

Exploring Positive Youth Development and Civic Engagement in an
Environmental Action Program: A Saint Louis Zoo Case Study

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by
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The undersigned, appointed by the dean of the Graduate School, have examined
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Exploring Positive Youth Development and Civic Engagement in An
Environmental Action Program: A Saint Louis Zoo Case Study

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To my mom, Melissa Barnason, for her constant support, love, compassion, and
never-ending empathy for all the things that I do and

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teaching me to follow it.

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Table of Contents

Acknowledgements	ii
Table of Contents	iv
List of Tables	vi
List of Figures	vii
ABSTRACT	viii
Introduction.....	1
Background	1
Zoo ALIVE and Bye to Bags.....	4
Literature Review.....	8
The Role of Zoos and Aquariums in Civic Engagement.....	8
Positive Youth Development	12
Environmental Action	16
Significance of the Study	19
Research Questions	21
Methods.....	21
Data Collection	21
Survey Procedure	21
Interview Data	25
Data Analysis	27
Survey Analysis	27
Interview Analysis	28
Results	29
Participants	29
Results on RQ 1: To what extent does the Bye to Bags environmental action program achieve PYD and civic engagement outcomes from participants' perspectives?	30
Results on RQ 2: To what extent do outcomes differ between volunteers engaging in high vs. low levels of volunteer hours?	31
Results on RQ 3: How do these PYD outcomes, in the context of Bye to Bags, influence a young adult's inclination for civic engagement?	32
Results on RQ 4: Based on known PYD practices, What PYD practices exist in Bye to Bags from alum and youth professional's perspectives?	33
Engagement.....	33

Adult Relationships	35
Skill-Building	35
Strategic Support and Collaboration	36
Civic Engagement.....	38
Routine and Structure	39
Peer Relationships.....	40
Policies and Practices	40
Content Analysis.....	41
Discussion	44
Limitations and Future Study.....	50
Conclusion.....	51
References	53
Appendix 1: Informed Consent for Youth.....	60
Appendix 2: Informed Consent for Adults	62
Appendix 3: Bye to Bags Survey	63
Appendix 4: Alum Interview Questions	68
Appendix 5: Youth Professional Interview Questions	70
Appendix 6: Interview Activity for Alums and Youth Professionals	72

List of Tables

Table 1 Racial and Ethnic Demographics of Zoo ALIVE Participants, Residents of St. Louis County, and Residents of St. Louis City	5
Table 2 Table of Constructs for PYD and Civic Engagement Outcomes	27
Table 3 Data Collection, Measurement and Analysis Synopsis.....	29
Table 4 Sociodemographic Characteristics of Participants.....	30
Table 5 Descriptive Statistics of Survey Responses for Outcomes	31
Table 6 Independent T-Tests Comparing Hours Volunteered	32
Table 7 Multiple Regression identifying Empowerment as strongest indicators for Civic Engagement	33
Table 8 Percentage and Frequency for Self-Reported Evaluation on the PYD Practices among Alums and Youth Professionals	43

List of Figures

Figure 1 Environmental action framework	4
Figure 2 Bye to Bags Environmental Action Framework	7

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ABSTRACT

To become thriving and contributing members of society, a vital skill for youth to learn is civic engagement behaviors. Civic engagement can manifest itself as volunteering, community engagement, or behaviors such as voting and campaigning. Recent trends show youth in the past two decades have been less civically engaged than their counterparts up to 70 years ago. Research suggests that Positive Youth Development practices in environmental action youth programs yield environmentally conscious and active adults. Furthermore, other research suggests that environmental action is one avenue in which successful civic engagement education and practice takes place.

This case study turned to one youth program at the Saint Louis Zoo and examined positive youth development practices, positive youth development outcomes, and civic engagement outcomes in the context of an environmental action program. The program evaluation case study took a mixed-methods approach and involved 47 high schoolers and young adults for a survey determining the presence or absence of positive youth development outcomes. Of the alum survey respondents, 8 were interviewed, additionally, 5 youth professionals also participated in semi-structured interviews. The results of the study suggest that positive youth development practices are present in the

program and that most youth experience both positive youth development and civic engagement outcomes. There was a significant difference in self-reported positive youth development and civic engagement outcomes by hours volunteered in the youth program.

Introduction

Background

Society faces a potential downfall: lack of civic engagement. Youth are less civically engaged globally, and, specifically, more disengaged than they have ever been in U.S. History (Bastedo, 2015; Youniss, Bales, Christmas-Best, Diversi, McLaughlin, & Silbereisen, 2002). Civic engagement is defined as involvement in one's community such as volunteering or political behavior, like voting (Chawla & Cushing, 2007; Youniss et al., 2002). Between 2004 and 2010, Canada saw an increase in the number of youth volunteers, but a decrease in average hours volunteered. The four areas that saw the most volunteer service were arts and culture, sports and recreation, law and politics, and religion (Vézina & Crompton, 2012). In 2010, the average number of volunteer hours for the four groups ranges from 117 to 127 hours, whereas the "environment" category only averages 60 hours per volunteer (Vézina & Crompton, 2012). While these numbers may seem promising, the same study claims only 10% of volunteers accounted for 53% of all volunteer hours. Compared to the overall average of 60 hours per volunteer, the same 10% of volunteers average 390 hours in volunteer activity.

An analysis of civic engagement trends from 1980 to 2010 revealed that youth have grown more civically disengaged over time, especially in electoral civic engagement (Syvertsen et al., 2011). In 1964, about 50.9% of young adults (age eighteen to twenty-four) voted in the presidential election. According to the U.S. Census Bureau, about 46.1% of young adults voted in the 2016 presidential election, compared to the voting participation of 58.7%-70.9% - from all other age demographics (File, 2017; File 2014). Andolina, Jenkins, Zukin, and Keeter (2003) state that most civic behavior is learned at home from parents, older siblings, extended family, or close

family friends. Andolina et al. (2003) argue that a potential solution for lack of civic engagement behaviors in youth, like volunteering and voting, is through volunteer service, community engagement, and at-home education through modeled behavior from family members.

The National Science Foundation offers that engaging the public with science in an informal science education (ISE) setting will not only increase knowledge and understanding of science but will also increase people's participation in society (McCallie, et al., 2009). ISE includes offering science education materials and programs to the public in out-of-school settings. ISE also encourages civic skills through empowerment and development and ISE works to increase the knowledge and awareness around science, offering materials to create scientifically literate citizens. Finally, ISE works to integrate all cultural and social narratives from staff and participants (McCallie, et al., 2009). Some common ISE settings are science centers, zoos, aquariums, and nature centers. Some scholars argue that using positive youth development practices in any out-of-school setting, especially ISE, can increase the likelihood of civic engagement (Schusler, Krasney, Peters & Decker, 2009).

Positive Youth Development (PYD) is a large-scale theory in developmental psychology promoting youths' individual strengths through an array of practices such as positive attitudes, caring adults, high expectations, and more, to help youth thrive (Scales, Benson, Leffert, & Blyth, 2000). Thriving is a state of being where self-awareness of one's talents, interests, passions, and aspirations are recognized and pursued (Scales, Benson, & Roehlkepartain, 2011; Witt & Caldwell, p2018). PYD practices promote outcomes such as the identified sparks (sometimes described as

passions), recognition of youth voice, and feelings of empowerment and opportunities for relationships, or the 5 C's (Caring, Confidence, Competence, Connection, and Character), all of which are empirically linked to thriving in adulthood (Scales et al., 2011). PYD practices have been adopted by most youth-serving organizations in the hope that it will set adolescents up for success in adulthood (Witt & Caldwell, 2018).

Many environmental action programs are linked to increased civic engagement in youth, but these programs are most successful when youth practitioners adopt positive youth development practices (Chawla & Cushing, 2007; Schusley, Krasney, Kalbacker, Stedman, & Russ, 2015). “Emmons (1997) defines environmental action as deliberate decision making, planning, implementing, and reflecting in a group to accomplish a group goal pertaining to a specific environmental outcome” (as cited in Schusler, Krasney, Peters & Decker, 2009, p. 3). Environmental action (EA) is a framework that includes a group of people identifying an environmental issue, brainstorming solutions, agreeing on a solution, implementing the solution, and involving the community (See Figure 1) (Jensen & Schnack, 1997). It is important to note that environmental action can occur in an urban, suburban, or rural environment and be classified as direct (in-situ), indirect (in-situ), or vicarious (ex-situ) experiences (Garst, 2018). Some environmental education scholars and academics argue that environmental action and civic engagement are synonymous as they are both akin to community engagement and promotion of politically charged behaviors later in life (Schusler & Krasney, 2010; Schusler et al., 2015). We argue that coupling PYD with environmental action in an ISE setting could be the recipe for thriving adults who develop conservation orientated behaviors and connections to their communities and civic processes.

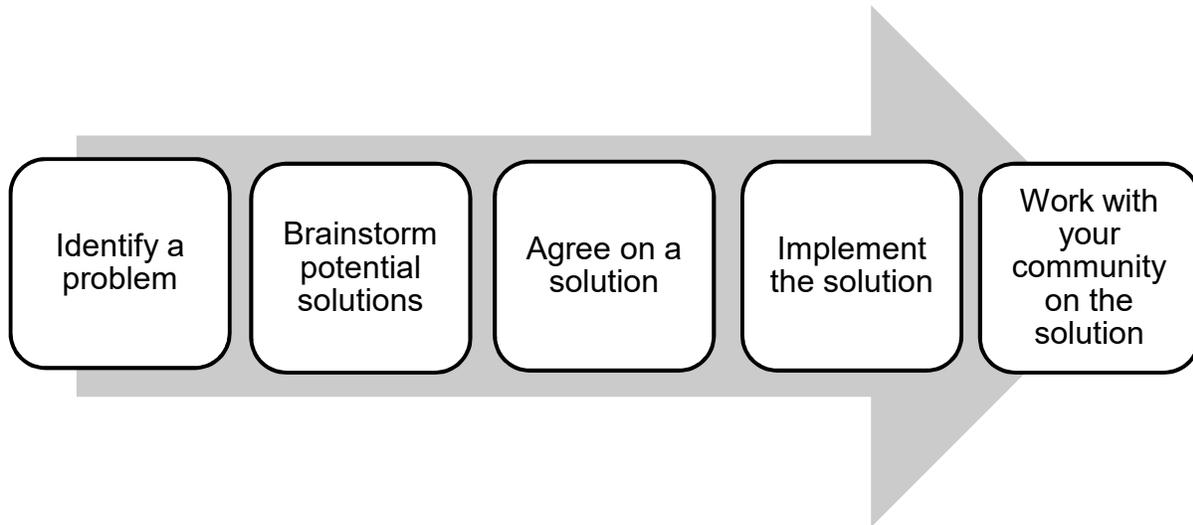


Figure 1 Environmental action framework (adapted from Jensen & Schnack, 1997)

Zoo ALIVE and Bye to Bags

Zoo Active Leaders in Volunteer Education (ALIVE) is a teen volunteer program dedicated to offering teens exceptional life experiences in a professional environment. Zoo ALIVE also dedicates itself to creating future conservation leaders through youth-oriented programming and offering connection to teens through social opportunities (St. Louis Zoo Education Department, personal communication, April 3, 2020; Zoo ALIVE Teen Volunteers, 2020). Zoo ALIVE began in 2004 with five volunteers pulled from a pool of previous junior counselors from Camp Kangazoo. The program has now grown to an average of 70 teen volunteers committed to service at the zoo each year and is a diverse group of teenagers (See Table 1). Most volunteers are from St. Louis City and St. Louis County (St. Louis Zoo Education Department, personal communication, April 3, 2020; Zoo ALIVE Teen Volunteers, 2020).

