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# **Understanding Support for Actively Managed Protected Areas: The Case of the Albany Pine Bush Preserve**



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## **EXECUTIVE SUMMARY**

Many nature preserves and natural areas require the use of active management practices (i.e. prescribed fire, mechanical treatments, herbicide) to mitigate competition, promote soil fertility, and maintain the overall health of the preserve. However, little is understood about the public's attitudes, awareness and support for actively managed urban nature preserves. Historically, public acceptance of management practices often depends on the types of management practices used and the context in which they are used. In addition, the public's level of understanding about the management practices and why they are used can influence their acceptance of those management practices. Therefore, it is important to understand public support for and opposition to the use of active management practices at urban nature preserves.

### **Study Objectives:**

1. Explore the public's acceptance of active management practices in an urban environment
2. Investigate public attitudes, awareness, and support for an actively managed urban nature preserve

### **Study Site: The Albany Pine Bush Preserve**

The Albany Pine Bush Preserve is one of the world's largest inland pine barren ecosystems with over 3,300 acres of land. The preserve borders an urban interface including the cities of Albany (pop. 98,556) and Schenectady (pop. 65,936) and the towns of Guilderland (pop. 35,303) and Colonie (pop 81,591) and is home to over 76 species that are either endangered or at-risk of becoming endangered (U.S. Census, 2015; Barnes, 2003). To maintain species diversity and ecosystem health, the Albany Pine Bush Preserve like other young forest habitats, requires the use of active management techniques, such as tree cutting, prescribed fires, and invasive species removal. Many residential and commercial buildings border the preserve and in some cases, businesses are surrounded by preserve land. As a result, active management techniques that border businesses, homes, and commercial spaces are particularly visible and have led to some opposition by community members. In addition to its focus on restoration and preservation, the Albany Pine Bush Preserve (APBP) also provides recreational and educational opportunities to the public. The preserve has over 20 miles of marked trails that can be used for a variety of recreational activities. The APBP's Discovery Center contains interactive exhibits, educational programs and materials for the public.

### **Methods**

Five research methods were employed to understand public awareness and support for the Albany Pine Bush Preserve, an actively managed urban nature preserve. These research methods were: 1) resident and visitor intercept surveys, 2) interviews with residents and visitors 3) interviews with APBP staff, 4) surveys of local residents (mail survey) and APBP Discovery Center visitors (web survey), and 5) a pilot analysis of the educational exhibits in the APBP's Discovery Center.

### **Key Findings**

**Visitor Use of the APBP:** We found that 51% of the residents living within a 10-mile radius of the APBP (mail sample) had visited the Albany Pine Bush Preserve, and of those

who visited about one-third of them engaged in a combination of independent and APBP-led activities. However, the majority of visitors from the mail sample did not engage in APBP programming. Of the web sample, most individuals (85%) engaged in a combination of independent activities and APBP-led programming. From our pilot analysis of the exhibits in the Discovery Center, we found that the exhibit areas providing an introduction to the Pine Bush (Section 1) and the ecosystem of the Pine Bush (Section 2) were the most engaging for visitors, as measured by time spent at the exhibit and whether they read the exhibit text, engaged with exhibit manipulatives, and/or discussed the exhibit with members of their group. The exhibit about controlled burns and active management at the preserve (Section 3) appealed more to adult visitors while the early learners' area (Section 5) was attractive for younger visitors. The exhibit area about the human history of the Albany Pine Bush Preserve (Section 4), was the least engaging exhibit area and generated some confusion among visitors about its purpose. Further analysis of the effectiveness of educational exhibits on knowledge, engagement, and support for the APBP is needed.

**Preserve Knowledge:** Between 80-90% of both resident (mail) and visitor (web) respondents believed that protecting the Karner blue butterfly, protecting the ecosystem, and educating the public were goals of the Albany Pine Bush Preserve. Fewer individuals recognized providing a space for public use as a goal. On average, survey respondents could identify two management practices used at the preserve. We found significant differences in individuals' level of knowledge about the Albany Pine Bush Preserve, its goals, and how it is managed across visitor type. Visitors who participated in both preserve-led and independent activities had significantly higher levels of preserve knowledge than non-visitors. Discovery Center visitors from the web sample also were found to have significantly higher levels of knowledge about the APBP than residents from the mail sample.

**Awareness of Management Practices:** Of the management practices used at the Albany Pine Bush Preserve, interviewees and survey respondents were the most aware of the preserve's use of prescribed burns. Fewer respondents were aware of invasive removal, and individuals were the least aware of the mechanical treatments (cutting and mowing). High levels of awareness about prescribed burns may be reflective of the preserve's longer history of outreach efforts. For more than two decades, nearly all individuals living near the preserve have been sent a pre-burn season postcard annually, and many are called prior to daily prescribed fire activities to inform them of pending burns. Mechanical treatment outreach, however, is far less extensive, targeted to specific neighborhoods nearest the operation, thus the public at-large is more aware of the preserve's use of prescribed burns than they are of APBP use of mechanical treatments. The preserve also uses a variety of outreach techniques to share information about all types of management including: 1) reaching out to local media outlets to inform the public about their practices, 2) integrating information about the use of active management at the preserve into all of their programming, 3) educational exhibits at the Discovery Center, and 4) signage near trail heads at the managed sites.

**Attitudes and Opposition to Management Practices:** Overall, residents (mail survey) and visitors (web survey) had the most positive responses to prescribed burns and the most negative responses to the use of mechanical treatments (i.e. mowing and cutting). However, only a small proportion of these negative attitudes translated into intentions to oppose the use of management practices at the Albany Pine Bush Preserve (16% of residents and 8% of visitors). The small percentage of those who intended to oppose, would most likely do so for the mechanical treatments such as mowing and cutting. We found that individuals with more education had significantly lower levels of intention to oppose the use of management practices than did individuals with less education. Findings show that higher levels of education may reduce individuals' intention to oppose the preserve and its management.

**Opportunities for Improvement:** One of the most common opportunities for improvement identified by both staff members and residents was improved outreach due to the public's lack of awareness about the existence of the Albany Pine Bush Preserve. Many residents reflected on their own experiences "stumbling" upon the preserve and suggested that the Albany Pine Bush Preserve Commission (APBPC) could do more things to promote the preserve. While staff members have seen improvements in local awareness about the preserve, they were wary about extensive outreach efforts that may threaten the balance between protection of a sensitive ecosystem and providing a space for public use by increasing the number of visitors who use the preserve. From their perspective, because the preserve is extensively fragmented by human development, increased use could lead to ecological damage from the overuse of legal trails and proliferation of illegal trails. Preserve managers could also increase outreach about mechanical management practices such as mowing and harvesting. While the preserve has been increasing their efforts to raise awareness with the placement of signs near managed areas, results show that some of the signs were unread or did not resonate with individuals because the signs were not well understood. Finally, there was a lack of understanding of how to effectively support the preserve. Individuals were unsure about whether the preserve needed donations or not. Thus, an improvement would be more explicitly stating how individuals can support the Albany Pine Bush Preserve (e.g. through the Friends of the Pine Bush) and ensure that the information is communicated widely and easily accessible (i.e. online, pamphlets, etc.).

**Public Support for the APBP:** About 46% of residents from the mail survey and 82% of Discovery Center visitors from the web survey self-identified as supporters of the APBP. However, there were differences between the types of behaviors residents believed could support the APBP and those that were identified by staff members. While most of the residents discussed visiting the preserve, donating money, and engaging in activism as ways to support the preserve, staff members mostly identified volunteering, talking positively, and donating money to the Friends of the Pine Bush group as support behaviors. From our survey, we found that residents and visitors from both mail and web samples were more likely to perform civic behaviors (i.e. talking positively and visiting the preserve) than political behaviors (i.e. donating money, volunteering, or writing a letter of support). However, donating money was the most popular political behavior

reported by participants from both samples. In the mail sample, we found that visitors who engaged in APBP-led programming and independent activities had higher intentions to support the APBP than visitors who only engaged in independent activities at the preserve and non-visitors. Finally, women had higher intention to support than men and individuals who lived closer (<5 miles) to the preserve had greater intentions to support the APBP than those who lived further from the preserve (5-10 miles).

### **Recommendations for Land Managers and Environmental Educators**

First, when introducing active management practices to the public, emphasizing the importance of human intervention to the health of the ecosystem can be an effective way to reduce misunderstandings about the role of management in conservation. This may mitigate negative reactions to the use of active management practices and facilitate further discussions of the types of management practices used and why. From our results, we found that Discovery Center visitors from the web sample who attended more APBP-led programming had significantly lower intentions to oppose management practices than resident from the mail sample. Therefore, utilizing signage, media coverage, and/or educational programming to effectively communicate what management activities are being employed and why may raise local acceptance of those management practices and reduce individuals' intentions to oppose habitat management. These methods may be particularly beneficial in urban settings because our results show that some residents mistook management for commercial development.

In addition, ensuring staff are available to listen to community complaints and quickly respond to concerns may also bolster public acceptance of management practices. This process may be integrated into educational programming or through events to chat with staff members. We found that both the Albany Pine Bush Preserve's use of public outreach and quick responses to the public's concerns about prescribed burns may have led to the high levels of acceptance of prescribed burns and individuals' low intentions to oppose these management practices. Thus, similar approaches may be effective in other contexts or for other active management practices such as mechanical treatments and invasive species removal.

