How Different Stakeholder Community Members' Perception of Coyotes May Impact Coyote Management Plans

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Abstract

Conflict between residents of Georgia and wildlife is rising after the eradication of red wolves, the continuing increase of coyote and human populations in Georgia, and increased urbanization. Coyotes act as pest control and fill crucial roles for our ecosystems, but humans tend to negatively associate with the species. Mowry et. al. made it clear that learning to coexist with coyotes rather than hunt them is the most efficient management plan for the species and residents. If humans stopped hunting them, coyotes could maintain their own population size. Thus, learning to coexist with them becomes increasingly more important. This study considers the perception and ideas of community members to determine best management practices of coyotes in urban areas. Participatory action research (PAR) was used to discover these perceptions and ideas from community members themselves. It is still unclear if different regions of Georgia will need differing management plans specific to their areas (rural or urban). However, this study has made it clear that the majority of participants have a positive outlook of coyotes, believe there are more benefits and opportunities associated with managing coyotes than there are costs and risks, and agree that experts in the field, government entities and the community should be involved in decision making of coyote management plans.

Introduction

As more coyotes moved into the southeast over the last three decades, residents have complained more about them which prompted governmental states to discuss how best to manage the species. However, current coyote management plans are dismissing the fact that human–wildlife conflicts are also human–human conflicts. These management plans are only dictated by differing demands for resources, thus solutions to these conflicts require an interdisciplinary approach (Amit & Jacobson, 2018). Basically, there are multiple moving components requiring attention in order for these plans to be successful. Much like other conflict management plans, human-coyote conflict management in Georgia is driven largely by a top-down approach, rather than by the needs and concerns of affected communities (Amit & Jacobson, 2018). Similarly, this study will utilize techniques that include multiple stakeholders in order to explore divergent opinions. One study of discovering incentives to coexist with jaguars and pumas in Costa Rica adapted the Delphi technique to identify six incentives (Amit & Jacobson, 2018). Participatory methods can help overcome these potential biases. The use of citizen science to understand the issues and discover solutions has only recently been put into action, specifically in urban areas such as the city of Atlanta (Mowry et. al., 2021). How citizens perceive coyotes may differ depending on the communities they are in, where they live, or what they do. This should ultimately determine how coyotes are managed in different areas. Similar studies to this one have discussed that effective management strategies need to include varying stakeholder ideas in decision making and action planning (Amit and Jacobson, 2017 & 2018; Maynard, L., Jacobson, S.K., and Kamanga, J., 2020). From 2015 to 2018, Mowry and other researchers surveyed Atlanta residents in hopes of providing the public with a better view of the coyote population in the area and an understanding that coexistence is the best management

strategy (2021). This study will expand Mowry's ideas and attempt to mend the gap between how coyotes are managed across the state and how residents view coyotes.

With the eradication of red wolves, the continuing increase of coyote populations in Georgia and increasing urbanization, conflict between residents and wildlife, specifically coyotes, is rising (Larson, R.N., 2020; Mowry et. al., 2021). Coyotes can easily live in urban areas and adapt to eating the resources found there. Though natural prey would be limited in urban areas, some prey populations are as abundant as in natural areas. This can include different populations of rodents such as rats, squirrels, and mice. Coyotes may also subsidize their diet with anthropogenic items such as discarded human food, pet food, human-associated fruits, and even domestic animals (Larson, R.N., 2020; Georgia Department of Natural Resources [GA DNR], 2017; Jaques & Mengak, 2019). Environmentally, coyotes are necessary to the health of our ecosystems. Coyotes are consistently wrongfully prosecuted for various mishappenings. Even though coyotes act as pest control and fill crucial roles for our ecosystems, humans are falsely concerned about the spread of disease such as rabies, attacks on livestock, pets, and humans particularly in suburban and urban areas (GA DNR, 2017; Jaques & Mengak, 2019). Although coyotes are consistently considered the top cause of predator-related cattle deaths, their damage is substantially less than several nonpredator-related causes of death, such as respiratory problems, digestive problems, calving problems, weather-related problems, and other nonpredator-related problems (Brewster et. al., 2019). Coyotes are controversially considered a non-native species, there is no closed hunting season for them (Jaques & Mengak, 2019).