Zoo ALIVE offers an array of opportunities for volunteer service such as helping at the summer camp, Camp Kangazoo, working scout and school overnights, assisting

in special seasonal events, and tabling events. Zoo ALIVE offers other opportunities such as becoming a peer elected member of the executive board, social gatherings, camping and international trips, and more. It is required that each member attend one monthly meeting and volunteer for two events; however, exceptions are made under extenuating circumstances. Zoo ALIVE is run by the education department of the Saint Louis Zoo. As Zoo ALIVE is part of the Saint Louis Zoo’s education department, it would be considered an ISE as it offers science education to zoo patrons and workers outside of school. One of Zoo ALIVE’s more lucrative and popular events among volunteers is called “Bye to Bags”, which can be defined as an environmental action program.

Table 1

Racial and Ethnic Demographics of Zoo ALIVE Participants, Residents of St. Louis County, and Residents of St. Louis City

Race/Ethnicity	Zoo ALIVE (2015-2018) (%)	St. Louis County (2018) (%)	St. Louis City (2018) (%)	St. Louis Area Average (2018) (%)
White	77.2	65.5	44.1	54.8
Black	13.68	24.4	44.3	34.35
Asian	3.96	4.56	3.52	4.04
Hispanic/Latinx	1.22	2.96	4.13	3.55
Native American or Alaska Native		0.13	0.23	0.18
Native Hawaiian or Pacific Islander		0.06	0.11	0.09
Two or more races	3.65	2.11	2.36	2.24
Some other race	0.30	0.13	0.24	0.19

(Data USA, 2018a; Data USA, 2018b; & St. Louis Zoo Education Department, personal communication, April 3, 2020)

Bye to bags (BTB), an environmental action campaign created by teen volunteers, was kick started in late 2015 and early 2016 based on a grant from “The Ocean Project”, a program that gives youth programs funding to start environmental

action programs focusing on ocean conservation. BTB is environmental action because it followed a process, empowers people to take agency, and works toward community solutions (See Figure 2). The original BTB program wanted to determine if Zoo ALIVE could get more pledges from citizens to say “bye to bags” online or on zoo grounds. The conclusion was that in-person interaction was statistically significantly more likely to get individuals to take the pledge than any social media interactions (Mackiewicz, 2016). BTB is now considered a campaign that the teens can choose to fulfill as one of their two monthly requirements (St. Louis Zoo Education Department, personal communication, April 3, 2020; Zoo ALIVE Teen Volunteers, 2020).

Typically, BTB tabling events have pictures and maps of the United States that show zoo visitors how Saint Louis, a city located at the confluence of two major rivers, the Missouri and the Mississippi, is connected to the ocean and how actions taken in Saint Louis can affect animals in the Gulf of Mexico and beyond. A key point of each tabling event is a plastic bag in a jar of water and a biofact jellyfish in a jar of preservatives to compare how easy it is for sea turtles to get the two confused and get sick or even die from plastic consumption. The event also asks for zoo visitors to take the pledge to say, “bye to bags” and when signing the pledge, they get a free reusable bag. One talking point used at each tabling event is that if a family of four switches to reusable bags, each year 1500 bags can stay out of the ocean. Occasionally, the “Baggie-be-gone” monster, a costume made by the volunteers to visualize plastic pollution, will join the tabling event. Tabling events can happen off zoo grounds at special events throughout the city, such as earth day. Volunteers can even bring a travel box with them to their high school and run a modified tabling event at their

schools sporting events, fairs, earth day celebrations, and other events. Additionally, BTB pairs with Dierbergs, a local grocery store, to encourage St. Louis citizens to make the switch from plastic bags. Dierbergs and the zoo have partnered to sell reusable bags at each store’s location, where some proceeds go back to the zoo to continue to support the BTB campaign. As a result of the BTB initiative, the zoo has even stopped supplying plastic bags in their gift shops (St. Louis Zoo Education Department, personal communication, April 3, 2020; Zoo ALIVE Teen Volunteers, 2020).

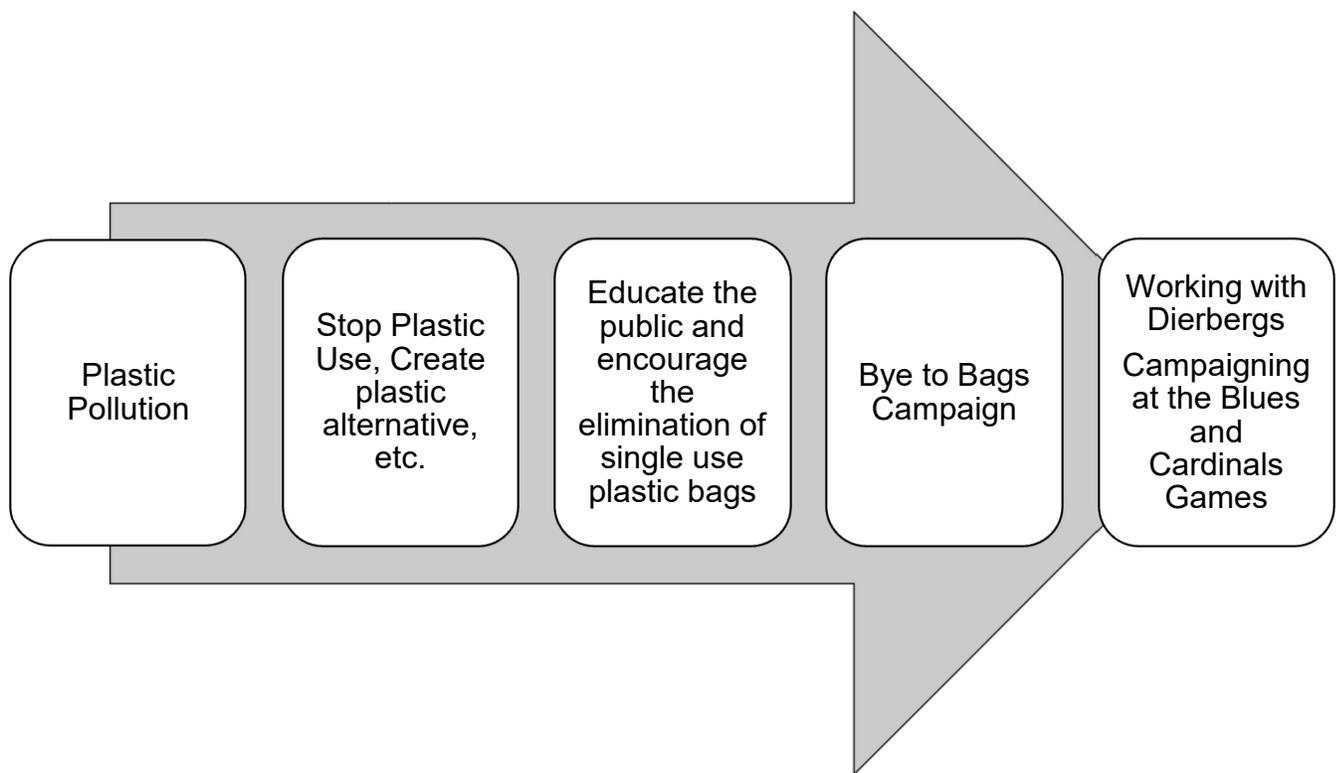


Figure 2 Bye to Bags Environmental Action Framework

We believe that BTB and Zoo ALIVE practice PYD. We set out this study to create a program evaluation to determine if PYD practices and outcomes were present, specifically in BTB, an EA program. We also wanted to understand if these PYD

practices and outcomes, if present, influences youths' intention and proclivity for civic engagement behaviors, specifically volunteering and voting.

Literature Review

The Role of Zoos and Aquariums in Civic Engagement

ISE settings can be the place where civic engagement is taught, learned, and practiced by fostering civic engagement competencies in youth. In an interview from Stanford University, civic education experts Schwartz, Pope, and Reich (2018) call for schools and teachers to bring civic education to the forefront of the classroom, suggesting that it is not a current tenant of formal learning curricula. When civic engagement is not part of the traditional learning curricula, someone, or something needs to fill the gap.

Zoos and aquariums, found world-wide, are ISE organizations that can potentially fill this gap and provide opportunities to youth to gain skills and knowledge needed for civic engagement. Zoos and aquariums have great potential to reach a diverse audience because they are located in metropolitan areas, suburban areas, and rural areas. There are several zoos, aquariums, and sanctuaries located in more rural settings. For example, the Saint Louis Zoo is located between St. Louis City and County, where racial and ethnic populations are traditionally underserved and disenfranchised. Another example is The Endangered Wolf Center, an animal sanctuary in Eureka, MO that has the potential to serve rural populations who typically are bracketed in a lower socioeconomic class. Foster-Bey (2008) states that youth organizations have the potential to serve the entirety of the population, yet individual and social constraints limit youth participation in programming.

Foster-Bey (2008) offers an analysis of all three measures of civic engagement divided by race, ethnicity, and citizenship status: a) engaged in volunteering only, b) engaged in community activities only, and c) engaged in both volunteering and community activities. The most immediate finding is that there are strong differences in civic engagement by ethnicity, and citizenship status. For example, those who identify as a minority or immigrant are both less likely to be civically engaged (Foster-Bey, 2008). Looking past the demographics and further into the socioeconomics, it is recognized that there is a strong lack of opportunities provided for youth in low-income and less educated communities. Verba, Burns, and Schlozman (2003) highlighted systematic research that demonstrates strong connections between socioeconomic status and civic engagement. Characteristics mentioned in several studies that are likely to affect the level of engagement include a young person's setting (rural-urban), employment status, social class and wealth, and racial and ethnic background (O'Donoghue & Kirschner, 2003). The unemployed individuals, who identify as a minority (racially and ethnically), are bracketed in lower socioeconomic classes, and have limited access to programming due to the structural constraints of their settings (rural-urban). These individuals feel the political system does not work in their interest and thus do not believe there is much point in participating in civic engagement activities (Côté, 2014).

The main constraints any organization would need to overcome to serve low-income communities would be transportation and funding for community members (Foster-Bey, 2008). Traditionally and unfortunately, we also know that low-income communities often coincide with race and ethnicity, particularly black and

Hispanic/Latinx communities. We also know that youth from low-income households are much less likely to volunteer and engage in their community (Foster-Bey, 2008; Verba, Burns, & Schlozman, 2003; Vezina & Crompton, 2012). Thus, zoos and aquariums, have the unique opportunity, if provided with proper funding, to serve the entirety of their community, potentially increasing opportunities for disenfranchised youth to thrive as adults. They also have the unique opportunity to offer environmental action programs and civic engagement education to communities who traditionally are civically disengaged.

While education settings, either formal or informal, can have great impact on youths' civic engagement tendencies, behaviors learned at home are just as important. Considerable research focuses on parents passing down knowledge and behaviors to their children. The phenomena of passing knowledge, skills, norms, and values are known as intergenerational learning and are accepted as the oldest form of education amongst mankind, dating back to ancient societies (Hoff, 2007). One study claims that hope for youth presence in the civic area is connected to habits at home. The study suggests that habits at home, what is taught in schools' curricula, and volunteering seem to be strong avenues to encourage engagement in youth (Andolina et al., 2003). Ideally, parents, guardians, neighbors, and educators model strong civic engagement behavior to instill civic engagement as a social norm in their children. However, those families who are less educated on civic processes may not transfer knowledge, skills, and norms to civic engagement making this a structural constraint for many youth (Hoff, 2007; Verba et al., 2003). Thus, a comprehensive understanding of societal disparities is important to understand all youths' participation in civic engagement.

Formal education lacks in civic engagement education and informal education settings could fill this gap; however, lack of education is not the only reason youth seem to be civically disengaged. Some scholars have investigated the reasons for youth voter decline and lack of civic engagement. A study attributes the lack of youth civic engagement with outdated marketing and advertising from civic organizations and campaigns in the era of social media (Mainsah, Brandtzæg, & Følstad, 2016). Bastedo (2015) claims a lack of civic engagement, in terms of voter behaviors, is due to the lack of focus from campaigns towards youth. However, others argue that lack of civic engagement stems from a loss of faith in the system originating from the Watergate scandal and the resignation of Nixon to the impeachment of Bill Clinton (Delli Carpini, 2000). Disconnection from public life and lack of opportunity for public participation or civic engagement are also attributed to the decline in young adult voters and youth engagement overall (Delli Carpini, 2000). Many of the solutions suggested by scholars often criticize politicians and campaigners and call for systematic change.