## **ACKNOWLEDGEMENTS**

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## INTRODUCTION

The purpose of this study was to understand public attitudes, awareness, and behaviors related to an actively managed urban nature preserve, the Albany Pine Bush Preserve. Active management practices are human interventions used to improve the health of an ecosystem. Active management techniques include prescribed burns which are controlled fires that promote soil fertility, allow seed dispersal, and mitigate competition (Askins, 2001); mechanical treatments such as cutting and mowing; and herbicides used to remove invasive species and create openings in forests or other habitats (Lorimer, 2001). Active management practices have also been used to reduce the risk of severe wildfires in the Western United States (Cortner, et al., 1984; Czaja, et al., 2016; Taylor & Daniel, 1984) and provide economic benefits to communities who utilize sustainable harvesting in forests in the United States (Rogers, Hoover, & Allred, 2013; Schaaf, Ross-Davis & Broussard, 2006).

Public acceptance of management practices depends on attitudes towards the management practice itself, the context in which the practice is used and the management practice itself since different practices have varying levels of acceptance. For example, prescribed burns are widely accepted by the public especially when used to reduce the risk of severe wildfires (Cortner, et al., 1984; Loomis, et al., 2001; Taylor & Daniel, 1984). In contrast, mechanical treatments such as the cutting of trees and mowing have been viewed negatively by the public (Gobster, 1997; Gobster, 2000; Temple, 1990). However, public knowledge and understanding of the management practices and why they are used can help improve the public's acceptance of management practices (Rogers, Hoover & Allred, 2013; Taylor & Daniel, 1984).

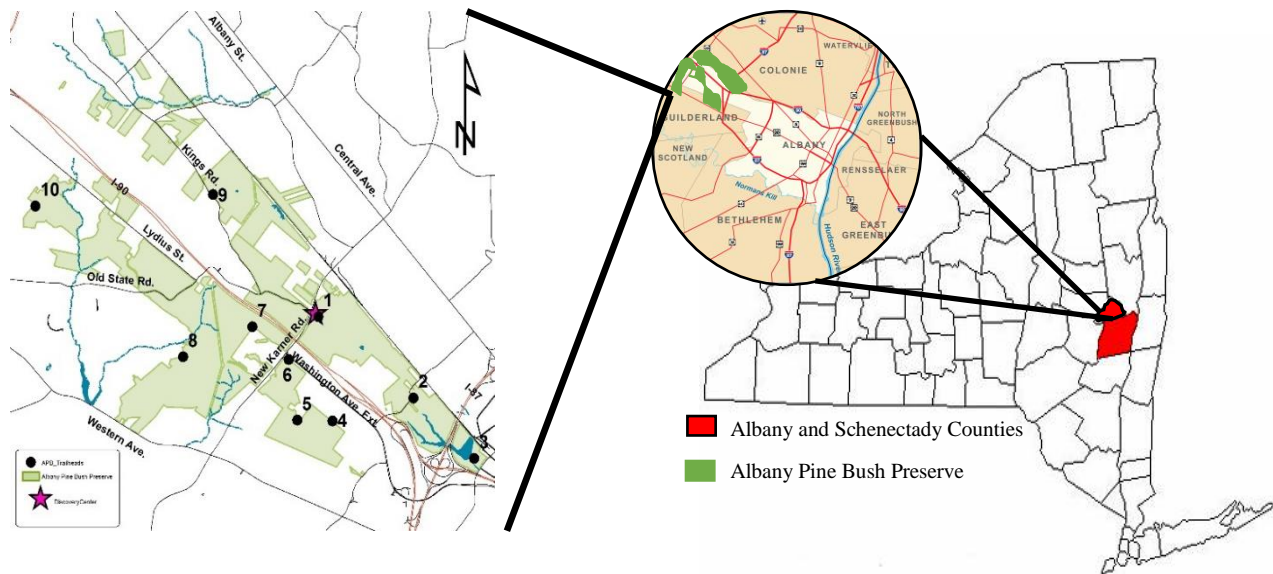
In addition, individuals' value and preference for natural environments over built environments may impact individuals' acceptance or opposition to management practices. For example, within urban contexts, individuals hold strong attachments to trees and are often upset with their removal (Dickie, et al., 2014; Gobster, 1997). It is believed that this may stem from the need to interact with natural environments to promote humans' mental and physical health (Beatley, 2009; 2011; Pretty, 2004). While this appreciation of natural spaces may influence individuals' attitudes towards active management, it also has been found to be correlated with higher levels of environmental support. But, it remains unclear how the public reacts to a preserve's use of active management practices and their level of support for an actively managed nature preserve in an urban environment. Therefore, we seek to explore the public's acceptance of active management practices in an urban environment and investigate their attitudes, awareness and support for an actively managed urban nature preserve.

### **The Albany Pine Bush Preserve**

The Albany Pine Bush Preserve (APBP) is a 3,300-acre nature preserve just north of Albany, New York (Figure 1). Since 1973, land has been set aside to protect an inland pine barren ecosystem, a type of fire-maintained young forest or early-successional habitat that consists mostly of shrubs, grasses, and trees adapted to the area's sandy soil (Figure 2). Today, the Albany Pine Bush Preserve is one of the world's largest inland pine barren ecosystems. The preserve is the home to at least 76 species that are either endangered or at-risk of becoming endangered (i.e. the Karner Blue Butterfly, Buck Moth, and the Spotted Turtle) and are reliant upon elements of the

habitat. To maintain species diversity and ecosystem health, the Albany Pine Bush Preserve like other early-successional habitats, requires active management techniques, such as the use of tree cutting, prescribed fires, and invasive species removal (Barnes, 2003). Thus, areas of the preserve are frequently changing from highly forested to open landscapes, which has caused some concern from the public.

**Figure 1.** Map of the Albany Pine Bush Preserve.



**Figure 2.** Images of the Albany Pine Bush Preserve landscape.



The preserve borders an urban interface including the cities of Albany (pop. 98,556) and Schenectady (pop. 65,936) and the towns of Guilderland (pop. 35,303) and Colonie (pop. 81,591) (U.S. Census, 2015). Because the land managed by the preserve is fragmented (Figure 1), there are many residential and commercial buildings that border the preserve and in some cases, businesses are surrounded by preserve land. Due to the highly-urbanized nature of the land surrounding the preserve, active management techniques that border businesses, homes, and

commercial spaces are particularly visible and have led to some opposition by community members.

In addition to its focus on restoration and preservation, the Albany Pine Bush Preserve staff seek to educate the public about the history and management of the Albany Pine Bush Preserve. In 2007, the preserve added a Discovery Center with interactive exhibits and educational programs and materials for the public. The Discovery Center and its programming are one of the main resources to educate visitors about the preserve's unique habitat, species, and active management. Finally, the preserve provides recreational spaces for the public and has created over 20 miles of marked trails within the preserve for a variety of recreational activities (i.e. running, biking, horseback riding, etc.). Hunting, fishing, and trapping are permitted in designated areas of the preserve. However, due to the sensitive ecosystem, motorized recreational vehicles are prohibited (i.e. ATVs, snowmobiles, etc.).

## **Purpose of Report**

Considering vocalized discontent with the use of active management practices on preserve land from some local residents, the Albany Pine Bush Preserve Commission (APBPC) was concerned about whether such public opposition could inhibit the continued active management of the preserve lands. Public discontent with active management practices has previously delayed or impeded restoration work in other nature preserves and natural areas across the country (e.g. Forman-Cook, Malmshiemer & Germain, 2015; Mortimer, et al., 2006; Shore, 1997). In some contexts, education efforts have increased individuals' acceptance of management practices which may reduce land manager concern about public pressure to change or halt conservation efforts (Kaval, et al. 2007; Loomis, et al., 2001; McCaffrey, et al., 2013; Rogers, Hoover, & Allred, 2013). We seek to explore the relationship between knowledge and acceptance of management practices in an actively managed urban nature preserve. In addition, we investigate the public's levels of support for and opposition to an actively managed nature preserve. While this report is focused on the Albany Pine Bush Preserve, the results of this study can be useful for land managers, nature preserve staff, urban natural area personnel, natural resource educators, and anyone who engages in public education and support for habitat management.

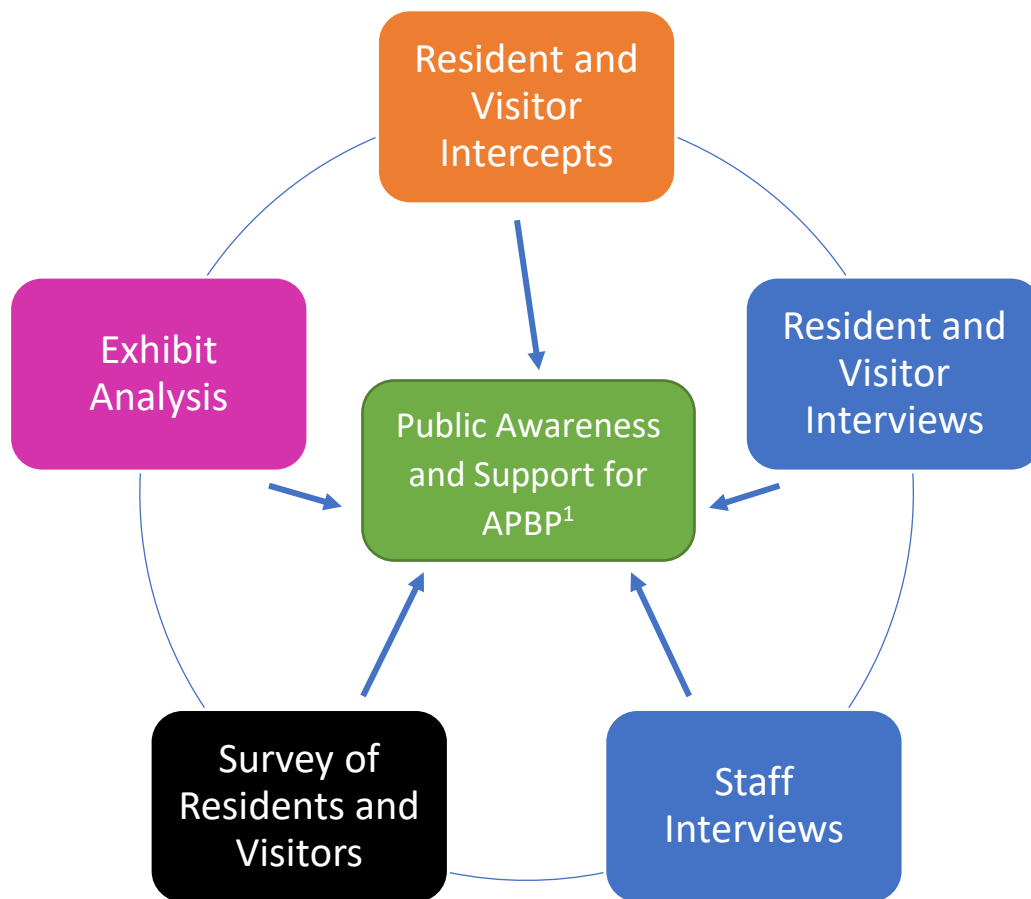
This study 1) explores the public's acceptance of active management practices in an urban environment, 2) provides recommendations for promoting public knowledge about active management practices and their use, and 3) provides recommendations to better engage the public about active management practices and early-successional habitats.

