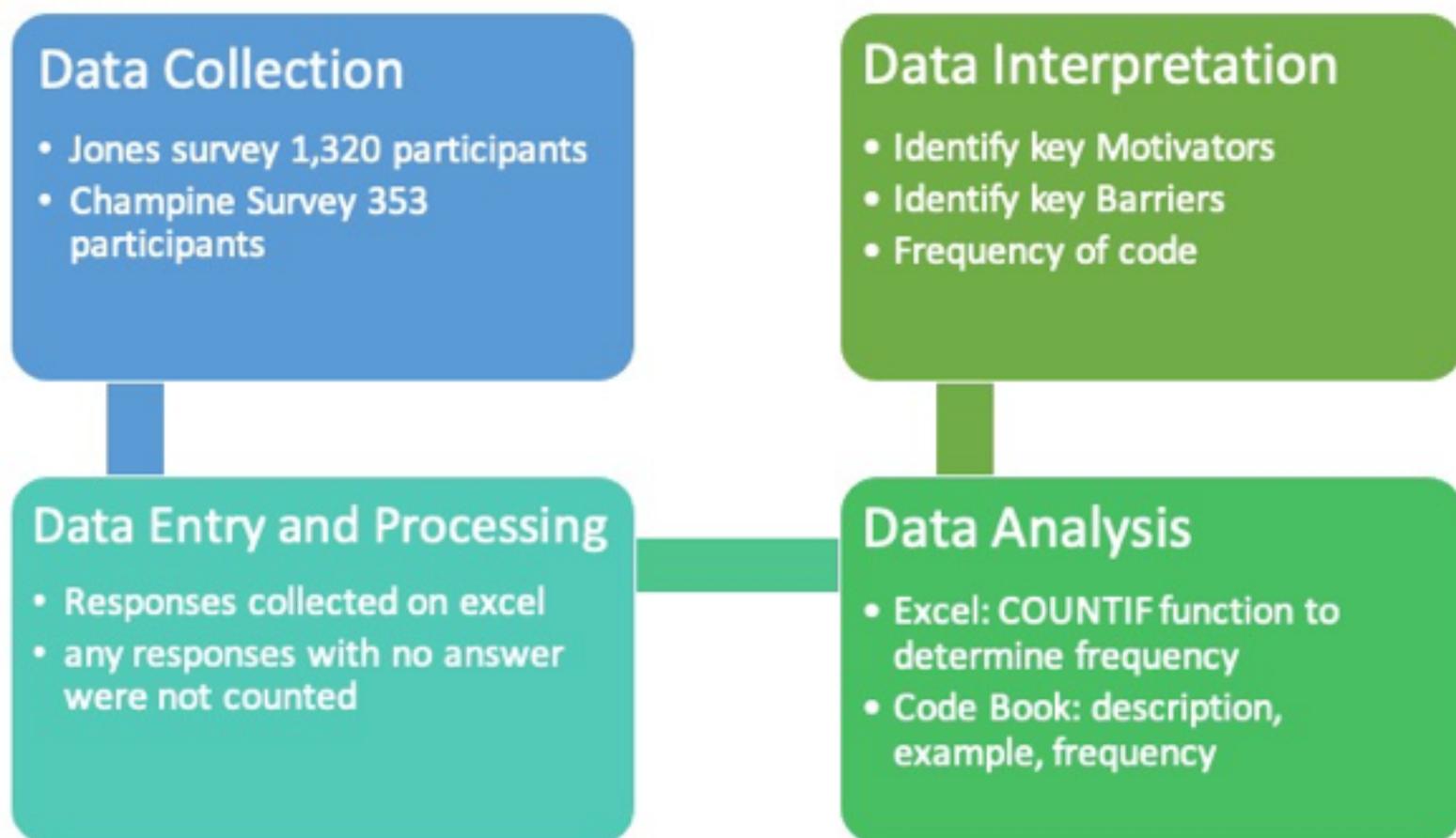


Figure 2. The methods diagram above describes the key steps in the qualitative analysis process of survey data on native planting actions.