While these solutions and critiques are valuable and rooted in empirical evidence, other scholars push for raising morale and hope amongst youth (Delli Carpini, 2000; Watts & Flanagan, 2007). One belief for increasing youth civic engagement is through avenues of liberation psychology, positive youth development, and community youth development. The practice of liberation psychology focuses on social justice and social equity through public participation and engagement. Strong youth-adult partnerships, civic education, increases in efficacy, realistic opportunities for participation and chance, and strong commitment are the avenues suggested to increase youth civic engagement (Watts & Flanagan, 2007). While liberation psychology

seems to be the most appropriate avenue to increase civic engagement and promote social equity, it cannot always be implemented at the level of youth programming, thus, in the scope of this paper, we will only discuss PYD as an appropriate avenue to promote civic engagement.

Positive Youth Development

We argue that PYD practices are one of the most appropriate avenues for facilitating an environment for youth to gain skills to become successful adults. We also argue that PYD is an appropriate practice in an environmental action setting to promote civic engagement. When utilizing PYD practices during adolescence, research shows strong outcomes in emerging adults (ages 18-24) such as resiliency, community engagement, increased emotional and physical health, and inclusion (Arnett, 2014; Witt & Caldwell, 2018). Scales et al. (2000) link all the following outcomes to PYD practices: academic success, leadership qualities, serving a community, increased physical health, ability to delay gratification, valuing equality, social justice and diversity, and resilience.

Damon (2004) states that PYD views youth as an asset and resource to society and focuses on the development of their potential rather than solely reducing delinquent behaviors, a previous approach to youth development (Perkins, Caldwell, & Witt, 2018). The indicators of thriving are either referred to as the “5 C’s”. Sparks, empowerment, and voice are additional indicators of thriving designed for the practitioner (Arnold, 2018). The 5 C’s (sometimes the 6 C’s) are competency, confidence, connection, character, and caring/compassion. If utilizing the 6 C model, contribution is also considered (Bowers, Li, Kiely, Brittan, Lerner, & Lerner, 2010). Competency is cognitive

and vocational abilities and life skills. Confidence is an internal sense of self-worth and self-efficacy. Connection is creating strong and positive bonds with people and organizations. Character can be synonymous with integrity. Caring can be synonymous with empathy. Contribution is giving back to one's community (Bowers, et al., 2010). Sparks, voice, and empowerment (or sometimes referred to as relational opportunities) work together to help youth thrive. Scales et al. (2011) defines sparks as "a passion for a self-identified interest, skill, or capacity that metaphorically lights a fire in an adolescent's life, providing energy, joy, purpose, and direction" (p. 264). Voice is described as an adolescent's "self-perception of being empowered" or having a say in decisions that affect them (Scales et al., 2011, p. 265). Empowerment/relational opportunities is defined as reflecting "agency for social change, doing things for others, and making a difference in society" (Scales et. al, 2011, p. 264). The 5 C's, sparks, voice, and empowerment are outcomes linked to the 40 developmental assets. These developmental assets are a comprehensive list of empirically supported attributes and characteristics, that when a youth develops most of these assets are more likely to succeed and thrive. In other words, when the developmental assets are in place, PYD outcomes are more likely (Scales et al., 2000; Search Institute, 2006).

Sparks, empowerment, and voice offer youth practitioners a succinct and brief way to measure PYD outcomes. 4-H, a nation-wide youth development program, normally utilizes the 5 C's as their indicators of thriving in youth, but have recognized the importance that sparks, empowerment, and voice play in driving the field of youth development forward (Arnold, 2018). Arnold (2018) points out that while there has been extensive research on the 5 C's and their effectiveness in predicting thriving, little

translation of these results has been conducted for youth practitioners, and points the reader to sparks, empowerment, and voice as measurement tools developed with the practitioner in mind. Arnold (2018) particularly emphasized the importance of youth programs either helping youth find their spark or helping them shape and mold their current spark to drive them towards a future vocation. Scales et al. (2011) identify sparks, empowerment, and voice as characteristics important for development and transition into adulthood.

Principles of PYD offer a solid framework for not just the practices of PYD, but the research, materials, and people needed to implement solid PYD framework (Witt & Caldwell, 2018). To summarize principles of PYD as laid out by Witt and Caldwell (2018), (a) A positive attitude is required; (b) Evidence-based programs should be implemented to assist youth in gaining skills, knowledge and desired behaviors; (c) Programs/agencies should include cooperation amongst multiple agencies (if possible) and adults in a youth's life (i.e. school, church, neighborhood, etc.); (d) Agencies/adults should include youth in decision making. It is necessary to understand the complexity of your communities' demographics and adjust programming accordingly; (e) Youth agencies should attempt to maintain qualified youth professionals in an agency/program to promote connectivity with the teens, as well as continuity in programming while providing these professionals with a livable wage.

Witt and Caldwell (2018) have a highly extensive and detail-oriented guide to best PYD practices, tools to use, and empirical evidence to support their arguments; however, other sources have been able to create a more succinct guide for practitioners. Carr (2019) lays out a comprehensive, yet concise guide for best PYD

practices based on empirical PYD literature. Carr's (2019) best PYD practices guide pulls a list of practices from two empirical sources and summarizes and categorizes the practices into a two-page document best suited for practitioners (Zeldin, 1996; & US Department of Health and Human Services, 2007). Carr (2019) places best PYD practices into seven categories (a) policies and procedures, (b) high expectations, (c) skill-building, d) engagement, e) routine and structure, (f) relationships, and (g) strategic support and collaboration. Each category has several practices, standards, and expectations that need to be met to best serve youth in the context of PYD. For example, the policies and procedures element ask that the youth professionals and youth programs provide safe spaces (physically and psychologically), a deep understanding of PYD from all members of the youth-serving organization, an equal partnership between adults and youth, a clear mission statement with youth development language and more. High expectations ask that adults clearly state expectations and offer a plethora of opportunities for participation and support. The skill-building element asks for opportunities and support for plans that promote professionalism in youth and offer youth activities where they can practice these skills. The engagement element encourages youth to participate in community activities, recognize youths' achievements, keep the core outcomes in mind when developing programming (i.e. The 5 C's), offering help when it is asked for or needed, and encouraging youth to take on different roles (i.e. leadership). Routine and structure call for a clearly stated schedule, for consistency, and an appropriate adult to youth ratio. The relationships element calls for surveys to be implemented on youth satisfaction, partnerships between youth and adults, and opportunities for long-term professional

relationships. Finally, Strategic support and collaboration call for youth professionals and youth programs to work within their bureaucracy and collaborate with other programs. All these elements share a key component of holding PYD outcomes as the intention for each practice is that youth professionals are caring and passionate about their jobs and are trained and educated on PYD.

PYD in the context of environmental action is the most effective way to facilitate civic engagement learning opportunities, especially for youth, and bridge the gap between pro-environmental behaviors and knowledge and awareness. Several empirical sources cite that PYD practices and outcomes are strongly linked to civic engagement outcomes in youth (Schusler et al., 2009; Schusler & Krasney, 2010; Schusler et al., 2015; Witt & Caldwell, 2018). For example, in Schusler's et al. (2009) publication, an emergent theme from youth interviews was that participation in outdoor education and environmental action programs, with PYD practices such as strong adult relationships, showed youth who were dedicated to civic engagement in the sense of giving back to one's community. However, there was no further exploration of the concept of civic engagement. PYD practices and frameworks provide context for environmental action programs to effectively push for outcomes of civic and community engagement and promote specific PYD outcomes such as competence and confidence (Chawla & Cushing, 2007; Schusler et al., 2009; Schusley & Krasney, 2010; Schusler, et al., 2015;

Environmental Action

In the context of our study, we are defining BTB as an environmental action program. Kollmuss and Agyeman (2010) use several analyses to determine why

individuals have such a strong knowledge and awareness of environmental issues, yet do not choose to act to mitigate these issues. Kollmuss and Agyeman (2010) find multiple frameworks to explain the gap in knowledge and behavior such as demographics, external, and internal factors. One model that they allude to states that evaluative beliefs, normative beliefs, and motivation are predictors for attitudes toward behavior, relative importance for behavioral consideration, and subjective norms. Finally, these aforementioned items then funnel into behavioral intent, thus leading to an action or change in behavior (Ajzen & Fishbein, 1980, as cited in Kollmuss and Agyeman, 2010). Another example they use is a framework stating that attitudes, locus of control, and personal responsibility filter into an individual's personality factors. The personality factors, knowledge of issues, knowledge of action strategies, and action skills determine an individual's intent to act. Finally, this intent to act and situational factors are then the determinate predictor of pro-environmental behavior (Hines, et al., 1986, as cited in Kollmuss and Agyeman, 2010). Essentially, Kollmuss and Agyeman (2010) argue that what is often missing from environmental education and ISE is the behavioral intent or intent to act. Yet, Schusler et al. (2009) state that the gap between knowledge and behavior can be bridged through environmental action, particularly including youth in environmental action, also defined as 'action competence'. Environmental action can bring together the knowledge and awareness of an environmental issue, facilitate active learning through community engagement, thus offering youth the necessary skills, creating an intent to act, needed to choose pro-environmental behaviors. Schusler et al. (2009) finds that a prominent PYD practice that is effective in environmental action is adult relationships or youth-adult Partnership.

A keystone to environmental action when including youth is youth-adult partnership, also a keystone to PYD. Youth-adult partnership (Y-AP) is defined as “citizens across generations working together to address common concerns” (Zeldin, Christens, & Powers, 2013, p.1). EA can be anything from calling local officials and urging them to implement certain policies to protecting or maintaining the integrity of the environment, to community gardening, to protesting.

Chawla (1999) examined why individuals choose careers of environmental action. Most of these individuals experience formative experiences during early childhood, adolescence, and even emerging adulthood (18-24) to which they attribute their passion for environmental action. The formative experiences were generally experienced with family and the outdoors. In adolescence and emerging adulthood, experiences with friends are identified as more common than experiences with family members (Chawla, 1999). The participants recommended four avenues to successful environmental action, “well informed about issues, to work within an organization, to be politically active, and to conserve your energy and morale” (Chawla, 1999, p9). Other recommendations were things such as formal higher education and self-education. One qualitative study looked at the benefits youth receive from participating in environmental action programs. The self-identified benefits of participating in an environmental action program were strong and influential relationships with adults, family, and friends and influential outdoor experiences (Arnold, Cohen & Warner, 2009).

Understanding where these influential life experiences can happen is just as important as understanding that they do happen to properly formulate a plan to implement environmental action in one’s own community. Environmental action can

take place in any environment, from urban to rural. Garst (2018) described three ways to be involved in nature programming: direct, indirect, and vicarious. Direct nature experiences happen in-situ, such as conservation sites or state parks, yet are unplanned experiences and often unstructured. Indirect nature experiences take place in-situ but are highly structured and often planned experience, such as guided nature hikes. Vicarious experiences happen ex-situ, like in a classroom, yet interaction with nature often happens via reading, watching videos, or movies (Garst, 2018). Environmental action can happen in any of these environments. An example of environmental action in an indirect setting would be an organized river clean-up engaging individuals and their community.

While understanding life-paths, formative experiences, and benefits of environmental action is important, it is also important to understand where the gaps for environmental action exist and how they can be filled. Schusler et al., (2015) suggest that environmental education, either formal or informal, works toward offering more opportunities for environmental action which would result in more community action and environmental stewardship. Schusler et al. (2015) state that to increase community action and engagement, environmental education groups must couple knowledge and awareness of ecosystem services and PYD practices with intergenerational learning, place-based learning, and participatory learning to increase the likelihood of youth adopting civic engagement behavior.