A previous survey study found that more than 50% of Atlanta residents perceived coyotes as a threat, yet, 88% of coyote sightings were described as benign (Mowry et. al., 2021). Learning to coexist with coyotes rather than hunting them is the most efficient management plan

for the species and residents (Mowry et. al., 2021). While the Georgia Department of Natural Resources (GA DNR) and the University of Georgia's Warnell School of Forestry and Natural Resources do provide information on coexistence management strategies such as removing attractants or using guard animals, they do also support hunting and lethal control as management options for coyotes (GA DNR, 2017; Jacques, B.W. & Mengak, M.T., 2019). As coyotes continue to grow and learn, their ecological responses are modified and adjusted. Studies have shown that lethal control disrupts hierarchy within coyote groups. It opens up more opportunities for coyotes to reproduce. In turn, this encourages larger litter sizes by decreased competition for food and habitat, and an increased chance for pups to survive (Crabtree and Sheldon 1999; Kilgo et. al., 2017). More critically, generational training of coyote groups promotes consumption of livestock and pets instead of wild prey (Crabtree and Sheldon, 1999; Mitchel et al, 2004). In 2019, a study was conducted on the cost effectiveness of coyote management protocols in protecting livestock which is one study that focused on discovering management plans for farmers rather than urban citizens (Brewster, 2019). Brewster mentioned that farmers need to consider all other management plans before looking to lethal action (2019). Another study suggests that if farmers are using wire strand fencing, electrifying the fence may provide some extra encouragement for the coyote to leave the area. Moving the devices, changing sounds, and light patterns may also help keep coyotes away for longer periods. Another option is to place a guard animal such as dogs, llamas, donkeys or mules with the flock or herd (Jaques & Mengak, 2019). Essentially creating layers of protection in any sense is the best way to keep coyotes at bay. If humans stopped hunting them, coyotes could maintain their own population size (Crabtree and Sheldon 1999; Kilgo et. al., 2017). Thus, learning to coexist with them becomes increasingly more important. So, what management plans do different

communities in Georgia prefer before turning to lethal action? How do the plans for rural communities differ from how urban residents may choose to manage coyotes? Does the perception of coyotes impact how they are managed?

This study will consider the perception and ideas of community members to determine best management practices. Participatory action research will be used to discover these perceptions and ideas from community members themselves. Community-based natural resource management is a prevalent approach to conservation. Engaging diverse local participants can strengthen the compliance of community members with new regulations which increases the success of the project (Maynard, Jacobson, & Kamanga, 2020). This study will uncover how different communities in Georgia perceive coyotes, who the community members think should be involved in the making of management plans, and what benefits, costs, risks and opportunities residents predict with managing coyotes.

Methods

Community members across three different communities within Georgia were invited to a focus group discussion. These three communities include: Zoo Atlanta, college students, and local environmentalists. With the help of Zoo Atlanta's education department, a flier was sent out to Zoo Atlanta volunteers and staff members inviting them to a focus group discussion held at the zoo, creating the Zoo Atlanta community . An adjunct professor from Emory University and co-director of the Atlanta Coyote Project (ACP) invited college students to join a focus group discussion held on Emory University's campus, creating the college student community. Audience members at an environmental seminar hosted by Environment Sandy Springs were invited to join a focus group discussion after the seminar, creating the local environmentalists community.

Figure 1. Example of Flier invitation for a focus group meeting.

As participants arrived, they were given a consent form, the short survey (see appendix), a stack of Post-It notes and a pen. Each focus group discussion started with an introduction to the topic and outline of the participatory action research (PAR) activity. Another coyote study recently done in Atlanta discussed the increasing importance of public participation in scientific research, because it can be useful when investigating the distribution and abundance of organisms across space and time and present a better understanding of global biodiversity (Mowry et. al., 2021). Incorporating community participation promotes community members as stakeholders in urban wildlife and this leads to informed decisions about wildlife management (Mowry et. al., 2021). For this study, there were three prompts on poster boards posted around

the room. Everyone was broken into three groups and each group will be assigned a prompt for the first round. The rules for this PAR activity included:

- two-three minutes at each prompt
- write down answers of ideas, opinions and/or thoughts on Post-It notes
- encouraged to write down as many ideas, answers, thoughts, and/or opinions as they can (as many Post-It notes as necessary)
- only one answer per Post-It note (as many notes as necessary)
- post each note to the poster board with the prompt
- if someone else in the group puts up the same idea as another, it is okay
- a one minute warning was given before the end of each round
- if at any point a participant wanted to stop or leave, they could do so

The goal of this PAR activity was for the participants to write down as many initial thoughts as they could and add each of them to the poster board for each prompt. If everyone in the group put up the same idea, that was perfectly okay.

Data tools

With the use of PAR, each focus group meeting consists of a brief introduction including instructions for the PAR activity they are participating in, signing the consent form and filling out a short survey. The survey includes questions about where they live, their age, their gender and their experience with coyotes (see Table 1). There are a total of seven questions and the survey should take no more than 5 minutes to complete. Participants can also use the survey to indicate if they would like to receive the results from this study once it is complete. Data from this survey will be saved and protected for a minimum of six years.

Number	Question Style	Question
1	Multiple Choice	What is your age?
2	Yes/No	Do you currently live in the Atlanta Metro area?
3	Yes/No	Do you currently live outside the Atlanta Metro area?
4	Likert Scale (1-5)	I live in a rural area.
5	Likert Scale (1-5)	I live in an urban area
6	Yes/No	Have you personally had a direct interaction with a coyote near your home?
7	Yes/No	Have you had an indirect interaction with a coyote near your home?