## **METHODS**

To understand public awareness and support for the Albany Pine Bush Preserve, we used a mixed methods approach that consisted of in-person intercept surveys of residents and visitors, interviews with both staff and residents/visitors, a mail survey of residents living near the preserve, a web survey of Albany Pine Bush Preserve (APBP) visitors, and a pilot analysis of the Discovery Center exhibits (See Figure 3). Resident and visitor intercepts were used to identify individuals to conduct resident and visitor interviews. Responses from both staff and resident interviews were used to inform questions on a survey sent to both residents and visitors. Survey results were then

compared to staff perceptions of residents' knowledge, attitudes, and engagement with the APBP. Finally, since the Discovery Center is a unique component of the Albany Pine Bush Preserve, we evaluated the impact of the exhibits on visitors' knowledge about the Albany Pine Bush Preserve and its management techniques. The methods for each of the components are outlined below.

**Figure 3.** Data Collection Overview. Each color represents a different data collection method.



<sup>1</sup>Albany Pine Bush Preserve

### Resident and User Intercepts

We started with intercept surveys of residents and visitors in six locations near the Albany Pine Bush Preserve (Colonie Center, Crossgates Mall, Guilderland Public Library, The Discovery Center/Green Trail, and Trails 7 and 8 at the Albany Pine Bush Preserve). Individuals encountered during the 2-hour time period a researcher was there were approached about participation in the study. After providing consent to participate, individuals were then asked questions about their local residency, their awareness of and engagement with the Albany Pine Bush Preserve, and what came to mind when thinking about the preserve (See *Appendix A*). The intercept surveys took approximately 5-minutes to conduct. At the end of the intercept survey individuals were asked if they would be willing to talk more about their experiences with the Albany Pine Bush Preserve in a telephone interview. If they agreed, their contact information was collected. We approached a



total of 112 individuals (i.e. 8 near the Guilderland Library, 24 near Crossgates Mall, 13 near the Colonie Center, 60 at the APBP Discovery Center/ Green Trail, 6 at Trail 8 and 1 at Trail 7), received completed intercept surveys from 88 individuals, and contact information from 39 people for follow-up telephone interviews. Open-ended responses from the intercepts were coded and categorized based on emergent themes and patterns.

## **Interviews**

### **Residents and Visitors**

Thirty-nine individuals from the intercept surveys agreed to be contacted for an in-depth telephone interview. All individuals were contacted three times either by phone or email to set up a time to speak with the interviewer. A total of nine people were interviewed by phone. Prior to completing the interview, individuals were sent consent forms via email and provided oral consent to 1) participate in the study and 2) be audio-recorded (See *Appendix B*). Interviews lasted between 15 and 40 minutes in length.

Interviewees were asked questions about:

- 1) The activities they participate in when visiting the preserve (if any)
- 2) The defining qualities of the preserve and its value
- 3) The Albany Pine Bush Preserve's goals and use of management practices
- 4) Areas for improvement
- 5) How individuals can support the Albany Pine Bush Preserve
- 6) What types of behaviors (if any) they undertake to support the preserve

The full list of the interview questions can be found in *Appendix C*.

### **Albany Pine Bush Preserve Staff**

Albany Pine Bush Preserve staff were interviewed to explore their perceptions of the public's use, knowledge, and engagement with the preserve. Staff were also asked questions about the defining qualities of the preserve, goals of the Albany Pine Bush Preserve, the management practices used to maintain the preserve, improvements, and behaviors residents and visitors can do to support the preserve (See *Appendix C*). In 2016, the Albany Pine Bush Preserve had 21 staff members including seasonal staff listed on their website. A recruitment letter was sent out to staff members via email and 11 staff members were interviewed in-person or by phone. Prior to conducting the interview, individuals were given a copy of the consent form acknowledging that they would be a part of the study and agreeing to audio-recording during the interviews (*Appendix B*). Interviews ranged between 20 minutes and one hour.

### **Interview Analysis**

All interviews were transcribed verbatim and coded for emergent themes. Staff responses to knowledge questions about the goals and management practices at the preserve were used in the development of preserve knowledge questions in a mail and web

survey that was distributed to a sample of individuals living within a 10-mile radius of the Albany Pine Bush Preserve. Staff and resident responses around the types of behaviors that could be done to support the Albany Pine Bush Preserve also informed the development of survey questions assessing individuals' intention to perform specific behaviors in support of the Albany Pine Bush Preserve.

## **Survey Methodology**

To assess the awareness, attitudes, support, and opposition of nearby residents and preserve visitors, we sent a mail survey to residents living within a 10-mile radius and a web survey to visitors of the Albany Pine Bush Preserve.

### **Mail survey of residents**

Using a database of homeowners from the 2015 New York GIS Clearinghouse Database, individuals were stratified by county (Albany, Schenectady, Saratoga, and Rensselaer). A random sample of each county was selected proportional to their population size within the 10-mile radius. A total of 1,200 residents were surveyed through a four-stage mailing of a paper survey. Individuals received a personally addressed mailing every two weeks from September 28, 2016 to November 3, 2016. The four mailings included: 1) the first questionnaire and cover letter, 2) a reminder or thank you post-card, 3) a second questionnaire and cover letter, and 4) a third and final reminder letter (See *Appendix D*). The survey asked questions about the following topics (*Appendix E*):

- Appreciation for natural areas
- Attitudes towards active management practices
- Attitudes towards open and forested landscapes
- Awareness about the Albany Pine Bush Preserve and threats to it
- Knowledge about the preserve, its ecosystem, and management practices
- Interactions with the Albany Pine Bush Preserve
- Intention to support the Albany Pine Bush Preserve
- Intention to oppose the use of management practices at the Albany Pine Bush Preserve
- Sociodemographic information

Individuals who had visited the preserve were asked more in-depth questions about what types of activities they engage in when they visit, what they value most about the preserve, and what the place means to them.

To augment the response rate, individuals living in municipalities adjacent to the Albany Pine Bush Preserve (i.e. Albany, Colonie, Guilderland, Schenectady, and Niskayuna) who had not responded to the survey by November 10, 2016 were identified for a drop-off mail back survey distribution. A team of two individuals hand-delivered a cover letter and another copy of the survey that could be mailed back at no cost to the participants (*Appendix D*). If no individual was home, a bag with both the survey and cover letter was left on their door. We then recorded whether 1) the survey was left on the door

(i.e. delivered), 2) we spoke to the resident (interaction), or 3) if the survey was undeliverable (i.e. lack of access due to security or wrong address). A total of 173 houses were visited from November 12-13, 2016. We had direct interactions with 79 residents during survey drop-off, 20 of whom refused the survey, and a total of 4 addresses were undeliverable. Ninety surveys were delivered without an interaction with the resident.

### **Web survey of preserve visitors**

In addition to a mail survey, we sought to oversample individuals who had visited the Albany Pine Bush Preserve. APBP staff provided us with a list of individuals (n=4,609) who had either checked into the Discovery Center or attended a program between 2013-2016. Visitors further than 10 miles from the Albany Pine Bush Preserve were removed from the sampling frame to create a list of individuals living within 10 miles of the preserve (n= 3,835). A random sample of visitors living within 10 miles (n = 1,200) were contacted via email through a Qualtrics Web Survey. The cover letters for the web survey sample had the same content as the mail survey cover letters except for instructions on how to complete the survey (*Appendix D*). Preserve visitor sample members were contacted four times between October 6, 2016 and November 16, 2016 with a request to complete the survey via a URL in the e-mail. Preserve visitors were administered the same survey as mail participants (except by web), but were also asked the municipality in which they currently live (*Appendix F*).

### **Non-response Surveys**

Two nonresponse telephone survey instruments were implemented to compare respondents to the original questionnaire with non-respondents to detect any response bias that may be present. Short (5 minute) non-response telephone surveys were conducted with non-respondents to both the mail (n=50) and web (n= 50) surveys from December 5-13, 2016. The non-respondent survey (*Appendix G*) included sociodemographic, visit, and behavior questions from the original survey. Respondents were compared across sociodemographic, visitor, and behavioral intention variables. Means and standard deviations were analyzed using t-tests for continuous variables and chi-squared tests were performed on categorical variables. No significant differences were found between the respondents and non-respondents for either the mail or web survey (*Appendix G*).