Significance of the Study

Civic engagement is a vital learning outcome for youth; however, there is a strong lack of opportunity in the formal education system to learn civic engagement.

This lack of opportunity is particularly apparent through two types of activities, volunteering and community engagement, identified by scholars as important to the civic engagement learning process (Schwartz, et al., 2018). While this is an important learning process for youth, scholars suggest many organizations avoid civic education, particularly in formal settings potentially due to their structural limitations. The general public seems to shy away from civic engagement practices due to lack of faith in the system, socio-economic factors, educational background, and structural constraints (Foster-Bey, 2008; Schwartz, et al., 2018). ISE organizations, such as zoos and aquariums can play an important role in educating youth to achieve this learning outcome through volunteer service and environmental action. Most of the research focusing on teen volunteers at zoos and aquariums solely focuses on conservation behaviors and environmental stewardship. Academic literature examining zoos and aquariums teen volunteer programs' outcomes, either youth development outcomes or civic engagement competency, is lacking. Environmental action would be the pivotal practice in zoos and aquariums to promote civic engagement based on previous research. Still, if zoos and aquariums were able to overcome certain structural barriers for engagement and civic engagement education, effective PYD practices coupled with environmental action could, hypothetically, provide a solid framework where youth can engage in learning through civic activities and achieve strong PYD and civic engagement outcomes. Unfortunately, there is limited empirical evidence in this area that demonstrates how environmental action programs can practice PYD and lead to strong civic engagement outcomes. We set out this program evaluation to examine if PYD was being practiced and PYD and civic engagement outcomes exists in Zoo

ALIVE and BTB, the environmental action program. We hope the implications and recommendations of the program evaluation can be useful to other informal science and environmental educators, specifically at zoos and aquariums, who would like to establish and develop long-term youth environmental action programs on environmental and conservation civic engagement.

Research Questions

The objective of this study was to determine if, in the context of environmental action (Bye to Bags), youth are more likely to report PYD outcomes, and civic engagement outcomes and to what extent PYD practices are perceived by alums and youth professionals. There were four driving research questions (RQ) of the project.

- 1) To what extent does the Bye to Bags environmental action program achieve PYD and civic engagement outcomes from participants' perspectives?
- 2) To what extent do outcomes differ between volunteers engaging in high vs. low levels of volunteer hours?
- 3) How do these PYD outcomes, in the context of Bye to Bags, influence a young adult's inclination for civic engagement?
- 4) Based on known PYD practices, What PYD practices exist in Bye to Bags from alum and youth professional's perspectives?

Methods

Data Collection

Survey Procedure

We addressed the first three questions through a survey approach. Before data collection, we received IRB approval, IRB # 2013963 from the University of Missouri.

Per IRB standards, all participants received an informed consent document (see Appendix 1 & 2). Separate documents were filed with the host institution, the Saint Louis Zoo, to maintain their research standards. From April-September of 2019, a survey (see Appendix 3) administered through Qualtrics was available for youth to take who had been a part of Zoo ALIVE and participated in BTB. At the time of sending the survey out, there were about 100 individuals eligible for the survey, 70 active members in Zoo ALIVE, and approximately 30 alums (St. Louis Zoo Education Department, personal communication, April 3, 2020; Zoo ALIVE Teen Volunteers, 2020). A total of 65 individuals (current and alum volunteers) voluntarily offered to participate after a short presentation. Fifty-three individuals took the survey, but only 47 were usable. Six surveys were unusable as they only answered demographic questions and skipped all other content related questions. The response rate from the survey was 81.52%.

Measuring PYD Outcomes

The survey measured PYD outcomes sparks, empowerment, voice, and measured for civic engagement outcomes (See Table 3). Sparks, empowerment, and voice were chosen to evaluate over the 5 Cs due to the brevity and clarity they offer. We reviewed the Scales et al. (2011) index from Table 1 (p. 267), which was the initial index for measuring sparks, empowerment, and voice and indicators of thriving. We included all 14 of Scales et al. (2011) items, while tweaking the language to be specific to the program we were evaluating. Additionally, we created some of our own measurement to specifically reference the youths' experience in BTB relating to Chawla and Cushing's (2007) definition of civic engagement (See table 2). We adapted the Scales et al. (2011) scoring mechanism to retain a Likert scale on each item (See appendix 3). We ran an

internal reliability test based on pilot survey results to determine Cronbach's alpha scores for each section. The pilot survey was distributed to alum volunteers who had not participated in BTB to pilot the survey. The prominent study examining PYD and civic engagement were exclusively qualitative phenomenological research (Schusler et al., 2009). We decided to create our measurements because there were no existing measurements that examine PYD outcomes and civic engagement in the context of environmental action quantitatively.

Sparks.

There was one measure for sparks in the (See table 2). We included one item from this Scales et al. (2011) and adapted the language to be representative of the program (See Appendix 3). Survey respondents were prompted with the following,

“To what extent do you agree or disagree that Bye to Bags has impacted you in the following ways? A spark is when people are really happy, energized, and passionate about their talents, interests, or hobbies, we say they have a “spark” in their life. This spark is more than just interesting or fun for them. They are passionate about it. It gives them joy and energy. It is an important part of their life that gives them real purpose, direction, or focus. I have found my spark.”

Empowerment.

The Cronbach's alpha score for empowerment was 0.96. There were seven items by which we measured empowerment (See Table 2). We included seven items from Scales et al. (2011) and adapted the language to be representative of the program (See Appendix 3). For example, survey respondents would have seen, “I feel this [BTB]

has helped me make friends, meet other people, or helped deepen an already existing relationship”, “I am encouraged by the adults to pursue my talents, interests, or hobbies”, and “When I spent time working on something, I develop warm trusting relationships with adults”.

Voice.

The Cronbach’s alpha score for voice was 0.83. There were five items by which we measured voice (See Table 2). We included five items from Scales et al. (2011) and adapted the language to be representative of the program (See Appendix 3). For example, survey respondents saw “The adults who have decision making power listen to what I have to say”, “I am given lots of chances to help plan events/create new opportunities”, and “I share what I know to help make the Zoo, Saint Louis, and the world a better place”.

Measuring Civic Engagement

Civic engagement questions were based from Chawla and Cushing’s (2007) interpretation of value-belief-norm theory and the identification of gaps between knowledge and behavior which are “antecedents of action for the environment”, “antecedents of political action”, “a sense of competence” and “a sense of collective competence” (Chawla & Cushing, 2007). Once survey questions were drafted, they were then edited for clarity with the help of experienced researchers.

Intent for/current practice of civic engagement was measured. The Cronbach’s alpha score was 0.78. We included 13 items in total, adapted 10 items from Chawla and Cushing’s (2007) definition and created 3 new items (See Table 2). Also, we adapted the language to be representative of the program.

Interview Data

We used semi-structured interview procedure with alums and youth professionals of BTB and Zoo ALIVE. From November 2019 to December 2019, semi-structured interviews (See Appendix 4) were conducted with alums of Zoo ALIVE who had either been part of the planning and decision process of starting BTB at the Saint Louis Zoo, or alums who had participated heavily in BTB during their time in Zoo ALIVE. We chose to interview individuals to garner a greater understanding of what PYD practices were being used and recognized in the program and how, if at all, these PYD practices affected civic engagement. Newcomer, Hatry, and Wholey (2015) suggest semi-structured interviews in a mixed-methods design offer the researcher the ability to explore puzzles and emergent ideas from analyzed survey data and focus the findings. Eight individuals, representing 72% of alums contacted, were able to/willing to volunteer their time for interviews. Alums were contacted from personal contact, from information given to us from the Saint Louis Zoo, and through a quasi-snowball sampling method in which we asked current interviewees if they could identify and provide contact information for other alums who had played large roles at the beginning of BTB. These 8 individuals were also represented in the survey population. There was no incentive to participate in the interviews. Interview protocol (Appendix 4 & 5) was designed to gain a more nuanced understanding of how and if BTB practices PYD. Additionally, semi-structured interviews (See Appendix 6) with youth professionals were conducted from December 2019-January 2020. These youth professionals were either the managers of the Zoo ALIVE program or current or previous coordinators of BTB. All five youth professionals (100%) were able and willing to be interviewed.

At the end of each interview, with alums and youth professionals, a modified version of Carr (2019) best practices (See Appendix 6) was given to each interviewee. We modified the document to condense it and have BTB and Zoo ALIVE specific language. At the beginning of the activity, each interviewee read a short definition of PYD. Each interviewee was then instructed to highlight which practices they perceived to be in BTB. If they thought it was in Zoo Alive and not BTB, they were instructed to highlight that practice in a different color. If they thought it was present in both, they were instructed to highlight that in a third color. From the color coding, we coded each color quantitatively (BTB and Zoo ALIVE-3, Just BTB-2, Just Zoo ALIVE-1, None-0). The intention in understanding if practices were present in just BTB, just Zoo ALIVE, both or neither is to highlight that youth may receive PYD outcomes from one part of the program and not the other, and to help youth professionals bridge any gaps, if desired. Upon completion of the activity, each interviewee was asked to elaborate on why or why not certain practices were highlighted. The reasoning for the activity was to understand how each alum and youth professional of the program perceived the presence or absence of PYD practices and why, to fill in any potential gaps missed in the semi-structured interview questions (See Table 3)..

Table 2*Table of Constructs for PYD and Civic Engagement Outcomes*

Construct	Source	Sample Item
Sparks	Scales et al. (2011)	Because of Bye to Bags I have found my “spark”. A spark is “When people are really happy, energized, and passionate about their talents, interests, or hobbies, we say they have a “spark” in their life. This spark is more than just interesting or fun for them. They are passionate about it. It gives them joy and energy. It is a important part of their life that gives them real purpose, direction, or focus
Empowerment/Relational Opportunities	Scales et al. (2011)	When I spend time working on something to do with Bye to Bags I develop warm and trusting relationships with adults. I feel that Bye to Bags has helped me make friends, meet other people, or deepened an already existing relationship.
Voice	Scales et al. (2011)	The adults who have the decision-making power in Bye to Bags listen to what I have to say. Because of what I have learned from Bye to Bags, when things don’t go well for me, I am good at finding a way to make things better.
Civic Engagement	Chawla and Cushing (2007) New	Because of Bye to Bags, when I turn 18, I intend to vote. Because of Bye to Bags, when I leave high school, get to college, or enter the work force, I intend to continue volunteering in my community. Because of Bye to Bags, I value the environment to a point where I will sacrifice or give up certain luxuries or conveniences to help the environment.

Data Analysis**Survey Analysis**

The data was coded on a Likert scale of 1 to 5 where 1 is strongly disagree and 5 is strongly agree. The data was analyzed using IBM SPSS statistical software. To

answer our first research question, descriptive statistics were conducted to calculate means and standard deviations. For our second research question, independent t-tests were run to determine differences amongst two groups of teens. The grouping we examined was teens who volunteered more than 300 hours ($n=21$) and who volunteered less than 300 hours ($n=21$). Following the results of Levene's test for equal variance, we reported values assuming equal variance for sparks, empowerment, and voice, and equal variance not assumed for civic engagement. To explore our third research question, a multiple linear regression was run to determine which outcomes were strong predictors for civic engagement intent. Statistical significance was examined at $\alpha = 0.05$ (See Table 3).