Table 1. List of questions from the short survey distributed at focus group meetings.

The PAR activity each focus group was participating in involved three prompts with prompt one being “What comes to mind when you think of coyotes?”, prompt two being “What are the benefits, costs, risks and opportunities with managing coyotes?”, and prompt three being “Who should be involved in the decision making of coyote management plans?” Responses to these prompts were collected on the poster boards of which the prompts are presented. After each focus group meeting, the post-it notes posted by participants for each prompt were categorized into themes, categories, or topics and counted (Maynard, Jacobson, & Kamanga, 2020). The frequency of each category can help determine how each community prioritizes these themes and ideas.

Analysis

Google Forms provides a one-click transport of the responses into Google Sheets. In Google Sheets, data was analyzed by frequency and proportions. The data from the short

survey was analyzed for the total number of participants across all three focus group meetings as well as specifically for each community.

Data from the PAR activity was collected on the poster board and responses were categorized based on how each community responded to the prompt. For the environmentalists community, the Zoo Atlanta community and the college student community, responses for prompt one were created and categorized as positive, negative or neutral. For prompt two, all three communities created responses were categorized as benefits, costs, risks or opportunities. For prompt three, the environmentalists community created responses that categorized as local community, government entity, experts in the field, and general groups or individuals. The Zoo Atlanta community had responses that fit into those categories created by the environmentalist community and added categories such as academic members and property owners. The college student community only provided responses for prompt three that could be categorized as local community, government entity, or experts in the field. This data was collected in Google Sheets which you can find in the appendix. This data is presented in both more formal tables, charts, and graphs, but also in more creative ways such as word clouds. These word clouds provide a visual representation of how each group prioritizes those ideas, opinions or thoughts.

Results

Short Survey

Overall, there were 31 responses to the short survey which is consistent with the number of participants that attended the different focus group meetings in total. Of the respondents, 13% of them were 18-24 years old, 13% were 25-34 years old, 16% were 35-50 years old, 29% were 51-64 years old and 29% were 65+ years old. A majority of the respondents stated that they live

in the Atlanta Metropolitan area (87%) with 13% stating that they live outside the Atlanta Metropolitan area. According to the Metro Atlanta Chamber, the Atlanta Metropolitan area consists of 29 counties that stretch from Meritwether county southwest of Atlanta to Morgan County east of Atlanta to Dawson county northeast of Atlanta to Carroll County west of Atlanta. This area is the eighth largest metro area in the nation (2022). On average, respondents strongly disagree that they live in a rural area and agree that they live in an urban area (see Figures 2 & 3).

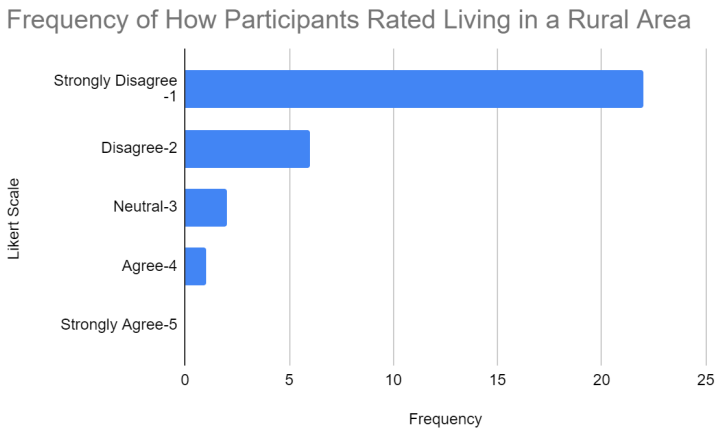

Figure 2. Bar graph showing the frequency that participants agree or disagree with living in a rural area.

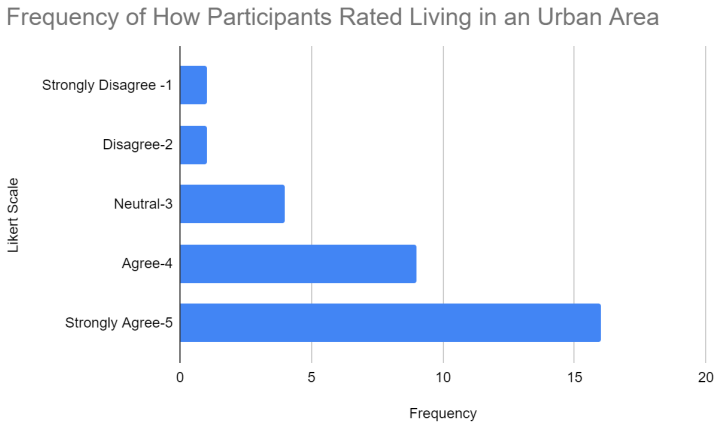

Figure 3. Bar graph showing the frequency that participants agree or disagree with living in an urban area.