## **Data Collection:**

- Data consisted of survey responses that were previously conducted by Dr. Megan Jones and Veronica Champine
- Included a total of five questions regarding native plant gardening and advocacy behaviors
- 1,320 participants that answered four questions from Jones' survey
- Second survey done by Veronica Champine included one question with 353 participants
- The participants responses in both surveys were anonymous to maintain privacy.

## **Data Entry and Processing:**

- Reading through all of the open-ended responses for both surveys, we synthesized themes related to barriers and motivators towards native planting.
- Responses were coded and tallied, with any empty or unrelated responses not included in frequency counts.
- Out of these codes, we created a codebook with overarching themes present.

## **Data Analysis and Interpretation:**

- In the Excel spreadsheet each response was analyzed by looking for key words or common themes.
- Once a theme was recognized it was assigned an initial generic code and number.

- The analysis of the responses was repeated, with some responses being coded to multiple codes if it included multiple themes.
- To determine the most common code for each response, the COUNTIF function was used.
- Code book was created for each question, containing multiple columns that included; code number, code name, code description, example, and frequency.
- Each code also detailed any motivations or barriers through examples.

### **Research Findings:**

- The codebook described in step 3 above is a thematic analysis tool that display broad attitudes towards native planting behaviors
- Determine recommendations or misconceptions to these behaviors
- Use these common perceptions to implement change in native planting.

# RESULTS

Table 1.

Code Number	Theme Name	Theme Definition	Quote/ Example
<b>Question 1: Which of the following native plant gardening actions have you engaged in?</b>			
1	Gardening and Planting	Gardens in a box and throughout neighborhood planting in yard (Wildlife not mentioned)	planted garden in a box
2	Planting to Attract Wildlife	Participants have planted plants in the past that attract wildlife and accommodate birds and pollinators	We provide water on site (bird baths, bee baths) and registered our yard with the National Wildlife Foundation's Wildlife Habitat program.
<b>Question 2: Are there any native plant gardening actions you haven't taken but would like to do?</b>			
1	Removing Lawn	Remove grass and sod to reduce water usage	"remove more grass and plant more natives."
2	Increasing Community Engagement in Gardening	Want to increase native plantings throughout community and getting involved with bird watching in the community	Do community monitoring, install birdfeeders and plant bird/ pollinator friendly plants at my new house that I moved into and remove some sod
<b>Question 3: Please describe what motivates you to plant native plants.</b>			
1	Enjoying Aesthetic Beauty	Want to enjoy the visual beauty of having a yard full of native plants and wildlife	They look beautiful and natural. I also love smelling and hearing bees all summer when I walk in my gardens.
2	Attracting Pollinators	Plant native pollinator plants to increase bee activity and other pollinators in their yards	Increase the number of pollinators and birds in and around my property

<b>Question 4: What native plant advocacy have you engaged in?</b>			
1	Educating Others	Help establish education programs or partook in already established programs to educate others on large scale	"served on the board of native plant society, rescued native plants from developing areas"
2	Sharing plants	Gave neighbors seeds of native plants, plants, or planting materials	"Split some native plants that I have and shared with friends...for them to plant in their yards."
<b>Veronica's codebook: Any other details to share about plant gardening and advocacy?</b>			
1	Lacking in Knowledge	Does not feel equipped to do native planting or advocate for it	I'm interested but do not feel at all knowledgeable or skilled in completing this myself.
2	Lacking Community/HOA Support	Community expectations or community rules stopping native planting or advocacy	The main barrier I face to planting native plans is my HOA. How can we convince HOAs that native plants are more valuable, and more beautiful, than turf grass?