Interview Analysis

Interviews were recorded and transcription software, otter.ai, was used to preliminarily transcribe each interview. An undergraduate research assistant and I then returned to each interview to fix any spelling or grammar errors, fill in gaps of conversation missed by the software, and identify each speaker. Following transcription, each interview was uploaded in NVivo and coded using Carr (2019) and Chawla and Cushing's (2007) definition of civic engagement. To answer RQ four, the alum interviews were deductively coded first with 9 codes: policies and practices, high expectations, skill building, engagement, routine and structure, relationships (adult), strategic support and collaboration, peer relationships, and civic engagement. Although civic engagement could be coded under several of Carr's (2019) best PYD practices, as it was a distinct measurement and cornerstone of the research, it was inductively coded separately. Additionally, peer relationships were coded separately. Although Carr's (2019) engagement practices subtext mention peer relationships in the context of the 5

C's (connection), it was such a prominent theme in each interview that it was coded separately. Relationships (with adults) could also be coded as engagement since relationships could be defined as connection. Even skill building could be defined as competency. Due to the variability and vagueness in the 5 C's subtext of engagement, peer relationships, being a prominent theme, were coded separately. The graduate researcher was the only coder (See Table 3).

Table 3

Data Collection, Measurement, and Analysis Synopsis

Research Question (RQ)	Measurement	Analysis
RQ 1	Sparks Empowerment Voice Civic Engagement	We used a Likert Scale where 1=strongly disagree and 5= strongly agree. We reported the descriptive statistics (<i>N</i> , <i>M</i> , & <i>SD</i>) (See Table 5).
RQ 2	Volunteers with more than 300 hours, and volunteers with less than 300 hours	We ran an independent t-test comparing the two groups following a Levene's test for equal variance. Statistical significance was examined at $\alpha = 0.05$ (See Table 6).
RQ 3	PYD outcomes as predictors of civic engagement	We ran a multiple linear regression to explore if any of the PYD outcomes were statistically significant predictors of civic engagement outcomes (See Table 7).
RQ 4	Perceived PYD practices by alums and youth professionals through semi-structured interviews and post-interview activity on PYD practices.	We deductively coded practices based on Carr (2019). We added two nodes to our coding: peer relationships and civic engagement. Additionally, we created a content analysis of PYD practices explicitly labelled by alums and youth professionals (See Table 8).

Results

Participants

The youth participating varied in age between 15 and 22 all originating or currently living in the Saint Louis metropolitan area and surrounding townships (See

Table 4). Of all respondents, 95.92% identified as non-Hispanic/non-Latinx. No one identified as Hispanic/Latinx. About 4.08% identified as “other” (See Table 4). The mean age was 18 years old ($SD=1.80$). On average, volunteers attended between 7-8 monthly meetings every year. Of survey respondents, 16.44% said that they volunteered more than their two required monthly events. Of all respondents, 75.56% had worked a BTB event. Of the 75.56%, 44.12% volunteered at 1-5 BTB events, 23.53% volunteered at 6-10 BTB events, and 32.35% volunteered at 11 or more BTB events.

Table 4
Sociodemographic Characteristics of Participants

Baseline Characteristic	<i>N</i>	%
Gender		
Male	12	24.49
Female	37	75.51
Ethnicity		
Hispanic	0	0.00
Non-Hispanic/Non-Latinx	47	95.92
Other	3	4.08
Age		
15-17	19	38.78
18-22	30	61.22
Volunteer Hours		
<300	26	27.08
>300	21	29.17

Results on RQ 1: To what extent does the Bye to Bags environmental action program achieve PYD and civic engagement outcomes from participants’ perspectives?

On average, participants strongly agreed or agreed with statements associated with the BTB program meeting PYD and civic engagement outcomes with deviations from the mean between 0.51 and 1.01 (See Table 5). The means range from 4.06 to 4.37 on a 1 to 5 scale with standard deviations range from 0.51-1.01.

Table 5*Descriptive Statistics of Survey Responses for PYD and Civic Engagement Outcomes*

	<i>N</i>	<i>M</i>	<i>SD</i>
PYD Outcomes			
Sparks	47	4.06	1.01
Empowerment	47	4.37	0.60
Voice	47	4.19	0.77
Civic Engagement	46	4.16	0.51

Note. N=47, measured on a 5-point Likert scale where 5 is strongly agree is 1 is strongly disagree.

Results on RQ 2: To what extent do outcomes differ between volunteers engaging in high vs. low levels of volunteer hours?

The independent t-test yielded statistically significant results when comparing hours volunteered in Zoo ALIVE and outcomes. Sparks ($df=46, t=-2.33, p=0.024$), Empowerment ($df=46, t=-2.49, p=0.017$), Voice ($df=46, t=-2.39, p=0.021$), and Civic Engagement ($df=45, t=-2.38, p=0.022$), were all statistically significant. Individuals who volunteered more than 300 ($n=21$) hours reported higher mean scores on sparks, empowerment, voice and civic engagement, compared to those who volunteered less than 300 hours ($n=26$). We chose 300 hours as the threshold because each group represented a near split distribution of the volunteers' hours. We chose 300 hours as the threshold because the St. Louis Zoo offers an award for service at 300 hours and Ellis, Lacanienta, and Freeman (2018) suggest that youth programs should offer incentives for achievements. Finally, we chose 300 hours as our threshold because Vézina and Crompton (2012) found that youth who volunteer average 60 hours of service per year; yet, 10% of youth volunteers make up 53% of volunteer hours and average 390 hours per year, which is near our threshold. All outcomes were statistically significant (See Table 6).

Table 6*Independent T-Tests Comparing Hours Volunteered*

Outcome	Less than 300 hours (<i>n</i> = 26)		More than 300 hours (<i>n</i> = 21)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
	PYD Outcome					
Sparks	3.77	0.95	4.43	0.98	-2.33	0.024*
Empowerment	4.20	0.60	4.59	0.45	-2.49	0.017*
Voice	3.96	0.82	4.48	0.60	-2.39	0.021*
Civic Engagement	4.00	0.56	4.34	0.38	-2.38	0.022*

**p* < 0.05

Note: Following the results of Levene’s test for equal variance, we reported values assuming equal variance for sparks, empowerment, and voice, and equal variance not assumed for civic engagement.

Results on RQ 3: How do these PYD outcomes, in the context of Bye to Bags, influence a young adult’s inclination for civic engagement?

The model is significant (*p*=0.000; *F*=12.565). The multiple regression analysis indicates that the strongest predictor for intent/participation in civic engagement is empowerment. We entered all predictors into the model simultaneously. The reported model summary was R-square = 0.473 and *F* = 12.57. The model significantly explains 47.3% of the variance in predicting civic engagement scores. Empowerment (*t* = 2.67, *p* < .05) shows as the only statistically significant predicting element of civic engagement activity for youth. The slope (*B* = 0.409, *p* < .05) indicates that one unit increase in empowerment will likely to lead to 0.409 increase in civic engagement (See Table 7).

Table 7

Multiple Regression identifying Empowerment as strongest indicators for Civic Engagement

Outcome	<i>B</i>	<i>SE</i>	β
Constant	1.40	0.48	
Sparks	0.1	0.07	0.20
Empowerment	0.41	0.15	0.43*
Voice	0.13	0.09	0.19

Dependent Variable: Civic Engagement

* $p < 0.05$

Results on RQ 4: Based on known PYD practices, What PYD practices exist in Bye to Bags from alum and youth professional’s perspectives?

From the interviews themselves we found, the majority of what the alums perceived from the PYD practices (Scales et al. 2011) from BTB was engagement, followed by skill building, and adult relationships. Youth professionals involved with the program followed a similar pattern, with the most references referring to engagement followed by skill-building. However, youth professionals differed in the third most popular practice, which was policies and practices.

Engagement

Alum Responses

One individual expressed their experience in terms of engagement with a plethora of opportunities available to plan and implement different events or activities in Zoo ALIVE,

There are just a million different types of things you can do with zoo alive especially...yeah you can join bye to bags, but if you're interested in camping [you can] go on trips every year and you're going to meet people in interested in the same things as you. Even if you join and Zoo alive isn't your thing and working in education might not be your calling, ... you're going to meet really cool people, make some really great connections, and gain really great experiences no matter what.

During many of the alums' times in the program, the Saint Louis Zoo hosted the Youth Ocean Conservation Summit (YOCS). The YOCS not only was a massive opportunity for engagement for the youth involved in BTB at the time, but it also offered them a platform to skill building, and to explore avenues they were interested in. It also offered youth to be supported by the zoo as an organization, to network with other professionals, and create connections with other people. The same individual expressed excitement over the opportunities for engagement that YOCS gave them,

That was one thing and then the youth ocean conservation summit was literally just the coolest experience of my whole life. They gave us such a [amazing] platform. [There were] so many cool workshops set up by all these cool people from all around the world. You could learn about PR from a zoo employee, you could learn about working for the government, and learn about other organizations.

Youth Professional Responses

One of the employees shared that she wanted for teen volunteers to have a sense of agency and be active in their communities, a tenant of engagement and civic engagement,

What I want them to get out of [Bye to Bags] is they can see that they personally can have an impact. By encouraging others to take an action so they can see that in a two or three-hour shift, they could maybe talk to 50 to 100 people and maybe get, many additional families to sign that pledge. They can really understand that they personally can have an impact, which is hopefully a lesson they can, take to every other facet of their life.

Another youth professional was particularly concerned with offering engagement to the whole community of Saint Louis and making sure all youth had the opportunity to participate. When asked what she might do with unlimited funding, this youth professional responded,

There's this complicated question about do we provide paid internships for teens? Do we provide an opportunity because we know that people who have to work, people [who] don't have as many financial resources, who have transportation issues are less likely to participate. You know, how do we create an environment [to eliminate these barriers for some people]?. That's something that I think would be important.

Adult Relationships

Alum Responses

All the alums spoke to how special their relationships were with the youth professionals in the program. Some mentioned that the youth professionals were like a second set of “moms and older sisters”. Another individual stated that the youth professionals were “literally doing my dream job” and that after participating in BTB and interacting with the youth professionals the alum changed her career goals from environmental science to environmental science and political science.

An additional opportunity to form relationships with an adult for the teens to meet Sylvia Earl, a world-renowned marine biologist.

We met Sylvia Earle. That was the coolest thing we ever did. [I think it was cool] because she came and presented for everybody at the whole zoo. And it was packed, and there were so many people there to see her. But she took the time out of her schedule, which they told us repeatedly was super busy. I remember her asking me specifically, and I was super excited, [if I wanted to] say anything yet. She [said], “What made you get interested in the environment?” And I talked about where I grew up and she said, “that's just like, where I grew up.” Oh my god, this is the coolest moment of my life.

Skill-Building

Alum Responses

One individual expressed gratitude over the youth professionals' level of engagement in BTB and Zoo ALIVE. Several individuals state that their time in Zoo ALIVE and BTB shaped their career goals and education preferences.

I'm passionate about animals and conservation. And getting involved in bye to bags kind of shaped me and my future because it made me see that there were aspects to conservation, helping the planet, and helping wildlife that has nothing to do with [biology, physics, chemistry], in other words, the things I am really bad at. [I realized] I don't have to go into [a heavily STEM dominated] career in order to do something that I love I'm passionate' [about]. And bye to bags was kind of my first exposure to that. I'm an environmental studies major with a concentration in sustainability. I loved doing bye to bags so much, and getting out there and promoting these habits, that I decided when I got to college that I wanted to do it, ... forever

Youth Professional Responses

When the youth professionals were prompted to talk about how they work with youth, many of them spoke to the importance of teaching youth life skills. Many of those life skills were focused on how to be model conservationist and environmentalists. However, one staff member expressed the importance of not just career-specific skills, but professional development skills.

There's so many pressures on teens to do things with their time, to be in a sport, to try to run for a student council, to be in other extracurricular activities, to succeed in their classes, to keep that grade point average up, to do well on the tests that you have to take. It's a lot of pressure that we put on [teens.] We recognize that for them to do something like this, is a big deal. And so, we are always walking that line between being forgiving when they mess up and trying to encourage them to learn how to meet a commitment, to be dependable.