Thirty-two percent of respondents stated that they have had an indirect interaction with coyotes and 55% stated that they have had a direct interaction (see Figures 4 & 5). Based on a recent similar study, an indirect interaction included sightings of a coyote at a distance with no direct encounter and/or knowing livestock or pets were either injured or killed by a coyote. While direct interactions are defined as an encounter with a coyote at close range, seeing coyotes in close proximity on your property, and/or being attacked by a coyote.

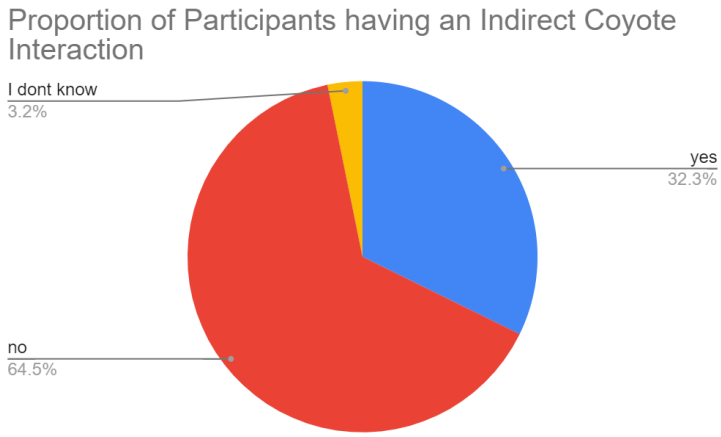

Figure 4. Pie graph presenting proportion of participants who have had an indirect interaction with a coyote(s).

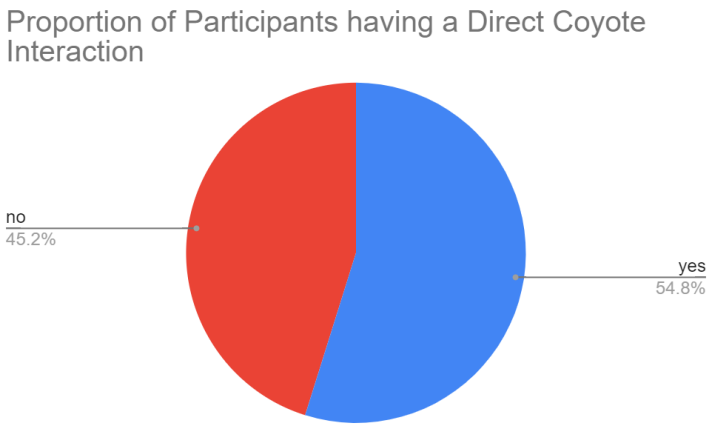

Figure 5. Pie graph presenting proportion of participants who have had a direct interaction with a coyote(s).

These results are mostly consistent with the results of a survey study conducted in the fall of 2021. This study found that 13% of their participants had experienced indirect interactions and

43% had experienced direct interactions with coyote(s) (Meyer, 2021).

Participatory Action Research Activity

Prompt one asked participants "what comes to mind when you think of coyotes?"As stated before, each community provided responses to this prompt that could be categorized as positive, negative or neutral. In total, there were 94 responses to prompt one; the environmentalist community (focus group one) provided 33 responses; the Zoo Atlanta community (focus group two) provided 61; and the college student community (focus group three) provided 13 responses. Positive responses included notes about maintaining ecosystem health, correlating positive memories or connections, and positive descriptors such as "smart", "beautiful", or "resourceful". Negative responses included notes about overpopulation, predator status, or negative descriptors such as "aggressive", "pests", or "invasive". Neutral responses included any notes that could not be categorized as positive or negative. This includes notes about coyote history, social structure, or general facts. For example, if a note only mentioned coyotes being predators, it would be categorized as a negative response. However, if the note indicated "apex predator", this was categorized as neutral since this is just a fact about the species. Overall, 43.6% of the responses were categorized as positive, 30.9% were categorized as negative, and 25.5% were categorized as neutral.

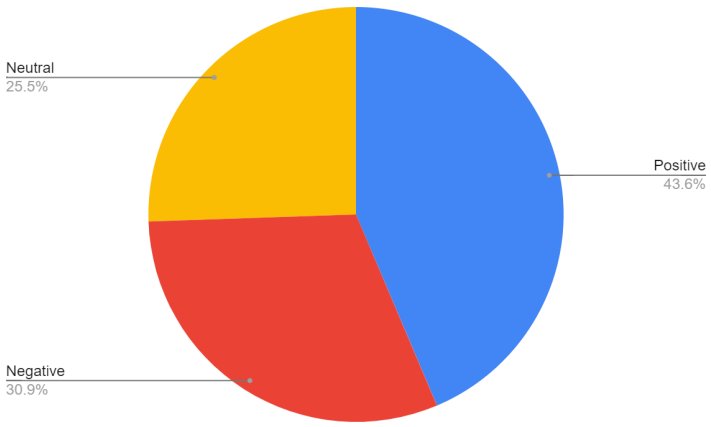

Figure 6. Pie chart showing the proportion of responses categorized as positive, negative or neutral.