### **Measures**

Summative scales were constructed with survey items using principal component analysis. Because the scales used were developed from previously tested scales, items were grouped based upon theoretical merit to reduce the number of items examined in the principal component analysis. Theory-based item groups with 5 or more items were analyzed using exploratory principal component analysis to assess whether they measured multiple or single constructs. Scales were developed based upon their factor loading and reliability values. Full scales can be found in the tables in *Appendix H*.

### Knowledge about the Albany Pine Bush Preserve

A summative knowledge scale ( $\alpha = 0.68$ ) was constructed of 17 items. Nine items were true or false questions regarding facts about the Albany Pine Bush Preserve. These questions included items about the ecosystem, geographic range of the preserve, its legal protection, and national recognition. Four items asked individuals to identify the goals of the Albany Pine Bush Preserve. The final four items of the scale reflected participants' ability to identify four management practices used to maintain the ecological health of the Albany Pine Bush Preserve (*Appendix H*).

### Attitudes towards Management Practices

Participants' attitudes towards management practices were measured using a four-item scale ( $\alpha = 0.79$ ) that investigated attitudes about the use of four management practices in natural areas: the removal of non-native plants and trees, cutting trees to create openings in the forest, mowing of bushes and small trees, and controlled burns (i.e. low-intensity fire). Responses were measured with a 5-point Likert scale from "Very Negative" to "Very Positive".

### Intention to Oppose Albany Pine Bush Preserve's Use of Management Practices

To measure individuals' intention to oppose the use of active management practices at the preserve, we asked individuals, "In the next 12 months, how likely are you to do the following activities". Individuals were asked to report their intention to oppose four active management practices used by the Albany Pine Bush Preserve (removal of non-native plants and trees, cutting trees to create openings in the forest, mowing of bushes and small trees, and controlled burns) using a 5-point Likert scale from "Extremely Unlikely" to "Extremely Likely". The scale was reliable with a Cronbach Alpha of 0.88.

### Intention to Support the Albany Pine Bush Preserve

We created a scale of support behaviors based on items used in Halpenny (2010) and from semi-structured interviews with staff, residents, and visitors. Using a 5-point Likert scale, respondents were asked how much they agreed or disagreed with the statement, "In the next 12 months, how likely are you to do the following activities". Respondents then reported their intended likelihood (from "Extremely Unlikely" to "Extremely Likely") to perform six different behaviors. The six-item scale was comprised of three political behaviors (write letters of support, donate money, volunteer) and three civic behaviors (visit the preserve, attend preserve program, and talk positively about the preserve). The behavioral intention scale was reliable ( $\alpha = 0.87$ ).

### Visitor Type

Respondents were categorized into four visitor types based on their use of the Albany Pine Bush Preserve. Individuals who had never visited the APBP were labeled "Non-visitor". To differentiate between different visitor types, individuals were separated based upon their performance of independent or APBP-led activities. Visitors who used the preserve independently and did not attend APBP programming were labeled, "Visitor: Independent Activities Only". Those who only came to the preserve to attend

APBP programming were categorized as, “Visitor: APBP Programming Only”. Finally, visitors who engaged in both independent activities and APBP programming were labeled, “Visitor: Independent and APBP Activities”. Due to the low response of individuals who only attended APBP programming (n=3), respondents from the “Visitor: APBP Programming Only” were excluded from the analysis.

### Distance

An individual’s distance from the preserve was categorized based upon the municipality in which they reside (city, town, hamlet, or village). Using QGIS, we created a 5-mile and 10-mile buffer around the Albany Pine Bush Preserve. With U.S. Census data, we identified the municipalities that were < 5 miles, between 5-10 miles, or > 10 miles of the preserve. Based upon their reported municipality of residence, individuals were coded “0” if they lived within 5 miles of the preserve, “1” if they lived between 5 and 10 miles, and excluded from the analysis if they lived more than 10 miles of the preserve.

### Gender

Participants were asked “What is your gender?” and given the options “Male”, “Female”, and “Other”. Individuals were coded “0” for male, “1” for female, and “2” for other. Due to the low response of “Other” (n=1), respondents indicating “Other” were excluded from the analysis.

### Education

We measured participants’ level of education by asking them to select the highest level of education they completed out of a six-point scale. Participants were given the following options: “Less than high school diploma” (1), “High school diploma” (2), “Some college” (3), “2-year college degree” (4), “4-year college degree” (5), and “Graduate/ Professional degree” (6).

### Age

Participants reported the year in which they were born. To transform the variable so that it reflected an increase in age, we subtracted participants’ birthyear from 2016 (the year the study was conducted). Respondents who were under the age of 18 were removed from the sample.

## **Survey Analysis**

The survey data was used to assess the knowledge, attitudes, and support of individuals living within 10 miles of the preserve. We explored how individuals’ knowledge, attitudes, and behavioral intention differed across visitor types, distance, education level, and gender. We used t-tests to investigate differences between variables with two levels (i.e. gender and participants’ distance from the preserve) and variables with more than two levels (i.e. visitor types and education level) were analyzed using a one-way ANOVA with Tukey post-hoc analysis.

## **Exhibit Analysis**

To better understand visitor interactions and engagement with exhibitions, a team of five graduate student researchers supervised by Prof. Buckler performed a formative evaluation of guests engaging with exhibitions at the Albany Pine Bush Discovery Center (APBDC). The focus of this formative evaluation was to track guests throughout the galleries of the APBDC and record observations of their behaviors and, when appropriate, conversations, using specifically designed museum exhibit observation and tracking forms. The Discovery Center was divided into five exhibit sections for the purposes of the evaluation. Section 1 is the initial entryway into the Discovery Center with an introduction to the Pine Bush, Section 2 focuses on the Pine Bush's ecosystem and geologic history, Section 3 is about controlled burns and other management practices used at the preserve, Section 4 reflects the human history of the preserve, and finally, Section 5 is for early learners. Using exhibit maps from the Albany Pine Bush Preserve, we created observation sheets for recording visitor activity at each exhibit section (*Appendix I*). Prior to the observations, we established a protocol and coding scheme for the data collection.

Observations were made of both adult and children visitors, from 10:00AM to 3:00PM on September 24, 2017. Evaluators randomly picked one individual visitor (or one from each group) entering each exhibit section to time, track and observe. Observations were made, as best as possible, without the visitors' knowledge. Individuals' behaviors within each section (i.e. looking at the exhibit, reading text, talking to the group, and manipulating the exhibit) were recorded. Gender and age range data were estimated by the evaluators. Observation evaluation was done for each exhibit section of the APBDC. Some visitors did not go to all exhibits at the APBDC, thus there is variation in the number of subjects in each exhibit section.

## **RESULTS**

### **Intercept Surveys**

A total of 88 intercept surveys were completed with individuals living near the Capital Region in New York State. Sixty-percent of intercept survey respondents lived less than 5 miles from the preserve, 17% lived between 5 and 10 miles from the preserve and about 23% of participants lived more than 10 miles away. The sample included individuals who resided in the area for as short as 1 month to as long as 45 years. The average respondent lived in the area for about 13 years.

Of the 88 individuals surveyed, 71 (81%) had visited the Albany Pine Bush Preserve. Of those who had visited, 22 (31%) visited the preserve for the first time in the last 12 months. Most of the surveyed individuals who had visited the preserve stated that they use the preserve for hiking, education programming at the Discovery Center, or various forms of recreation (See Table 1).

**Table 1.** Intercept respondents' use of the Albany Pine Bush Preserve.

*What types of activities do you do when at the Albany Pine Bush Preserve? (n=71)*

Activity	Number of Respondents
Hike / Walk	47
Discovery Center / Program	13
Jogging/Running	11
Spend Time with Family	5
Bike	4
Learn More	3
Dog-walking	3
Be in Nature	3
Look at Butterflies	2

Individuals who had not visited the preserve were asked if they had at least heard of the Albany Pine Bush Preserve. We found that 10 out of 17 individuals (59%) had heard of the Albany Pine Bush Preserve. When asked what it would take for these individuals to use the preserve, most individuals stated that they would want to know what it was and more information about the preserve (i.e. available parking, access to kid-friendly trails etc.). Other non-visitors indicated that they would visit if they lived closer to the preserve (See Table 2).

**Table 2.** Incentives for non-visitor use of the Albany Pine Bush Preserve.

*What would it take for you to use the Albany Pine Bush Preserve? (n =17)*

Reason	Number of Respondents
Know What It Is / Have More Information	9
Live Closer	4
Friends	1
Sports	1
Do Something Other Than Hike	1
Time	1

All intercept respondents reported what came to mind when they heard the name Albany Pine Bush Preserve. There were a wide range of responses (See *Appendix A*). The ten most common responses are shown in Table 3. Individuals mostly associated the Albany Pine Bush Preserve with trails, hiking, and butterflies. This was followed by general characteristics such as the outdoors, its proximity, animals and wildlife, and its existence as a park or preserve. Other

common responses included recognition of the preserve as a relaxing place for education and spending time with children.

**Table 3.** Intercept respondents’ associations with the Albany Pine Bush Preserve.

*What comes to mind when you hear “Albany Pine Bush Preserve”? (n=88)*

Words Associated with APBP	Number of Respondents
Trails / Hiking	22
Butterflies	11
Outdoors /Nature	7
Close/Backyard	6
Pine Barrens / Pine Trees	6
Preserve / Park	6
Education	5
Peaceful / Relaxing	4
Children	4
Animals / Wildlife	4

## Resident and Visitor Interviews

Of the thirty-nine individuals who provided their contact information from intercept interviews, nine residents and preserve users were reachable and willing to participate in an in-depth interview. The interviewees had a range of experiences and interactions with the preserve. Eight of the nine interviewees had visited the preserve. Almost all the visitors (n=7) interviewed used the preserve for hiking. Several other visitors used the preserve for recreation including snowshoeing (n=2), dog walking (n=1), and running (n=1). However, some interviewees interacted with the preserve in indirect ways such as those who shared property with or neighbored the preserve (n=2) and one individual who frequently drove past the preserve, but had never visited.