Strategic Support and Collaboration

Alum Responses

There was a definite conflict amongst strategic support and collaboration for the alums, with about half of the sentiments being positive and the other half being negative. Strategic support and collaboration essentially calls for cooperation and collaboration amongst departments within an organization and working with other organizations. Some alums were challenged with their partnership with other zoo departments, such as working on public relations to get more freedom for a social media account. Other alums expressed excitement that the animal departments were adopting the BTB message. Over the course of BTB, zookeepers promoted the campaign with animal enrichment in popular species habitats. Eventually, BTB moved to be a part of The Sea Lion Show where the teens in the program recorded an introduction that was played before the show.

All interviewees mentioned frustrations with the social media campaign, and the Saint Louis Zoo's social media presence in general. While many of the alums were pleased that most of the zoo eventually supported the campaign, many expressed irritations that it took almost a full year after the campaign launched for the zoo to stop handing out plastic bags at the gift shops. One individual exclaimed that she was "depressed" by the social media presence,

Social media was a huge thing of our pitch. It is something that we absolutely wanted to be the crux of bye to bags. But we wanted to create an online presence to alert people to environmental. It's depressing that I'm one of maybe 50 followers [on twitter that] bye to bag has.

One of the positive sentiments shared about strategic support and collaboration was the opportunity for the alums, at the time they were in the program, to present to the Saint Louis Zoo's board of directors.

Youth Professional Responses

The youth professionals expressed similar frustrations around strategic support and collaboration. Most of the comments around strategic support and collaboration stemmed from the theme that teens weren't equal partners in some of the decision making. Both youth professionals and alums expressed irritation about working with other departments in the zoo. However, the youth professionals had, overall, more positive sentiments to share about strategic support. They were all very excited that this program, started by teens, was being adopted by the whole zoo. Two employees spoke to the history of Zoo ALIVE and that little strategic support and collaboration were received outside of the education department until about 7 years after Zoo ALIVE was established. Initially, when trying to find opportunities for teens outside of education, one individual said, "basically nobody at the zoo, just being totally honest, nobody other than the education department said they wanted teens in their area or could come up with something they wanted to do."

Eventually, that changed, and Zoo ALIVE built relationships with animal divisions to help with zookeeper-related tasks, such as landscaping, cleaning, rearing, and releasing endangered species. The youth professionals spoke to how quickly the rest of the Saint Louis Zoo took to BTB and worked with the teens, whereas previously, getting the teens to help or work with any other department was incredibly difficult.

Civic Engagement

Alum Responses

While many alums attribute their current career goals and aspirations to Zoo ALIVE and BTB, very few people attribute their civic engagement, particularly voter behavior exclusively to Zoo ALIVE and BTB. All alums, but one, are currently involved in

some type of volunteer organization or community service initiative and all alums mention that they vote. When they were asked what they attribute the voting to, most said that they attribute it to something their parents taught them when they were growing up. Although, half of them also attribute it to their time in the program, and their attendance in Camp Kangazoo, where Zoo ALIVE pulls many of their future volunteers from. One alum talked about how he volunteers at places around St. Louis because his mom got him excited about it. One individual talked about how she got involved in Zoo ALIVE and other volunteer organizations based on interactions with her sister and parents.

Yeah, so my sister did model UN before me, she wasn't, super involved, but she did have a good time in it. And then, every week, when I was a kid, my parents would take me to the zoo. And they also were the ones who like enrolled me in Camp Kangazoo. And that's like, what made me get into Zoo alive.

Voting behavior is a main tenant of Chawla and Cushing's (2007) civic engagement outcomes. All the alums stated that they have voted in at least one election. None of them attribute their voting behavior exclusively to time spent in the program, but they do mention how the program influenced their voting decisions, such as policies and choices for political representative, to reflect values they learned from the program.

Routine and Structure

Alum Responses

Most alums mentioned that the program lacked routine and structure. About half of the alums found this as a positive aspect of the program, and the other half found this

to be a negative aspect. One individual expressed how she enjoyed the program and lack of structure, but how she could see that others might struggle with it.

She said, “if you were a kid who needed structure [wow]! And [Bye to Bags] seems like this is good for a certain kind of person like myself, but, [for someone with a learning disability this would not be an ideal program]”.

Peer Relationships

Alum Responses

When interviewees were asked why they continued in BTB and Zoo ALIVE, most mentioned some aspect of peer relationships, attributing it to “life-long friendships”, the connections they made, and the fun they had with their friends while doing so. One individual shared how much love they have for Zoo ALIVE because he was able to meet his “best friends”. He exclaimed, “The connections with people in the program... [are] some of the strongest connections I've ever made, even the adult mentorships are still the people I trust the most. Literally all my best friends [are from Zoo ALIVE]”.

Policies and Practices

Youth Professional Responses

All youth professionals recognized the pressure and commitments that the teens are currently facing, leading to a conversation about making youth feel safe in an ever-increasingly stressful world. Each interviewee mentioned safety (physical and psychological) as an important tenant when working with youth. One individual spoke about a conversation she was able to facilitate.

I was talking with a group of teens and we had brought up some LGBT issues because I thought it was somebody who probably needed some positive examples of that in their life. I made [to create a safe space] and this person who had not talked, who had not participated, came out of

their shell and was asking questions and talking. And just because I opened this window, I saw this person just, bloom and be comfortable around other people. ... [In that same conversation, three other individuals shared something about themselves, like gender identity]. I would never force anybody to participate in [a conversation] like that. After this conversation, this person [opened up].

When prompted what she would do with unlimited funding, the youth professional responded with themes emerging around relationships with adults and policies and practices when calling for a full time professional dedicated exclusively to Zoo ALIVE.

Well, there would be a full-time person whose job was zoo alive. That'll be the first thing. I mean, legitimately, there are things that [me and the other youth professionals] just do not have time to figure out and work out. And so, they get back rendered. So, having somebody who was dedicated to doing that would be the first thing.

Content Analysis

A content analysis of the interview activity (See Appendix 6) was run to determine frequencies of perceived practices by alums and youth professionals. Both alums and youth professionals marked engagement as most present in both BTB and Zoo ALIVE, consistent with findings from the interview analysis. Engagement was followed by relationships and routine and structure as the second and third most reported practiced present in Zoo ALIVE and BTB. Although relationships and routine and structure were marked most frequently as present in BTB and Zoo ALIVE they were also noted frequently to not be present at all (See Table 8). Almost all PYD practices were identified to be at least active in BTB. All but one individual stated that they did not think BTB or Zoo ALIVE buffers teens from risky behaviors which is a tenant of routine and structure listed in our adaptation of Carr's (2019) practices (See Appendix 6). High Expectations, Skill Building, and Strategic Support and Collaboration for alums were marked present in some way in the program. For youth professionals, only one

individual marked high expectations as not being present in the program. The findings from the interview activity are relatively consistent with the interview analysis.

Table 8

Percentage and Frequency for Self-Reported Evaluation on the PYD Practices among Alums and Youth Professionals

PYD Practice	Alums (<i>n</i> = 8)		Youth Professionals (<i>n</i> = 5)	
	Frequency (<i>f</i>)	Percentage (%)	Frequency (<i>f</i>)	Percentage (%)
Engagement				
Both	34	70.83	24	80.00
Just BTB	8	16.67	3	10.00
Just Zoo ALIVE	3	6.25	3	10.00
Neither	3	6.25	0	0.00
Relationships				
Both	22	68.75	13	65.00
Just BTB	6	18.75	1	5.00
Just Zoo ALIVE	2	6.25	3	15.00
Neither	2	6.25	3	15.00
Routine and Structure				
Both	28	58.33	19	63.33
Just BTB	8	16.67	2	6.67
Just Zoo ALIVE	1	2.08	0	0.00
Neither	11	22.92	9	30.00
Policies and Practices				
Both	25	46.30	20	57.14
Just BTB	16	29.63	4	11.43
Just Zoo ALIVE	5	9.26	5	14.29
Neither	8	14.81	6	17.14
High Expectations				
Both	12	46.15	9	90.00
Just BTB	2	7.69	0	0.00
Just Zoo ALIVE	2	7.69	0	0.00
Neither	0	0.00	1	10.00
Skill Building				
Both	12	46.15	9	90.00
Just BTB	4	15.38	1	10.00
Just Zoo ALIVE	0	0.00	0	0.00
Neither	0	0.00	0	0.00
Strategic Support and Collaboration				
Both	7	43.75	5	100
Just BTB	1	6.25	0	0
Just Zoo ALIVE	0	0	0	0
Neither	0	0	0	0

Note: The following lists each practice's number of measurable items: a) Engagement has six items, b) Relationships has four items, c) Routine and Structure has six items, d)

Policies and Practices has seven items, e) High Expectations has two items, f) Skill Building has two items, g) Strategic Support and Collaboration has one item.

Discussion

PYD practices and outcomes exist in BTB and Zoo ALIVE as well as civic engagement outcomes. Yet, there are avenues that Zoo ALIVE, BTB, and other youth programs could take to increase these benefits. BTB offers teen volunteers opportunities to engage in their community in creative and beneficial ways. This environmental action program builds youths' skills to identify and act on an relevant environmental issue to their community.

Zoo ALIVE and BTB predominantly follow PYD practices as laid out by Carr (2019) as perceived by both adults and alums of the program. To support teens to find their sparks, many opportunities are available for teens to practice different sets of skills and talents from public speaking at tabling events to promote social media campaign. To achieve empowerment, these teens are provided with a safe environment with authentic decision making and supportive adult relationship. Zeldin et al. (2013) argue for successful Y-AP to create civically engaged youth would be authentic decision making, natural mentors, reciprocal activity, and community connectedness. In this case, authentic decision making is synonymous with opportunities for voice, positive adult relationships, and community connectedness for a successful environmental action.

Based on our results, we found that empowerment from PYD outcomes was a statistically significant indicator of long-term civic engagement intention. Kollmuss and Agyeman (2010) state that pro-environmental behaviors do not exist because there is no intent to act. Schusler and Krasney (2009) suggest that EA creates the necessary

skill set for intent to act. If EA, such as BTB, focuses heavily on empowering youth to believe they have agency to make a change, this could be the avenue for more civically engaged youth. And, positive experiences in adolescence with the environment can lead to a career or vocation of environmental stewardship (Chawla, 1999). Like Chawla's (1999) findings, Vezina and Crompton (2012) find that those who are exposed to volunteering in early childhood are more likely to volunteer during adolescence and adulthood. It is important for future studies to investigate the differences between youth who participate in EA and youth who do not and if there are any statistically significant differences in civic engagement behaviors.

Youth who volunteer more than 300 hours in the Zoo ALIVE and participate in BTB are more likely to have higher self-report PYD outcomes of sparks, empowerment, and voice, and be more inclined toward civic engagement activities (See Table 3). We recommend that youth professionals urge teens to stay in the program until they have volunteered 300 hours and emphasize the current incentives in place at the Saint Louis Zoo for 300 hours of service.

Based on several interview responses, adults offering youth a platform for voice was well received by alums. Zeldin et al., (2013) argues that successful Y-AP, or adult relationships and opportunities for voice, create the perfect recipe for civically engaged youth. Reciprocal activity is defined as youth learning from adults and adults learning from youth. So, in the context of this study, if Zoo ALIVE and BTB are concerned with offering a clear path for civic engagement, it will be important for youth professionals to be able and willing to listen to youths' voices and spend time to learn from them. To

encourage civic engagement in teens, several steps should be implemented. Several alums stated that they felt that they were “calling the shots” at the beginning of BTB.

Several interviewees used the term “disillusioned” when talking about voter behavior, politics, and civic engagement. Schwartz, Pope, and Reich (2018) state that formal education settings do not properly facilitate civic engagement education and call on informal education settings to do so. Based on our results, it could also be beneficial for youth professionals to offer some type of educational resource, like a mock election or workshop, or direct youth to resources or organizations that offer this civic engagement education.