Word clouds were also created as a means to visualize the amount of times an idea or answer was used by participants for each of the prompts. Figure 7 below showcases the word cloud that was created from the responses of all the participants for prompt one. Predator was the word mostly used to describe coyotes along with animals, habitat, loss, control, and misunderstood.

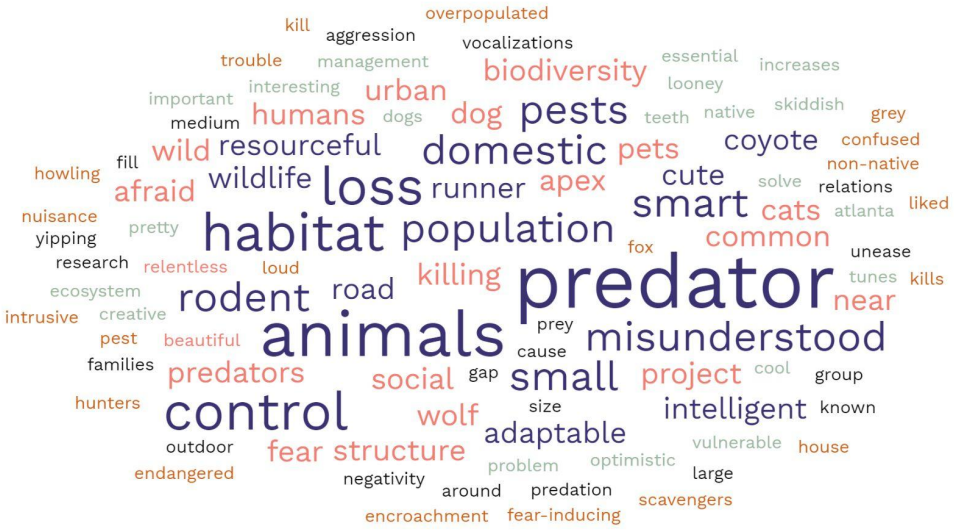

Figure 7. Word cloud visualizing the participants responses to what comes to mind when you think of coyotes.

Prompt two asked participants “what are the benefits, costs, opportunities and risks with managing coyotes?” As stated before, each community provided responses that could be categorized as benefits, costs, risks or opportunities. In total, there were 96 responses to this prompt; 37 from focus group one, 48 from focus group two, and 11 from focus group three. Overall, 39.6% of the responses were categorized as benefits, 24% as opportunities, 20.8% were categorized as costs, and 15.6% as risks.

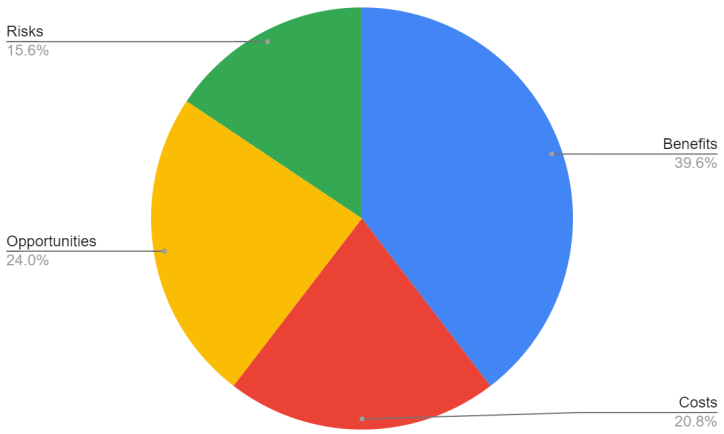

Figure 8. Proportion of responses that were categorized as benefits, costs, risks, and opportunities with managing coyotes.

Figure 9 below showcases the word cloud that was created from the responses of all the participants for prompt two. Coyotes, ecosystem, education and balance were the top four words mostly used to respond to this prompt along with animals, control, biodiversity, and management.