### Positive and Negative Aspects of the Albany Pine Bush Preserve in Comparison to Other Local Green Spaces

#### Positive Aspects

Participants discussed their interactions with the Albany Pine Bush Preserve and how it differed from other green spaces in the area. One of the most common responses from interviewees was that the Albany Pine Bush Preserve was unique from other green spaces in the area. Interviewees discussed the sand, terrain, blue butterflies, and pitch pine landscape as elements that specifically distinguished the Albany Pine Bush from other places. Some explicitly stated that they valued and enjoyed the unique feel of the Albany Pine Bush, “...it’s kind of fun to just enjoy a different kind of environment than I usually see”. That was not always the case for several of the participants. Some individuals did not enjoy elements of the preserve at first, but then discussed how those elements grew to



become some of their favorite parts of the preserve over time. For example, a frequent hiker described their changing feelings about the sandy soil of the Albany Pine Bush Preserve, “I love...although I hated it at first, the sand”, they then later discussed how they appreciated the variety of the landscape and soil. Another participant, a runner, spoke about their value of the wildlife at the preserve, “I very much appreciate it, but I didn’t actually seek it out for having trees and wildlife and such... I would say most enjoyable even though it wasn’t the reason that I went there to begin with”.

#### What Residents and Visitors Value about the APBP

In addition to the landscape and uniqueness of the preserve, interviewees also valued the number of available hiking trails and enjoyed that the trails were relatively easy compared to other local natural areas. An older hiker stated, “There aren’t many places within the area of Albany and surrounding communities...where you can go out and hike for 5 miles anymore”. In addition, most of the interviewees mentioned that the preserve was very well-maintained. This included the cleanliness of the trails, maintenance of the trails, and trail markings. A frequent runner at the preserve described why they enjoyed the APBP trails more than others in the area,

I might be a little less satisfied out on some of my old trails now that I’ve gotten used to the Pine Bush...there’s not a lot of overgrowth into the trail, but as soon as you’re off the trail it’s wildlife everywhere. I like that combination that they give me a little space to walk that they take good care of and beyond that they let things go or manage it well.

Other aspects of the preserve that differentiated it from other local green spaces were its location, lack of an entry fee, and programming. In comparison to other local green spaces, frequent visitors of the preserve appreciated that the preserve was free of charge. A regular dog-walker stated, “I don’t have to pay money to get into it like the state parks”. In addition to its cost, participants remarked how close it was to the urban environment. A hiker and grandparent elaborated: “I do value the fact that right in the middle of the Capital District is this place that you can go and you can see frogs and grasshoppers and butterflies and moths”. Other interviewees who were also parents or grandparents valued the kids programming that was available at the Discovery Center and local schools.

#### Negative Aspects

While there were many ways in which the Albany Pine Bush Preserve was deemed more positive than other local preserves, interviewees also discussed negative aspects of the preserve in relation to other local green spaces. These included the sound of the highway, preferences for other landscapes, and negative perceptions about the preserve.

The most common negative for the hikers interviewed, especially those who enjoyed solitude, was the noise of the interstate.

What I find to be the biggest drawback is that it doesn't feel that secluded because it has the interstate there so for a good portion of the yellow trail you can still hear that...that's something that I'd like to get away from.

Other hikers also reflected on the noise as a disruption to their visits. In addition to the noise, some interviewees also preferred other landscapes. A hiker stated that they like landscapes with water (i.e. streams, lakes, ponds) near the trails, "We go to state parks for that here. That's part of the hiking experience that we like". This water element is not something that is characteristic of the preserve; however, it seemed to also deter the non-visitor from hiking at the Albany Pine Bush Preserve, "...the type of places that I would want to hike in would be places that have waterfalls or great views and I don't think that the Pine Bush has that".

Finally, several residents and visitors had negative perceptions about the Albany Pine Bush Preserve that influenced their willingness to visit the preserve. One hiker discussed how online reviews about a high concentration of ticks at the Albany Pine Bush Preserve made them hesitant to visit,

One thing that actually detract[ed] from it earlier...are the reviews online that talk about massive tick infestation, that people talk about how they get covered in ticks every time. We have not seen any ticks on us, but that was something that put us off from going there at first.

In addition to ticks, two individuals talked about how they thought the preserve would be boring relative to the other green spaces in the area and how that made them hesitant to visit. The non-visitor believed that their teenage children would not enjoy the space: "I don't think there's a lot of things to see that would keep [my children's attention]. I think they would be bored if I brought them to the Pine Bush". Another hiker indicated that prior to visiting, they felt similarly, but that changed once they hiked one of the trails:

...I always thought it's just a bunch of pine trees. It's all flat. It's not going to be all that interesting and I never got around going there until recently...I learned that it's not all that boring...I enjoyed being surprised that it was better than what I anticipated.

Therefore, it is possible that the perception could be changed by visiting the preserve and experiencing the landscape.

Finally, two participants discussed their perceptions of the Discovery Center. Both the non-visitor and the runner believed that the Discovery Center was for younger kids. While the non-visitor was pessimistic about the ability of the Discovery Center to cater to a wider audience, the runner was more optimistic and believed that even adults could learn things and enjoy the Discovery Center: "I think they're more focused on kids, but I imagine there's plenty to learn as well".

## **Awareness of the Albany Pine Bush Preserve's Goals**

Individuals were also asked about their awareness of the goals and management practices that were used by the Albany Pine Bush Preserve. For reference the Albany Pine Bush goals are to manage and protect the ecosystem and to provide recreational and educational opportunities to the public. When asked to discuss the goals of the Albany Pine Bush Preserve, participants gave at least one of three answers 1) to maintain or preserve the unique environment or ecosystem, 2) public education and awareness, and 3) provide a space for recreation and public enjoyment. Almost all the individuals interviewed stated that protecting the environment or ecosystem was one of the Albany Pine Bush Preserves goals.

In addition, just under half of the interviewees also identified that the preserve was interested in public education and awareness. A runner reflected upon the preserve and its outreach efforts, "If it were just a flat out a preserve everything, they just wouldn't invite people out there at all. But they do have these trails and programs, so obviously there's sort of integration going on". While the runner thought that the education component was a secondary goal, a hiker believed that the public education goal was a higher priority than the preservation, "I would say on that spectrum [between preservation and public education], it's probably closer to public education than a preservation effort". Thus, illustrating that while residents identified both protection and education as goals of the APBP, individuals had different ideas of which goal was more important to the preserve.

Finally, some interviewees believed that the preserve was for preservation, recreation, and public enjoyment. A neighboring resident discussed how it "...is like Albany's Central Park". They related it to the iconic green space in New York City that was used by walkers, runners, and bikers for enjoyment. Other users simply reflected on their ability to use it for recreation (i.e. running, hiking, biking, etc.).

## **Awareness of Active Management Practices at the Albany Pine Bush Preserve**

To explore residential awareness of and attitudes towards the active management practices used at the Albany Pine Bush Preserve, interviewees were asked to discuss management practices that were used to maintain the health of the preserve. Six different management practices were identified by interviewees (See Table 4).

All the individuals, including the non-visitor, were aware of prescribed burns used at the Albany Pine Bush Preserve. Individuals had either heard from others that the burns occurred or recognized the signs and smells of a recent burn. A frequent hiker stated, "I don't know how often or when they do burns to kill off the underbrush. I can see evidence of that happening because I see burn marks up on the pine trees". Interviewees living closer to the preserve were informed about the controlled burns through postcards sent by the Albany Pine Bush Preserve Commission.

**Table 4.** Albany Pine Bush Preserve management practices identified by interviewees (n=9).

Management Practice	Number of Interviewees
Controlled Burn	9
Close Trails / Open New Trails	4
Tree Cutting	2
Invasive Species Removal	2
Plant / Species Mapping	2
Trail Maintenance	1

In addition to being aware of prescribed burns, all individuals accepted the APBP's use of the prescribed burns. However, several individuals still held some concerns about the human safety and health related to the use of fire. To some the smell and the smoke were worrisome. A frequent runner at the Albany Pine Bush said, "I've had an occasional day where I had wished I came a week later, but I would say that [after a week] it no longer bothers me... the appearance is different, but the air seems completely normal again". A neighbor of the preserve stated that they get notices from the Preserve about the burns, "if it's helpful to the overall health of the space, then yeah that's good they're doing it...if there was a lot more smoke I think it would be [a little more problematic]".

For another resident safety was paramount, "I mean the last thing I want is to have a wildfire in my backyard...Gotta do what they have to do to keep it safe...I don't care why they need to do it as long as it's safe". For this resident, why controlled burns were being conducted and how they influenced the preserve were less important as long as the prescribed fires did not damage their property or harm them. Finally, other users were not fazed by the burns. A dog-walker said, "I'm totally fine with it. It doesn't scare me". Overall individuals were accepting of the use of prescribed fire within the preserve if it was safe and they were not exposed to a lot of smoke.

While controlled burns were one of the most identified management practices, interviewees were also able to identify other management practices such as the removal of invasive species, tree cutting, trail closure, trail maintenance and species mapping. Most of the participants knowledge about the management practices were from trail closures and other first-hand experiences. For example, a hiker and program attendee noticed when a trail was closed for species research, "They have sections where they put netting up where you have to go around it or they close that section off because they are tracking migration...". Other hikers noticed changes in the landscape, "the large open spaces in the forest, I'm not sure if that's natural, if the soil can't support big trees or if they actually thinned it out, but I did see a couple of old trees that had probably been left there on purpose".