All alums attribute their voter behavior to something they learned at home, and partially to their participation in BTB and Zoo ALIVE. It is clear from the alum’s statement that intergenerational learning is at play for them, as well as civic engagement education in BTB. Participating in BTB can offer a different type of experience than one the teens have at home, potentially compounding civic engagement education effects. If youth professionals are interested in increasing civic engagement, creating strong relationships with parents, guardians, and families, and being transparent with programming and intentions will be vital. Not only do parents teach their children behaviors through intergenerational learning, children can also teach their parents (Lawson et al., 2018; Lawson et al., 2019). By incorporating civic engagement education into a youth program in the context of EA, youth professionals can create adults and young adults alike who are interested and passionate about environmental stewardship. Maintaining effective communication and transparency surrounding the program’s policies and practices for civic engagement with participating

families will be vital. Boracco and Witt (2018) stress the importance of working with families to not only offer experiences that are linked with positive outcomes but to also strengthen relationships with youth in the program.

Strategic support and collaboration were filled with sentiments of contempt and positivity. The positive sentiments were overwhelmingly excited, especially when youth were offered a platform to be heard by “adults who matter”. We suggest that youth programs, especially if they are part of a larger organization, work from the birth of the program to build strong relationships with other divisions or organizations to offer youth several platforms from which to work. Hannah (2018) highlights strategic coordination as highly lacking in youth programs, particularly in youth sports. Hannah (2018) encourages interdepartmental collaboration and coordination and across organizations to provide quality programming to youth.

Routine and structure seemed to be very lacking overall in BTB and Zoo ALIVE by the perceptions of both youth professionals and alums of the program (See Table 7). It could be beneficial for youth professionals to work toward more structure in the program via more consistent scheduling. However, the youth professionals and alums seem unconcerned with the lack of structure in the program as it is not a daily task for each teen, and many expressed appreciations around the scheduling flexibility. Ellis, Lacanienta, and Freeman (2018) suggest that structured programming reduced attrition of youth from youth programs and increases the overall effectiveness of youth programs. We suggest that youth programs frequently conduct program evaluations to determine if restructuring of programs is needed.

One key argument we want to make would be for the Saint Louis Zoo to hire a full-time employee dedicated to just Zoo ALIVE. Currently, the two youth professionals who oversee the program also run their units in the education department (Youth Programs and Early Childhood). The third youth professional exclusively oversees BTB. Their sole duty is not just youth development, although it is an important and time-consuming element of their role. The BTB coordinator also works with the PR department, graphics, animal divisions, and outside vendors to expand BTB's reaches in the zoo and out of the zoo. Each youth professional in their interviews stressed the time management aspect of their job saying that they "could have done more if I had more time". Witt and Caldwell (2018) call for youth professionals to be fully trained and work full-time on supporting youth. One study looking at the preferences of youth professionals and working full time found that youth professionals, when working full-time on providing exceptional experiences for youth found that there were increases in job competency amongst youth professionals and helped to build and strengthen relationships with the youth they worked with (Lakind, Eddy, & Zell, 2014). It is clear from the data and interviews that the youth professionals and the relationships they build with the teens are vital to the program's effectiveness. Bocarro and Witt (2018) emphasize the absolute necessity of relationship-based programming in youth programs. They also stress the importance of spending substantial amounts of time on the development and implementations of relationship-based programming. Adding a full-time youth professional exclusively dedicated to exceptional programming in a youth program could expand the program offerings and abilities and potentially be a solution

for any issues sparked from routine and structure, civic engagement, and even strategic support and collaboration.

Zoos and aquariums are ISE organizations that can offer youth unique opportunities through volunteer programs and environmental action programs. These programs increase conservation behaviors and a youth's likelihood to thrive as an adult by giving back to one's community. We hope our research will be beneficial for ISE organizations, especially zoos and aquariums, with program design and development. From our research, we learned that more time spent in an organization increases the youth's self-reported PYD and civic engagement outcomes. We recommend that zoos and aquariums offer strong incentives in their programs to reduce attrition and potentially help youth self-report PYD and civic engagement outcomes. We learned that strategic support and collaboration are highly valued by youth as it can be an avenue for voice. We recommend youth programs in zoos and aquariums do their best to build and maintain strong relationships with other departments and seek support from these departments to offer youth a platform. One of our most prominent findings was the appreciation around opportunities for engagement from youth, from camping trips to the youth board of directors. We recommend that zoos and aquariums offer a plethora of opportunities, such as a youth board of directors where youth are making the decisions that affect them and their peers. This will not only offer youth opportunities for engagement and leadership, but it will allow them a platform for their voices to be heard. We learned that relationships with peers and adults are vital for youth and create an avenue where youth are more likely to report PYD and civic engagement outcomes. We recommend that youth programs build time into their schedules and plan programs for

youth to build relationships with each other and adults. Environmental action, coupled with PYD practices, in ISE settings clearly offers youth unique opportunities to build skills, thrive, and create a more probable avenue for civic engagement in the future.

Limitations and Future Study

This study was limited by several factors. Since the sampling was voluntary participation the survey results may not be generalizable to other youth groups and programs. However, since the study was a case study, it has inherent strengths and limitations. Hodkinson and Hodkinson (2001) argue that case studies offer an understanding of complex and casual relationships in real-life experiences. They also argue that case studies offer knowledge of sometimes unexpected and unusual findings and help deepen the pool of shared knowledge in conceptual and theoretical learning. However, Hodkinson and Hodkinson (2001) also argue the limitations of case studies, such as being non-generalizable, not always objective, easily dismissed, and cannot “answer a large number of relevant and appropriate research questions” (p. 10). Since this research was designed mostly as a program evaluation, it doesn’t answer large theoretical implications for the field of youth development, but rather helps individual practitioners cater their program to the needs of the youth.

Other limitations of the study consist of external factors that influence PYD and civic engagement outcomes. For example, if these youth are enrolled in multiple other youth programs, they may be experiencing PYD or civic engagement benefits from both programs. For example, Andolina et. al (2003) argues that intergenerational learning has major impacts on youth and their proclivity for civic engagement. There is no way to know how to measure, in the scope of this research project, to what extent all

participants attributed their civic engagement practices to other life factors, such as their parents, what they learned in school, or from other youth programs. Our study was a case study that measured civic engagement intent and practice in the context of environmental action.

Based on what we learned from the shortcomings of this study, we recommended that future studies take a longitudinal approach to examine how youth involved in BTB view environmental issues, and how they practice civic engagement to capture long-term impacts of a youth program utilizing environmental action with PYD and civic engagement outcomes in mind. A strength of using a longitudinal approach could be to measure external factors such as participation in other programs, parental influence, prior knowledge, awareness, and behavior. Our study serves mostly urban and suburban youth. Future studies may investigate how utilizing PYD in an environmental action program affects civic engagement for youth in urban, rural, and suburban settings. Since our study was unique in quantitatively measuring PYD and civic engagement outcomes, we had to design our own survey measurement. While we ran a reliability test, it will be important for future studies to continue to use the same survey instrument to continue to test its reliability and validity.

Conclusion

Zoo ALIVE and BTB are two powerful parts of the Saint Louis Zoo's education department that promote civic engagement in teens via an environmental action program while utilizing elements of positive youth development. We recommend a full-time employee exclusively dedicated to Zoo ALIVE, increased advertising for the program, and focus on new environmental action campaigns and initiatives to not only

further the conservation efforts of the zoo, but to help youth become active members of society by reaping the benefits of positive youth development through environmental action.

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Appendix 1: Informed Consent for Youth

Hello Parents/Guardian of Zoo ALIVE Volunteers!

Thank you for allowing your child to participate in this study. You are being contacted because your child has participated in Zoo ALIVE and/or the Bye to Bags programs I would like to thank the National Science Foundation and Prairie Fork Conservation Area who have provided tools for environmental educators to better develop education programming for all ages and are the current funders of the Master's Project .

The goal of this research is to understand self-identification of positive youth development outcomes such as sparks, empowerment, and voice in the Bye to Bags program and what role adults played in bringing about these outcomes. This research also intends to understand if teens are inclined to be civically engaged as an adult and if current alums of the program practice civic engagement.

We will be using a survey to measure the aforementioned variables. This survey will be administered between the months of April and September of 2019.

Surveys are expected to take between 10-20 minutes each. Your child's participation is completely voluntary in this process with no risk to you or your child. You may choose to withdraw your child or your child may choose to not participate at any time. Your child's identity will remain anonymous.

If you have any questions about the survey, please contact Sydney Barnason at snbr56@mail.missouri.edu or 314-707-8136, or Christine Li, my advisor are lij1@missouri.edu or 573-882-0613. If you have any questions about your rights or your child's rights as a research participant, you may contact the University of Missouri Columbia's Institutional Review Board at 573-882-3181 and reference IRB #2013963. This study is funded by Prairie Fork Conservation Area and the National Science Foundation in collaboration with University of Missouri Columbia.

If you allow your child to take the survey, please provide them with the following link: https://missouri.qualtrics.com/jfe/form/SV_eX2gP5k5MCu54Ox, or scan the QR code below. To maintain accordance with the Institutional Review Board Standards, all those under 18 must attain parental consent to participate in a study. By providing your

child with the survey link, we will assume you are consenting to allow your child to take the survey.



Thank you again for your participation,

A handwritten signature in black ink that reads "Sydney Barnason".

Sydney Barnason

Master of Science Candidate for Human Dimensions of Natural Resources

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Appendix 2: Informed Consent for Adults
**Exploring Positive Youth Development and Civic Engagement in an
Environmental Action Program at the Saint Louis Zoo**

Hello!

Thank you for participating in this study. In partnership with the National Science Foundation and Prairie Fork Conservation area provides tools for environmental educators to better develop education programming for all ages.

The goal of this research is to understand self-identification of youth empowerment and self-efficacy of environmental behaviors in the Zoo ALIVE program and understand the relationship between those variables and the current youth development practices involved by the supervisors and mentors of the program. This research also intends to understand if teens are inclined to be civically engaged as an adult and if current alums of the program practice civic engagement.

We will be conducting semi-structured interviews to measure the aforementioned variables. These interviews will occur over the phone, in person, or over video chat. Interviews are expected to take between 1-2 hours each. Your participation is completely voluntary in this process with no risk to you. You may choose to withdraw or not participate at any time. Your identity will remain confidential. Data collected will be kept for up to seven years after collection at the researching institution and then destroyed. At no time will we tie names to data we report in our findings.

If you have any questions about the interview or survey, please contact Sydney Barnason at 314-707-8136. If you have any questions about your rights as a research participant you may contact the University of Missouri Columbia's Institutional Review Board at 573-882-3181 and reference IRB # 2013963. This study is funded by Prairie Fork Conservation Area and the National Science Foundation in collaboration with University of Missouri Columbia.