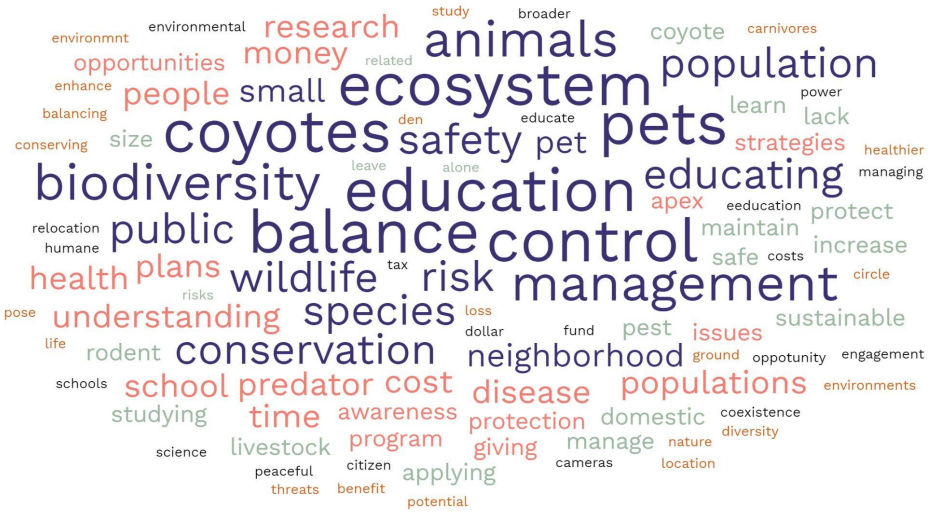

Figure 9. Word cloud visualizing the participants responses to what are the benefits, risks, costs and opportunities with managing coyotes.

Prompt three asked participants “who should be involved in the decision making of coyote management plans?” In total, there were 83 responses to this prompt; 32 from focus group one, 43 from focus group two, and 8 from focus group three. The environmentalists community created responses that categorized as local community, government entity, experts in the field, and general groups or individuals. The Zoo Atlanta community had responses that fit into those categories created by the environmentalist community and added categories such as academic members and property owners. The college student community only provided responses for prompt three that could be categorized as local community, government entity, or experts in the field.

Table 2 below shows the frequency of each category created within each focus group. Focus group one represents the environmentalist community. Sixteen participants attended this meeting. This community provided a total of 32 responses to this prompt. At this focus group meeting, government entities were mentioned the most frequently (10). Experts had 9 counts, local communities had 8 counts, and general groups or individuals had 5 counts. Focus group 2 represents the Zoo Atlanta Community. There were 13 participants at this meeting. This community provided a total of 43 responses to this prompt. At this focus group meeting, experts in the field were mentioned the most frequently (17). Government entities had 11 counts, local communities had 9 counts, and general groups or individuals had 2 counts. This community also created two more categories: academics and property owners; each with 2 counts. Focus group three represents the college student community. Unfortunately with misrepresentation, there were only three participants at this meeting. Due to this, the methods were modified slightly by requiring all participants to respond to each prompt at the same time. This meant that all participants together started with Prompt one then after three minutes moved to prompt two and

ended the meeting with prompt three. This was done to keep the consistency of a group setting. This community provided a total of 8 responses for prompt three. At this focus group meeting, experts in the field was mentioned the most frequently (6). Government entities had 1 count, local communities had 1 count.

Category	Focus Group 1	Focus Group 2	Focus Group 3	Total
from FG1				
Local community	8	9	1	18
Government	10	11	1	22
Experts	9	17	6	32
General	5	2		7
from FG1 + FG2				
Academics		2		2
property owners		2		2
Total	**32**	**43**	**8**	**83**

Table 2. This table shows the frequency of each category created by participants of each focus group meeting and how many times that category was mentioned.

Out of all the responses from each community for this prompt, experts were mentioned more times (32) than any other category making up 38.6% of the responses. Government entities counted for 22 of the responses (26.5%). Local communities made up 21.7% of the responses. General groups or individuals represented 8.4% of the responses. Both academics and property owners each represented 2.4% of the responses.

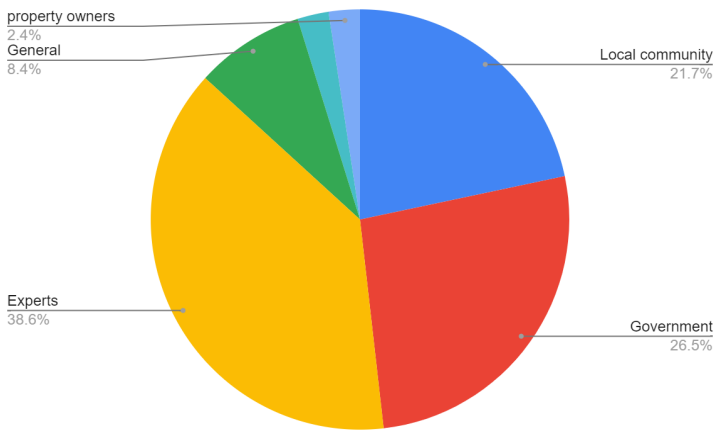

Figure 10. Proportion of each category as a response to prompt three across all three communities.

Figure 11 below showcases the word cloud that was created from the responses of all the participants for prompt three. Wildlife, local, and community were the words mostly used to respond to this prompt along with resources, government, and organizations.