Other interviewees spoke in detail about tree removal and understood its purpose,

I know for instance the locust trees they say they have to dig out the roots and everything because they just keep springing back up...they're an

especially tough plant to control and I see some evidence of that and I'm appreciative of all the hard work that goes into that.

While not all individuals were as knowledgeable about why the practices were performed, overall interviewees were aware of a variety of management practices used by the preserve. In addition to being aware, these respondents also were accepting of the management practices if they were done safely.

### **Albany Pine Bush Preserve Improvements and Opportunities**

Respondents also mentioned opportunities for improvement. While almost all the interviewees believed that the preserve did a good job maintaining the native ecosystem, many believed that the preserve could improve upon their outreach and marketing. Interviewees mentioned three main areas of improvement: 1) preserve awareness, 2) management practices and trail closures, and 3) community involvement.

#### Increase Awareness of the Preserve

A common anecdote that individuals shared was that they did not know that the preserve existed until they accidentally stumbled upon it. Two individuals noted that it took years of being a resident to discover the Albany Pine Bush Preserve: "The only thing that I guess that doesn't impress me is that there is a large center and I have not heard about it one way or another living here for three years". Another individual who lived close enough to receive notices about controlled burns discussed their experience, "I'm living here in Albany, 15 years now and this is the first year I really went over there...and I was surprised by what I found". They elaborated about who is aware of the preserve:

I'd say people who have lived here their whole lives seem to be pretty aware of it. It's just folks like myself and perhaps you who come from another area...you know have to discover it.

In particular, a parent talked about the struggle of trying to find something to do with their children, "...at every stage of their life I would have liked to have gone to the Pine Bush if I knew there was enough interesting stuff to entertain, so I don't think they've done a good job with that". Another parent stated, "we've always been on a lookout for things to do in the area and nature preserves...I think my son did something in school, he's a middle schooler, on Lake Albany and that's how we started looking into it".

Other individuals discussed how stumbling on the preserve can be difficult due to the location of the trailheads, "It's hard to find some of those trails...I tend to find a lot of trails by getting lost and then seeing the signs". One of the older hikers noted that "unless you go to the visitor center and figure out where all of these places are, you don't really know". Thus, even if individuals are aware that the preserve exists, finding some of the trails may be difficult. One hiker discussed how the trails felt hidden, "I was over at the Great Dune today...that's one of the nicer ones...the best kept secret".

Finally, one interviewee who was a principal for a local school also suggested how the Albany Pine Bush Preserve could improve their outreach to school districts, particularly inner-city schools. The interviewee discussed that many of the school districts hear about the preserve by word of mouth. She suggested the following, “if there’s any funding source for them to actually go into some of these school districts and actually do some ecology and environmental type work...[in] the inner-city...that would be pretty cool”. Thus, suggesting that perhaps more work could be done raising awareness in the school districts especially in larger cities such as Schenectady and Albany.

#### Improved Outreach about Management Practices and Trail Closures

A second area that could be improved upon with outreach was information about management practices and trail closures. Several of the interviewed hikers mentioned a lack of certainty about the types of management practices used and why some trails were closed. One of the older hikers discussed their experience learning about tree cutting in the preserve:

I saw them doing clearing by the Washington Ave. Extension. I got nervous because I love that area. I was just glad that I ran into them and they were able to tell me that they were doing a fire break...so if they’re cutting down stuff maybe if they could just put a sign saying we’re doing this so people understand you know why they’re doing it.

The interviewee mentioned that they were lucky to encounter an APBP staff member that could explain the active management to them and why it was being done; however, that may not always be the case. Another hiker spoke about going with their family to the same trailhead:

...the trails at the end of Washington Ave. Extension [were] closed for kind of a long time...I think there were signs, maybe it was just a little ambiguous when they were going to reopen. I remember we drove down there a couple times thinking is it open yet...but you don’t know.

They mentioned that they also were not sure why the trail was closed, “there could have been a good reason for that that I just wasn’t aware of”. Thus, an opportunity for the Albany Pine Bush could be introducing signs where management work is being done explaining the work or utilizing other tools to share closures with the public and when the areas is expected to reopen.

#### Promoting Community Involvement and Support

The final outreach and engagement opportunity that participants discussed was promoting community involvement and support. Interviewees were asked to identify ways in which residents and visitors could support the Albany Pine Bush Preserve. There were several suggestions for what could be done (Table 5), but the most common responses were

to visit the preserve, donate money, and get involved in activism and advocate for the preserve. However, at least a third of the individuals interviewed were not aware of whether the preserve needed donations or funds. One runner did not consider donating to the APBP until they thought about what it costs for them to use other local green spaces:

What actually got me to do it [donating to Friends of the Pine Bush] was that I was going to some other places that I was paying to go on the trails and then I was like wait a minute how am I paying for these other ones, but getting this one for free? Kinda made me think a little more.

**Table 5.** Albany Pine Bush Preserve support behaviors as identified by residents (n=9).

Support Behavior	Number of Interviewees
Visit the Preserve	6
Donate Money	5
Activism/ Advocacy	5
Talk about it/Spread the Word about the APBP	3
Treat Properly When Visiting	3
Learn/ Be Aware of APBP	2
Volunteer	2

In addition to directly donating money to the Friends of the Pine Bush in support of the Albany Pine Bush Preserve, some interviewees suggested other events to raise money and community awareness about the preserve. A non-visitor to the preserve discussed large events, “I’ve never seen anything like a fundraiser for it or like a gala. I’ve never seen anything to like promote the Albany Pine Bush...” Another hiker supported this sentiment and discussed having more events like the Lupine Fest, an annual community celebration of the unique wildlife and habitat at the Albany Pine Bush with food, music, games, and activities, “If they had some types of festivals, they have the lupine thing and maybe something in the winter it could raise money, if they need money. I don’t even know if they need money”. Interview responses reinforced that individuals are unsure about whether the preserve needs donations and how they can contribute. Fundraising events could both bring in community members and raise money for the preserve as well. Several visitors noted that they “wouldn’t mind paying to go see something that is interesting”.

Other interviewees discussed ways in which third parties could help in raising awareness and donations for the preserve. The ideas included fundraising at local supermarkets, or businesses. A hiker talked about contributing to the Preserve through their grocery co-op:

I noticed where I try to do my grocery shopping, if you bring your own bag, they give you a bag credit and they have tokens that’re worth 10 cents each and you can put those tokens in the charity or organization of your choice. This time I noticed they had it for the

Pine Bush...if everyone does it they can make a lot of money that way.

The last suggestion around community involvement was around advocacy and activism. Four of the residents' discussion of activism and advocacy was about protecting the preserve from development. As one hiker stated, "If we can encourage people to fight to not let developers, you know, buy the land and make another office park, then that would be great". While many of the interviewees discussed political activism as a potential support behavior for the Albany Pine Bush, another hiker indicated that they did not know how to get involved in that or what to do:

...we can ensure people interact with their towns or say no we're not going to sell this to a developer, you know what the problem is...I say I'm a hypocrite [for not actively participating in activism], but I have no idea how to get involved in that...if the center, if there were some way that they could show people how to advocate for natural areas.

The interviewee was not descriptive as to what this would entail, but it could involve training individuals how to effectively advocate and organize or specific requests to write to legislators. Nevertheless, it highlights the importance of discussing the support the preserve needs and providing opportunities to the public for involvement and contribution.

### **Albany Pine Bush Staff Interviews**

In addition to resident and visitor interviews, we also interviewed 12 staff members at the Albany Pine Bush Preserve to get an understanding of the goals of the preserve, the management practices used, and current outreach and education efforts. We were also interested in exploring APBP staff perceptions of public awareness, use, value, and reactions to the preserve. Finally, we asked staff members to identify opportunities for improvement and behaviors the public can do to support the preserve. The 12 staff members interviewed ranged in specialty and rank within the organization from those who specialized in active management of the preserve, education, outreach, and public engagement.

### **Public Interactions with the Albany Pine Bush Preserve**

Staff members initially discussed several ways in which the public interacted with the Albany Pine Bush Preserve (Table 6). The most commonly identified activity was recreation on the trails. These included a wide variety of activities including exercise like running and biking, sports activities such as skiing and snowshoeing, and wildlife activities including birding, nature photography, and butterfly watching. Staff members discussed hiking trails as a very common use followed by preserve-led programs and educational activities at the Discovery Center. Dog walking, socialization (i.e. meeting with friends and family), and meditation were also mentioned, but less frequently than recreation and learning. Finally, staff interviewees identified indirect interactions with the preserve, such as driving past the preserve and individuals whose backyards bordered the preserve.



**Table 6.** Staff members’ perceptions of how the public uses the Albany Pine Bush Preserve (n=12).

Preserve Use	Number of Interviewees
Recreate (i.e. run, bike, birding)	10
Hike Trails	9
Attend Programs	8
Learn at the Discovery Center	8
Dog Walk	3
Drive by the Preserve	3
Socialize	2
Reflect/Meditate	1
Neighbor of the Preserve	1

While visitors may come for a variety of different reasons, four of the staff members discussed distinct differences in visitor types. One environmental educator noted that individuals have primary interests when coming to the preserve and don’t often diverge from those interests:

People that are recreating in the preserve, they may come in and visit the Discovery Center, but they are really focused on recreating in the preserve. And the individuals coming into the Discovery Center seem more focused on that. While they may venture out onto a trail, their main interest is coming to the Discovery Center.