*Table 1: Synthesis of codebooks from each question in Megan Jones and Veronica Champines' surveys, showing the most common codes discussed*

Table 1: Synthesized Codebooks from each question in Dr. Megan Jones and Veronica Chapines' surveys, showing the most common codes discussed

- Question one had a total of responses was 343 with the most common code being gardening and planting with a frequency of 97.
- In question two the most common code was to increase the number of native plants in the community and removal of lawn, both with a frequency of 123 out of 524 responses.

- In question 3 the most common code was Enjoying Aesthetic Beauty, with a frequency of 189 out of 954 responses and attracting polinators 174 responses.
- In question 4 the most common code was educating others with a frequency of 26 out of 109 responses, and sharing plants with a frequency of 25.
- In the survey question asking participants about any other details to share about plant gardening and advocacy, the most common response was a lack of education and feeling like they couldn't tell others what to do.

# DISCUSSION AND CONCLUSION

## Discussion:

The purpose of this research paper was to identify the perceptions and attitudes residents had towards native plants, and any barriers or motivators people along the Front Range of Colorado encounter regarding native gardening and advocacy.

The codes synthesized from the responses represented the themes present within the target audience, including common misconceptions and motivators that could be used to implement behavior change strategies in the future. Some limitations arised when considering every person in the survey did not answer every question, which skewed the amount of responses and the consistency of feelings amongst each question.

Figure 3.



Figure 3. Example of native plant gardening landscaping in an urban setting. Photo Credit: conniewildscape1-300x225.jpg

## Reccomendation:

- In the Bay Area, CA they have sponsored and encouraged residents to plant native plants through their gardening workshops and easily accessible resources showing what plants to plant and where to get them. Adopting programs such as this can utilize this motivator to further increase native plant gardening.
- When asked what motivates people to participate in native planting and advocacy, two main themes were identified; enjoying aesthetic beauty and attracting pollinators (Table 1.)
- These motivators can be further encouraged through advocacy programs such as the water wise beautiful garden program used in the city of Sacramento ,CA. This program also supported another common response to this question which was water conservation with 168 responses.
- A common barrier in this study was the lack of knowledge pertaining to native gardening. In Washington D.C they faced similar issues and in order to educate others as well as share gardening tips with fellow community members, they set up Rooting DC, events that allow people to get together share ideas and tips, and get native plants.
- To combat the sentiment of not infrindging on other people's choices, yard signs would be a good way to facilitate social diffuse. Since It has been found that people are more

likely to participate in conservation behavior if they witness friends and community members also doing it, this would be a good passive way to facilitate social diffusion (Wokje & Steg, 2013).

## **Conclusion**

It will be a requirement for institutions to encourage urban conservation behavior on every level. Community based action is a powerful tool that can be wielded to become one of the most important factors against unsustainable activity in urban areas. Social influence and diffusion are key to changing behavior, and this is one concept examined while qualitatively analyzing the motivators and barriers people grappled with while discussing their native plant gardening behaviors.

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## ABSTRACT

Qualitative analysis can be a powerful tool in understanding audiences and allows researchers an inside look into participants' motivators to participate in pro-environmental behavior. Research shows that behavior change is dependent on many underlying factors, and one of the most important is audiences' social norms and internal beliefs. To date, there have been few studies conducting qualitative analysis on the native gardening movement, and due to its obscurity, the need for understanding audiences' perceptions has increased. In this paper we studied the barriers and motivators that people in Northern Colorado encounter regarding native plant gardening and advocacy and conducted qualitative analysis of survey responses related to native gardening actions. Through a comprehensive analysis of research papers on qualitative analysis and social norms, we were able to devise a code book by focusing on main themes from responses to five open ended questions. Through the creation of these themes, we were able to determine participants' native plant gardening and advocacy actions and the most common barriers and motivators they face. Identifying these perceptions will allow for further research to examine these key behaviors and also to implement strategies along the front range that tackle identified barriers and target key motivators.

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Background Image: [coloradoinfo-wildflower-guide-blog-bluebell.jpg](#)