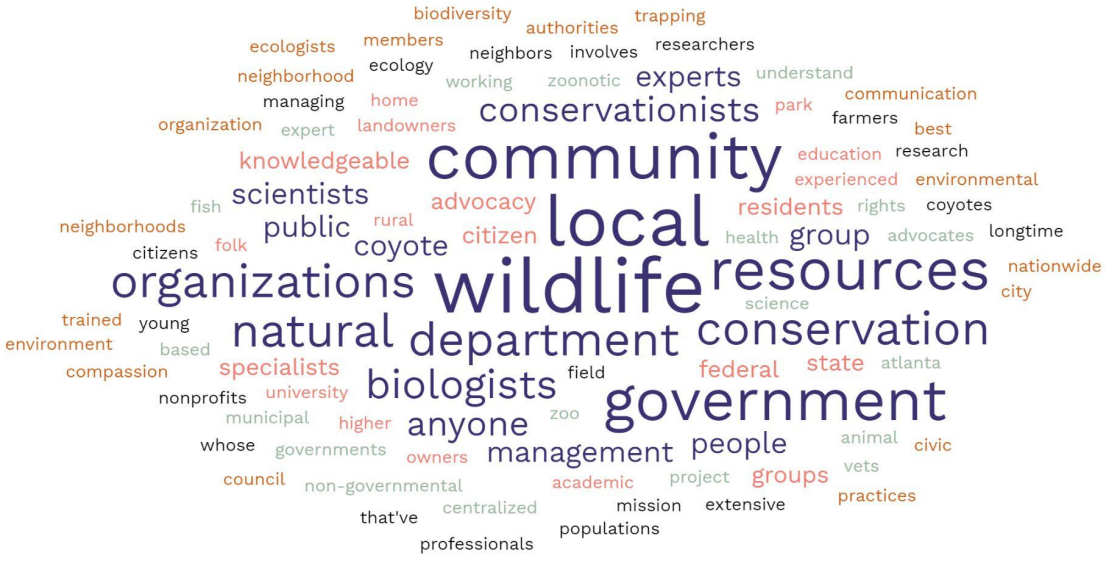

Figure 11. Word cloud visualizing the participants responses to who should be involved in the decision making of coyote management plans.

Discussion

Based on the results of this data, the majority of participants have a positive outlook of coyotes, believe there are more benefits and opportunities associated with managing coyotes than there are costs and risks, and agree that experts in the field, government entities and the local community should be involved in the decision making of coyote management plans. These results support the ideas that Mowry and others discussed which stated that Atlanta residents should expect to encounter coyotes and learn how best to coexist with them (2021). Similarly these studies demonstrate how effective community science is for better understanding urban

coyotes (Mowry et. al., 2021). The Atlanta Coyote Project advises residents to take preventive measures through passive management to avoid coyote conflict. They list several ways to start coexisting with coyotes including: never feed coyotes and always prevent their access to food around your home, make trash cans inaccessible and secure them with tight lids, properly dispose of dead animals, including any nearby roadkill, do not allow pets to roam freely and take them indoors at night, consider installing fencing and motion-activated lights to discourage predators, and keep small livestock and poultry in enclosed areas. If you see coyotes near your home and feel uneasy about their presence, make loud noises, spray them with a hose, and generally make them feel unwelcome (Atlanta Coyote Project, 2021). In the case of farmers, it is important to understand that persistent coyotes may overcome neophobia more rapidly than coyotes that do not exhibit persistent behaviors (Young, Draper, & Breck, 2019).

There is an understanding that successful management strategies have been the product of community participation in management planning. This study provides the first step to understanding what role the community will play in this decision making process. After this study uncovers how different communities in Georgia perceive coyotes, who they believe should be involved in the decision making of management plans, and what benefits, costs, risks and opportunities they predict with managing coyotes, the results can be used to discuss ideas and priorities with those who should be involved. The results of this study show that some people in the Atlanta area believe experts in the field, government entities, and local communities should be involved in the decision making of coyote management plans. It would be interesting to take this focus group activity to those groups of people (experts, governments and more members of the community) and compare how all the answers differ. Beyond that, those focus group meetings should dive deeper into the planning and begin answering more specific questions.

Doing this would build on the ideas and provide more support for the notion that different areas of Georgia will require different management plans. For instance, specifically comparing the responses from community members in rural areas versus urban areas would provide insight on how those management plans will differ. The prompts for the next round of focus group meetings would change to incorporate questions that will give a better understanding of what these groups of people think the issues are with coyotes, how these groups of people think coyotes should be managed, and what are the solutions they see for coexisting with coyotes.

The creation of management plans should involve and evolve with the community it affects. Amit and Jacobson attempted this approach of creating different levels for each round of focus group meetings, that build on each other, to develop a well-rounded understanding of how these management plans should be implemented. Many livestock producers rely on lethal control, and most employ nonselective strategies aimed at local population reduction. Sometimes this approach is effective; other times it is not (Mitchell, Jaeger, & Barrett, 2004). The results of Amit and Jacobson's incentive study discovered that the basic needs of ranchers and rural communities needs to be addressed in order for them to commit to wildlife conservation (2018). This could also be the case for urban dwellers. Overall, it is important to include all stakeholders' approaches to mending the human-coyote conflict in Georgia.