Thank you again for your participation,



Sydney Barnason

Master of Science Candidate for Human Dimensions of Natural Resources

School of Natural Resources

University of Missouri Columbia

Columbia, MO 65201

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Appendix 3: Bye to Bags Survey

1. Demographic Data
 - a. My gender is
 - i. Male
 - ii. Female
 - iii. Transgender
 - iv. Prefer not to say
 - b. I am
 - i. Hispanic/Latino
 - ii. Not Hispanic/Latino
 - c. My race is
 - i. Native America or Alaska Native
 - ii. Asian or Pacific Islander
 - iii. African American or Black
 - iv. White
 - v. Mixed/Biracial
 - vi. Other (please specify) _____
 - d. How old are you?
 - i. 14
 - ii. 15
 - iii. 16
 - iv. 17
 - v. 18
 - vi. 19
 - vii. 20
 - viii. 21
 - ix. 22
 - x. 23
 - xi. 24
 - e. Are you a...?
 - i. New volunteer (joined 2019)
 - ii. Current volunteer (joined 2018 or earlier)
 - iii. Alum of Zoo ALIVE (graduated high school and no longer volunteer at the zoo)
2. Have you worked any events in Zoo ALIVE?
 - a. Yes (if yes, move to question 3)
 - b. No (if no, move to question 5)
3. Have you ever worked a bye-to-bags event?
 - a. Yes (if yes, move to question 4)
 - b. No (if no, move to question 5)
4. Approximately how many bye-to-bags events have you worked?
 - a. 0
 - b. 1-5

- c. 6-10
 - d. 11 or more
5. Zoo ALIVE Data (questions for control and questions that zoo has requested to be incorporated into survey for their own understanding of the project)
- a. How many hours have you volunteered in Zoo ALIVE (approximately?)
 - i. 0-50
 - ii. 51-100
 - iii. 101-300
 - iv. 301-500
 - v. 501-800
 - vi. 801+
 - b. In a calendar year, I attend _____ monthly meetings (select answer that best applies to you)
 - i. 1-2
 - ii. 3-4
 - iii. 5-6
 - iv. 7-8
 - v. 9-10
 - vi. 11-12
 - c. What events do you do with Zoo ALIVE outside of the required 2 monthly events and 1 monthly meeting? (select all that apply)
 - i. Social gatherings outside of the zoo
 - ii. Fall trip
 - iii. Spring trip
 - iv. International Trip
 - v. Turtle project/Turtle trip
 - vi. Partula Snails
 - vii. American Burying Beetles/ABB trip and release
 - viii. Poster presentation
 - ix. Attended conference
 - x. More than the required two events
 - xi. None
6. Bye to Bags sense of ownership
- a. I feel a sense of ownership to the Bye to Bags program.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree
 - b. I feel very connected to Bye to Bags.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree
 - c. I feel like I have some control and say in what goes into the events and program.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree
7. Positive Youth Development Outcomes (Scales et. al, 2011)
- a. Sparks

- i. Because of Bye to Bags I have found my “spark”. A spark is “When people are really happy, energized, and passionate about their talents, interests, or hobbies, we say they have a “spark” in their life. This spark is more than just interesting or fun for them. They are passionate about it. It gives them joy and energy. It is a important part of their life that gives them real purpose, direction, or focus” (Scales et al. 2011)
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
- b. Empowerment
 - i. When I spend time working on something to do with Bye to Bags I develop warm and trusting relationships with adults
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - ii. I feel that if I ask for help from the adults involved with Bye to Bags, I will get the resources I need
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - iii. Within Bye to Bags, I feel supported by the adults when I talk about my talents, interests, or hobbies
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - iv. Within Bye to Bags I am encouraged by the adults to pursue my talents, interests, or hobbies
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - v. I feel that Bye to Bags has helped me develop at least one skill that will help me in my future career
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - vi. I feel that Bye to Bags has helped me make friends, meet other people, or deepened an already existing relationship
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - vii. Because of Bye to Bags, I take the initiative to develop my talents, skills, interests, or hobbies
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
- c. Voice
 - i. The adults who have the decision-making power in Bye to Bags listen to what I have to say.
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - ii. I am given lots of chances to help plan Bye to Bags events, create new opportunities for Bye to Bags
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - iii. I share what I know about Bye to Bags to help make the Zoo, Saint Louis, and the world a better place
 - 1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - iv. Because of what I have learned from Bye to Bags, when things don’t go well for me, I am good at finding a way to make things better

1. Strongly disagree, disagree, neutral, agree, strongly agree.
 - v. Because of Bye to Bags, I believe that my actions make a big difference
 1. Strongly disagree, disagree, neutral, agree, strongly agree.
8. Civic Engagement (questions based on information from Chawla and Cushing, (2007) Scales et al. (2011), and Pittman et al. (2003))
- a. Are you currently involved in any other organizations besides Zoo ALIVE (i.e. clubs at school, church groups, model UN, etc.)
 - i. Yes
 - ii. No
 - iii. If yes, how many? _____
 - b. Because of Bye to Bags, when I turn 18, I intend to vote
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - ii. I am already 18 and have voted in at least one election.
 - iii. I am already 18 and have not voted yet because there have been no opportunities for me yet
 - iv. I am already 18 and I have had the opportunity to vote, but I have not and do not intend to
 - c. Because of Bye to Bags, I have or plan to write to public officials
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - d. Because of Bye to Bags, I have or plan to give money to a political candidate or cause
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - e. Because of Bye to Bags, when I leave high school, get to college, or enter the work force, I intend to continue volunteering in my community
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - f. Because of Bye to Bags, I believe I have a strong understanding and awareness of environmental issues.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - g. Because of Bye to Bags, I value the environment and nature.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - h. Because of Bye to Bags, I believe that I can make a change.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - i. Because of Bye to Bags, I value the environment to a point where I will sacrifice or give up certain luxuries or conveniences to help the environment.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - j. I inform friends, family, and others about the environment and pro-environmental behaviors because I feel that it is important to do so outside of Bye to Bags.
 - i. Strongly disagree, disagree, neutral, agree, strongly agree.
 - k. Because of Bye to Bags, I encourage friends, family, and others to act to reduce their impact on the environment.

i. Strongly disagree, disagree, neutral, agree, strongly agree.

Appendix 4: Alum Interview Questions

Demographic Info:

Name:

Age:

School:

Years attended college:

Address:

Residence (City):

Zip Code:

State:

Where are you from?:

No detail is too much detail. As much as you can remember about these experiences and articulate them to me, will be beneficial to the research outcomes!

Interview Questions for Alums of Zoo ALIVE

Begin with Rhetorical question: think back to your 16 year old self. Recall....How hot or cold was it within your first few interactions in zoo alive? What part of the zoo were you in? Who were you with? What did it smell like? What were you wearing? Etc. What was your first memorable experience with Zoo ALIVE? What made it memorable?

1. Tell me the origin story of Bye to Bags and the role you played in BTB?
 - a. Tell me about your first encounter with Bye to Bags?
 - b. How did you first become involved and how did that role evolve?
2. What do you think is the most potent or powerful aspect of Bye to Bags?
 - a. to you?
 - b. to your community (then and now)?
 - c. to the environment?
3. Tell me any story, moment, or experience within Bye to Bags that fundamentally affected you or your views on the environment and sustainability? How did you think before, and how did you think after Zoo ALIVE?
 - a. What specifically do you attribute these changes to?

- b. IF they mention a mentoring relationship having an influence on them: What was it about that experience or about that person that was meaningful to you then? Now?
4. Thinking about your life more recently, in what ways do you interact or participate in your community?
 - a. Prompt if necessary: Voting, service, etc.? For example do you vote in every election or just when you think it's important? Are you member of local church or volunteer organization? Do you regularly help with trash pickups or other community improvement projects?
5. Based on this community engagement, in what ways did Bye to Bags shape this, if at all?
6. Thinking of you then and now, what advice would you give to your 15/16 year-old self or others engaged in Bye to Bags or thinking about engaging in Zoo ALIVE?
7. Can you remember why you originally chose Zoo ALIVE? What made you stay in Zoo ALIVE? Why did you originally choose Bye to Bags? What made you want to stay involved in Bye to Bags?
8. What did you like most about Bye to Bags? Was there anything you disliked? Why?
9. Is there anything else you would like to share that we haven't covered?

Appendix 5: Youth Professional Interview Questions

Demographic Info:

Name:

Age:

School:

Years attended college:

Address:

Residence (City):

Zip Code:

State:

Where are you from?:

No detail is too much detail. As much as you can remember about these experiences and articulate them to me, will be beneficial to the research outcomes!

Interview Questions for Mentors/Supervisors of Zoo ALIVE

1. Tell me the origin story of Zoo ALIVE?
2. Tell me the origin story of Bye to Bags?
3. When you start your work day with the volunteers, How do you get into a mindset to work with the volunteers? Is there a “philosophy” to your approach to working with youth or volunteers?
4. How do you view yourself in the context of a mentor for the youth in the program? How do you characterize your “brand” or style of mentoring volunteers?
5. Can you remember a specific instance or story that changed you based on an interaction with a volunteer or group of volunteers?
6. What do you want the volunteers to get out of Bye to Bags and Zoo ALIVE as a whole?
7. Thinking back to your answers to “how you get in a mindset, how you view yourself as a mentor, and memorable experiences”, what would be your take away message from all of this?
8. Is there anything else you would like to share that we haven’t covered?

9. Based on the following definitions, please tell me how you think that you personally do or say things that help teens receive the following outcomes?
- a. Spark: A spark is “When people are really happy, energized, and passionate about their talents, interests, or hobbies, we say they have a “spark” in their life. This spark is more than just interesting or fun for them. They are passionate about it. It gives them joy and energy. It is a important part of their life that gives them real purpose, direction, or focus” (Scales et al. 2011). Sparks are facilitated by caring adults in a youth’s life (Witt & Caldwell, 2018)
 - b. Empowerment: Empowerment is something defined as the belief or agency that one can make social change, do things for others, and making a difference in society (Scales et al. 2011)
 - c. Voice: “Voice is the opportunities for youth to express their ideas and have input into programs, policies, and practices that affect them” (Witt & Caldwell, 2018, p. 443).

Appendix 6: Interview Activity for Alums and Youth Professionals

Please Read: Positive Youth Development Definition: Positive Youth Development (PYD) is a strength-based approach focusing on the potential of youth. It can be defined as “meeting you where they are at” and helping them success from that point on. Another way to define it can be a community framework to support youth to grow up and be fully prepared, engaged, healthy, and develop to their full potential.

For this exercise, I would like you to highlight in purple the practices outlined below that are involved in Bye to Bags and explain why you think those exist. If they do not exist within Bye to Bags but do exist within Zoo ALIVE, please highlight in pink and clarify. If they exist in both, please highlight in green. If a practice does not exist, in your opinion, in either Zoo ALIVE OR Bye to Bags, leave blank and explain why you think it is not present in the program.

Policies and Practices

- All spaces provide physical and psychological safety
- Adults are well trained to work with youth
- All levels of Bye to Bags (Board, Management, etc.) incorporates practices that aid in youth development
- ZAs and adults are equal partners
- Bye to Bags offers opportunities and supports focused on strength, NOT on prevention of negative developmental outcomes
- The mission statement of Bye to Bags incorporates youth development language
- Surveys are conducted by the Zoo to measure Bye to Bags outcomes for ZAs

High Expectations

- There are clear expectations set for Bye to Bags between adults and ZAs
- There are ample opportunities for participation and support and these opportunities offer positive experiences for ZAs

Skill Building

- Bye to Bags promotes action, responsibility, and accountability from ZAs
- Bye to Bags activities offer areas for youth to build on existing or create new, strengths, interests, and preferences

Engagement

- Bye to Bags encourages ZAs to engage in their community
- Bye to Bags recognizes achievements of ZAs
- Bye to Bags offers the ability for youth to gain or strengthen competence, connection, character, confidence, and compassion

- Bye to Bags is concerned with ZAs' personal development OUTSIDE of bye to bags events and meetings
- Bye to Bags empowers ZAs to take on leadership roles
- Bye to Bags offers opportunities for skill-building through traditional events and community involvement.

Routine and Structure

- The adults involved in Bye to Bags are positive role models and offer consistent support, empowerment, high expectations and constructively use time.
- Bye to Bags is developmentally appropriate
- Bye to Bags buffers ZAs from engaging in risky behaviors (i.e. alcohol abuse, unsafe sex, drug abuse, etc.)
- Bye to Bags has a clear daily structure
- Bye to Bags has an appropriate adult to ZA ratio
- Adults clearly communicate expectations

Relationships

- Bye to Bags measures ZA satisfaction through surveys and takes suggestions seriously
- Meaningful ZA-adult partnership is visible throughout Bye to Bags
- Bye to Bags equips both ZAs and adults to have healthy and positive relationships
- After involvement in Bye to Bags, there are opportunities for long-term professional relationships between former ZAs and adults

Strategic Support and Collaboration

- Individuals and Organizations work together to promote Bye to Bags and youth development, engagement and support.