This suggests that there are two main types of visitors that are distinct from one another, recreationists and Discovery Center visitors. Another staff member affirmed this distinction, “Most of the people that come to the preserve, if we’re including the Discovery Center, don’t go out in the preserve itself”. While these individuals may visit the preserve for educational programs or exhibits at the Discovery Center, they seem to have a lack of interest in recreating or using the outdoor trails. In contrast, staff members discussed a disinterest of recreationists to learn more about the preserve and research that is being doing there, “...a lot of people just said you know we go there and do what we do and I don’t care about your scientific research, I just go on my hike”. This highlights a potential difficulty of outreach and education of recreationists visiting the preserve.

#### **Staff Perceptions of what the Public Values and Dislikes about the Preserve**

In addition to activities, staff members were asked to identify elements of the Albany Pine Bush Preserve that they think the public values or finds most enjoyable as well to share with us complaints or things that they perceive visitors to dislike. There was a large range of answers from staff interviewees; however, the most commonly valued elements identified were 1) the unique ecosystem that looks different from anything else in the area (i.e. sand dunes, hills, animals), 2) its proximity to the city of Albany and many residential areas, 3) it is green space that is protected from development in an urban environment, and

4) the recreational opportunities at the preserve. Staff members also mentioned the Karner Blue Butterfly, the Discovery Center, the affordability of programming and trail use, and the seclusion the preserve offers (For a full list See Table 7).

**Table 7.** Staff members’ perceptions of what the public values about the Preserve (n=12).

Value	Number of Interviewees
Unique Ecosystem (i.e. sand dunes)	10
Close/Proximity to Residents	7
Recreational Opportunities	7
Protected Urban Green Space	7
Karner Blue Butterfly	5
Discovery Center/Education	5
Affordable/Low-cost	3
Social Interactions	2
Relaxation/Escape	2

Not only did staff members talk about positive elements that they thought people valued, but, they also discussed complaints and negative comments they have heard from visitors and members of the public about the preserve. One of the most common complaints relayed by staff members was a desire for more or different trails through the preserve. One staff interviewee reflected, “People always want more trails. Even those people who get the whole globally rare thing, yeah, but we still want more trails”. In particular, five staff members mentioned mountain bikers’ request for single track and extensive trails, “...a lot of mountain bikers that want to have like access to wherever they can go and they get frustrated when we say you can’t bike here, or put up fences, or cut down trees to try to keep them out of certain areas”. However, there has also been general discontent from users about temporary closures of trails for management within the preserve, “that’s common for recreational users, the concern that they used to be able to do something and now they can’t...”.

Aside from more trails and fewer closures, staff also indicated that the public desires for the preserve to be more like a park. They have requested more signage and benches, picnic areas, snowshoe rentals, and organized activities like 5k runs, however staff noted “...those kinds of things are more appropriate in areas that have less sensitive ecosystems like Thatcher Park or Grafton Lakes”. Other concerns or complaints about the Albany Pine Bush Preserve have revolved around the lack of water elements (i.e. streams, ponds, lakes, waterfalls) within the preserve, the abundance of ticks, and concern about the use of active management practices (i.e. prescribed burns, tree removal, and mowing).

### **Preserve Goals and Public Awareness of Goals**

All twelve of the staff interviewees discussed two main goals of the Albany Pine Bush Preserve. As an executive staff member stated, “[1] Manage, protect, and promote the pitch pines scrub oak barrens and [2] provide the public with recreational and educational opportunities”. A few staff members also identified research as an important sub-goal.

When asked about how well the public was aware of the preserve's goals, many staff members believed that the public was unaware of the preserve goals particularly the first goal to manage, protect, and promote a rare ecosystem. While two staff members believed that individuals are aware that the preserve is actively managed, many believe that they don't understand why it is being done, "People do know that we're managing...I don't know that people fully understand why we're doing it". However, most of the staff members believe that the public understands the second goal of providing a green space for public recreation and education. One staff member stated, "some people might view this as like a park". Another educator added to this idea "if they're users, they're already coming here, so they probably know about some of the recreation and maybe some of the education opportunities". Overall, it seemed that staff members believed if individuals were visitors of the preserve, they had some understanding of either the fact that it is managed and protected or that it was available for recreational and educational activities.

However, several staff members discussed a difference in the weight of each of those goals. "Protecting and managing the preserve is a priority...but not at the exclusion of [education and recreational opportunities]". Seven of the staff interviewed discussed the difficulty of this balance, "I want people to come and explore and learn about the preserve, but there is a limit to how many people we want". Illustrating that there are potential difficulties with outreach and the preserve's capacity for visitors. Another educator discussed the difficulties of limited interactions for visitors, especially children, "It's this really sensitive place that needs protection and management and has a really hands-off feel to it like 'Oh no don't touch that butterfly. Oh don't... this is protected". However, a conservation specialist on staff commented on how it isn't currently a problem, but it is something to think about in the future:

I don't feel like we're overwhelmed with hikers and stuff that they're trampling habitat that they're really becoming an impediment to our conservation work...but we're always trying to grow our base of interest in people so, could it become a problem? Maybe, but I don't think we're there yet.

### **Active Management Practices**

To manage, protect, and promote the rare ecosystem at the Albany Pine Bush Preserve, staff use active management practices to promote the health of the ecosystem. According to staff members, the preserve uses prescribed burns and mechanical treatments including the cutting and mowing of trees, and native tree thinning. In addition, the staff remove invasive vegetation with the assistance of herbicides. Staff will close some of the recreational trails prior to the use of any of these active management practices or to allow sensitive areas to recover. Furthermore, staff members maintain the quality of the trails and perform trail maintenance as needed.

### Staff Perceptions of Public Awareness of Active Management Practice

When asked to discuss the public's level of awareness of the management practices, most of the staff interviewees believed that individuals who lived close or had been in the area for a while were probably aware, but overall the public was not aware. One educator said, "I think people who live close to preserve land probably know, or maybe think they know more than other people because they see it". The visibility of the management practices was an important factor for most of the staff interviewees when discussing the public's awareness of each management practice. Especially since the preserve sits on an urban interface, one educator spoke about how that influences local awareness, "...we got neighbors all over the place when we start cutting down trees, people become very aware". Not only are residents able to see tree cutting, but another staff member discussed the visibility of prescribed burns, herbicide, and mowing, "fewer people are aware that we actually use herbicides in the preserve, they see the mowing, they see the prescribed burns". Overall, staff interviewees felt that individuals were the least aware of the use of herbicides because it is not as visible, "I would say the average member of the public does not know that we use herbicide because it's not visible unless you see a contractor out there with sprayers...".

Collectively staff members indicated that individuals would be the most knowledgeable about the use of fire or prescribed burns because of its visibility and the preserve's history of broad outreach efforts (pre- and post- burn season mailers, annual and daily calls, media reports, etc.), "I think they're very aware of fire...because it's visible...and also because they're notified". Staff members believed that those efforts may increase awareness of residents especially those living immediately next to preserve land. Less extensive notifications are provided to adjacent preserve neighbors for the mechanical treatments (i.e. cutting, mowing, or tree thinning).

### Public Reaction to Active Management Practices

Staff members shared public reactions to the preserve's use of management practices. Staff members mostly discussed negative reactions, calls, and interactions with the public regarding many of the management practices, but weren't sure how representative those sentiments were with the public, "...is this representing 1 out of 10 people? Is this 5 out of 10 people? ...it's really hard, it's hard to say". Hence, many staff members were interested in seeing the results of our survey to local residents.

With regards to the specific management practices, prescribed fire received the fewest public complaints, according to an executive staff member:

When we do a fire, you'd think like people would be freaked out and scared, there's fire on the ground, there's smoke in the air, but we get very, very few calls. But we receive a significant number of calls in relationship to people asking about mechanical treatments.

Although there are more calls about mechanical treatments such as mowing and tree cutting, individuals still have some concerns with the use of fire. According to an outreach specialist, “people complain, I guess, if they think if it’s too windy on that day to burn... for concern of [fire managers] losing the fire...they may smell the smoke, but they might not be getting...the actual smoke plume”. Four other staff members also mentioned hearing concerns about smoke and the fire getting out of control from the public. However, these complaints are less frequent than the complaints and calls about tree removal and mowing.

Almost all staff members acknowledged that mechanical treatments such as mowing and tree cutting are not aesthetically pleasing to look at. Some of the descriptions included “ugly”, “messy”, “it looks terrible”, “everything looks dead”, and “it’s very destructive looking”. However, several staff members talked about two public misperceptions about cutting and mowing. The first is a general misunderstanding between preservation and conservation. Some of individuals’ negative reactions come from individuals’ belief that the land and ecosystem will be left untouched, “They don’t understand why we’re cutting trees or mowing in a preserve...they think it’s a protected place where you don’t do anything” or “if it’s off the trail, why don’t you just let it grow and be natural”. As a result, individuals complain or have negative reactions to the use of highly visible active management practices at the preserve.

The second misconception discussed by five interviewees was a belief that tree removal and mowing was an indicator of residential or commercial development on the land. An educator talked about a managed site near a major street and trailhead, “We started thinning trees on Washington Ave. Extension, people were calling and they were actually upset ‘cause they thought that development was going in there, but it wasn’t development, it was us”. Another educator commented on management across from the Discovery Center, “They thought we were starting a construction project for a building and we had these big signs out like ‘maintaining for a healthier preserve’ and these various signs”. Despite efforts to identify managed areas, individuals may not pay attention to the signs. However, a member of the executive team talked about how it is somewhat of a positive reaction from the public, “Most of the time when people think that development is going in, they lean on the side of being supportive of the Pine Bush...it’s inaccurate, but it’s ok that they’re worried [about] the Pine Bush”. They discussed how the public’s reaction reflected concern and a potential desire to protect the preserve.