Social marketing theory suggests that behavioral change strategies emphasize the most valued benefits and overcome the most perceived barriers, in terms of human motivations rather than just traditional economic values (Amit & Jacobson, 2017). Financial incentives as a solution to coyote conflict have been spoken about for years, but they do not cover other key motivations. These motivations may include education, technical assistance, or measures that benefit social norms (Amit & Jacobson, 2017). Essentially, monetary incentives do support pro-conservation

action, but it doesn't do enough in the long run. Time will only tell the successes of nonfinancial incentives as a means to mitigating human-coyote conflict. These are the ideas that future research should include. As novel as coyotes are to this region of the country, it is important to gain a more clear understanding of how they have integrated into our environments. Choosing to protect coyotes could allow for more possibilities in the future such as rewilding red wolves in Georgia (Bohling et. al., 2016). A research study done in Yellowstone describes the ecological role that coyotes play in that environment. That study discovered that wolves maintained coyote populations in the region which could potentially be the story for coyotes in Georgia (Crabtree & Sheldon, 1999). Learning to coexist with coyotes can provide so many benefits to our environment including the maintenance of health along with population control.

Action component

My plan of action after seeing the results of my focus group study is to continue hosting focus groups with more communities within Georgia, such as, hunters, farmers, government officials, more local communities, experts and other responses that participants wrote from the prompt that asked who should be involved in management plan decision making. If I am able to include a few more of these communities, I hope to publish an article of this study. This could ensure more confidence when writing to policy makers about creating management plans for coyotes. Currently, there is only a shoot-to-kill policy for coyotes in the state of Georgia, but research supports the fact that coyotes typically have larger litters where they hunted more frequently. This only strengthens the notion that hunting coyotes only creates a vicious circle of conflict. The goals of my IAP were to gain a better understanding of different stakeholders perceptions of coyotes, allow stakeholders to have a say in if coyotes should be managed, and prioritize who should be involved in the making of those management plans. With these objectives, coexistence could be possible in helping to mitigate conflict between humans and

coyotes.

After gathering inquiries from community members, I was able to gather data that supported creating management plans for coyotes which in turn protects wolves and other wildlife in their habitats. These management plans will aid in decreasing human-coyote conflict in Georgia. Other researchers also stated that creating room for collaboration leads to more effective decision-making and programme implementation (Maynard, L., Jacobson, S.K., and Kamanga, J., 2020). In order for me to do this, I invited different communities in Georgia to their own respective focus group meeting. I got participants from an environmentalist community, some Zoo Atlanta associates, and a group of local college students; even though I also wanted to include hunters and farmers. Once I am able to include some of the other communities I have mentioned above and I am able to analyze all the responses, the results will be used to support management plans that should be created in order to protect Georgia environments and mitigate human-wildlife conflict. I could present the information from the results in an article that discusses how the results can influence management plans for the species. I will reach out to representatives by phone call or email and ask to meet with them to discuss the issue. I anticipate continuing to struggle in having hunters and farmers participate in this focus group studying, but I am keeping an open mind. By including these groups in the discussion and allowing them the space to provide their ideas, I hope to mend the gap between conservationists and agriculturists in Georgia. Hunters and farmers both play a major role in human-coyote conflict. Through these focus group meetings, I hope to provide hunters and farmers with reassurance that conservationists hear them and support them. I want to work with all members of my community to educate them, support them and learn with them. I would not be surprised if it took years before I am able to see a change happen.

Conclusion

In conclusion, this study supports citizen science by involving community members in the discussion of how to best manage coyotes. The goal of this study was to understand how different communities in Georgia perceive coyotes, who they believe should be involved in the decision making of management plans, and what benefits, costs, risks and opportunities they predict with managing coyotes, research can use the results to discuss ideas and priorities with those who should be involved. The results of this study show that the majority of participants have a positive outlook of coyotes, believe there are more benefits and opportunities associated with managing coyotes than there are costs and risks, and agree that experts in the field, government entities and the community should be involved in decision making of coyote management plans. There is an understanding that successful management strategies have been the product of community participation in management planning. This study provides the first step to understanding what role the community will play in this decision making process. The creation of management plans should involve and evolve with the community it affects. As financial incentives have already been discussed, the success of nonfinancial incentives as a means to mitigating human-coyote conflict also has potential to aid in management plan success. Future research should incorporate these ideas while also inviting members of the communities participants in this study had as answers to prompt three. Learning to coexist with coyotes can benefit the maintenance of environmental health through population control, seed dispersal and waste clean up.

Literature cited

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Appendix

Short Survey: https://forms.gle/5SHjJBss7Ez8HzHa9

Short Survey responses: https://docs.google.com/spreadsheets/d/1aCztSQPpCgwsESiJ7rqHCGSvCTLA-r1xoUXqfi1Wb5k/edit?usp=sharing