While there have been complaints and negative comments, staff members talked about how there are a variety of reactions:

They get really upset that there’s a pile of wood and that the trees are getting cut down and what a mess that we’re making of the preserve and what they don’t seem to have is that final picture...there’s that end of the spectrum and then there’s the other end of the spectrum that’s like that’s great that they’re clearing and they’re reestablishing habitat...there’s those ends and then in between there are some people that have indicated to us that they trust us ‘

oh well I don't really understand what they're doing, but I know it has something to do with the Karner Blue or the habitat

This illustrates that while some individuals are not knowledgeable about why the management is done, some have trust that the APBP staff know what they are doing. However, according to another educator, understanding the management practices has influenced some people's reaction to the management practices, "I don't think I've ever gotten a negative response about our management techniques once people hear what we're doing, why we're doing it...". Other staff members have found positive comments on the Albany Pine Bush Preserve's Facebook page such as, "Wow the scrub oak looks so good!". Nevertheless, it is still unclear what proportion of local residents have negative, positive, or neutral reactions to the preserve's use of management practices.

#### Current and Future Outreach

Recently the Albany Pine Bush Preserve staff have been focused on becoming more "constituency oriented". To do this, they have tried to do more outreach about their use of active management practices, raise awareness in the community, and address community concerns to the best of their ability. The Preserve recently hired a new associate who "Attend[s] public events to listen, network, to create connections with our constituencies...bring back feedback from the community and share it with the rest of the staff". This is with the aim to integrate community concerns into their outreach, education, and management plans.

To address individuals' complaints about active management practices, The Albany Pine Bush Preserve has a staff member call or visit residents to discuss their concerns. One staff member discussed some of their experiences talking with concerned residents:

A lot of people just want to have their complaint heard. They just want it to be acknowledged that we did something to upset them...I'll talk to them and apologize and normally we'd move on and everything's fine, but they want a call back or to see me in person...

In addition to phone or in-person follow-ups, an executive staff member discussed how they are trying to be more proactive about informing the community about their management:

I said let's mow and be more proactive and get the word out to people. So, we have tried that and it just depends if the press picks it up and on what medium picks it up...if it's televised a lot of people see it, if it's print...not a lot...

Therefore, the Albany Pine Bush Preserve has been making efforts to inform the public about its management, but the effectiveness of the outreach methods used may vary.

Some staff members noted a general lack of awareness of the preserve among the public and nearby residents. As one educator stated, "It seems like a good proportion of people

like don't know about us, aren't aware of us, and haven't used us". This was not a unique sentiment; at least eight other interviewees recognized that lack of awareness and general knowledge about the preserve. One conservation specialist talked about their experiences going to graduate school less than 3 miles from preserve land:

I went to SUNY Albany for grad school and I didn't know about it 'til like I guess I found it looking for a place to go for a hike randomly...I started here in 2011, ...I felt like at SUNY Albany not a lot of people talk about it or knew about it.

Another educator expanded on that lack of awareness, "A lot of feedback I get...is that oh my gosh I've lived in Albany my whole life or I've been here for 10 years. I didn't even know you guys were there! And they live in Guilderland". Several educators discussed their amazement upon hearing that about people's unawareness of the Albany Pine Bush Preserve, "I'm still surprised that people don't know we're here".

Although there are still residents in the area that are unaware of the APBP, a long-time staff member reflected on their interactions with the public in the past:

I say are you familiar with the Pine Bush? People say, "Yeah I've been to the Discovery Center or I've been to a program there... or I took my kids and we went for a hike". So, you hear that a lot whereas 15 years ago ...people would say yeah there's the blue butterfly right?

An educator relayed a similar sentiment,

I get fewer people that I did just a year ago saying "I have no idea what the Albany Pine Bush is, tell me what it is? You know I've driven by and always been curious or I read about it someplace and I know absolutely nothing about it"...I used to get a lot of that maybe close to half of the people coming in a year ago and probably way less than that now.

The educator believed that the increase in public awareness was due to their current outreach efforts including media coverage, "I think in the past year there's been a lot more awareness and it could be because of all the media attention that we have received and worked for". The preserve is consistently mentioned in the local newspaper, and also in parenting magazines, "There's a whole preschool magazine, Parent World it's called, oh yes and we're always in there". They also have been trying to connect with people through social media platforms like Facebook.

### **Future Improvement Opportunities**

When staff interviewees were asked about improvement opportunities for the preserve, most discussed expansions to the preserve to reduce habitat fragmentation, education, and outreach. One staff member envisioned a larger Discovery Center facility to provide more things for people to do, "like maybe a really cool library with lots of cool nature resources or a place where people can sit and have lunch to enjoy the scenery as they have lunch".

Many of the education staff members discussed education improvements. One saying, [you] could always do more with education”. Two educators and two executives focused on trying to connect with non-visiting or disgruntled residents. One asked, “how do we connect better with those people that are out there that are being vocal?”. Another was particularly interested in “...building relationships, especially with those people who may actually never set foot in the preserve”. Building off this desire to connect with individuals, one staff member wished that the preserve held more community events, “I want to do a lot more events where we bring people in”. However, they recognized that this may be difficult as staff does not want outreach to compromise the protection and management of the Albany Pine Bush Preserve’s rare ecosystem, “...there is a limit to how many people we want...I think that would be a problem you know if it ended up having thousands of people visiting all the time”. This paradox again reflected the delicate balance between the outreach and protection goals of the Albany Pine Bush Preserve.

### Support Behaviors

Finally, staff members discussed how the public could support the Albany Pine Bush Preserve (See Table 8). Two of the most common suggestions were volunteering time at the Albany Pine Bush Preserve and talking positively or spreading the word about the Albany Pine Bush Preserve to friends and family. While several staff members encouraged volunteering, and talked about different ways people could volunteer, one educator talked about the importance of supporting the preserve in other ways, “I think volunteering is something that people fall back on a lot...I think that’s something that is seen as like a traditional way to help...but it’s not the only [way]”. Staff members talked a lot about spreading the word to raise awareness and support from the local community, “It’s the buzz in the community. It’s the neighbors chatting ‘Hey I had this awesome hike in the Pine Bush the other day. You should go check it out’...support of sharing experiences and raising awareness”. However, this isn’t limited to in-person interactions. Considering people’s reliance on technology and social media today, one APBP educator recognized how people’s comments and posts on social media platforms like Facebook, Twitter, and personal blogs could also have a positive impact on raising public awareness and support.



**Table 8.** Albany Pine Bush Preserve support behaviors as identified by staff members (n=12).

Support Behavior	Number of Interviewees
Volunteer	10
Spread the Word/ Talk Positively (i.e. in-person and social media)	10
Donate Money to Friends Group	7
Write Letters to Newspapers	6
Visit APBP/ Attend a Program	5
Show Political Support	4
Join the Friends of the Pine Bush	4
Aware of APBP and Appreciate It	3
Not Actively Opposing Management	2
Let APBP Staff Know You Appreciate It	2
Donate Land	1

In addition, staff members talked about donating money to the Friends of the Pine Bush, a non-profit friends group that provides funding for research and some outreach projects such as the "...Ticket for Ride Program where the Friends pay for buses so that students at schools in underserved communities can come in and experience a program". Technically the preserve itself cannot accept donations, "We don't ask for money...they can give the Friends [of the Pine Bush] money, but they can't give us money". This is due to the fact the preserve is publicly funded. Therefore, many staff members, especially the executive team highlighted talking positively as a behavior that could be executed either informally at the community level or formally by writing letters to local newspapers and politicians, "We don't have a donor base, we have a support base...[who] talk positively about it".

Less frequently mentioned behaviors included visiting the preserve or attending a program, writing a letter to show political support, donating land, and simply appreciating the existence of the preserve. Some interviewees also discussed how aware they believed the public was about what they could do to support. One executive member stated, "I don't think that the folks in that 10-mile radius circle around the preserve fully appreciate that they can get involved and show their support". A different educator estimated what percentage of people were aware of actions they could take, I think maybe 5-10% of the public [are aware of how they can help]". Much of this linked back to staff members' belief that there was a general lack of awareness and understanding of the public about the Albany Pine Bush Preserve, "...most people don't know where we are, what we are, how we're run, funded, any of that...". Some of which translates to some staff interviewees' belief that individuals do not know what they can do.

## Surveys

We received 188 (24%) mail surveys and 246 (20%) web surveys. Of the completed mail surveys, 165 were received from the four-step mailing process, and 24 were received following the drop-off mail-back process.

## **Respondent Characteristics**

### **Mail Survey of Residents**

Respondents to the mail survey were primarily White (94%) and on average 61 years old ( $SD = 13.14$ ). They were highly educated with 69% of them attaining a 4-year college degree or higher. Forty percent of respondents had a household income of \$100,000 or greater. Fifty-seven percent of the survey participants were female and 73% of resident respondents had children. More than half (63%) of the responding individuals lived within five miles of the Albany Pine Bush Preserve and thirty-five percent lived between 5 and 10 miles of the preserve. About half of the sample had never visited the Albany Pine Bush Preserve before; however, residents from the mail sample were generally aware of the preserve. Ninety-eight percent of mail participants had heard of the Albany Pine Bush Preserve and 51% of the sample reported visiting the preserve for independent activities and/or Albany Pine Bush Preserve-led programs. Descriptive statistics of all variables can be found in Table 9 and Table 10.

### **Web Survey of Discovery Center Visitors**

The web sample consisted mostly (85%) of visitors who engaged in both independent activities and Albany Pine Bush Preserve-led programming. Respondents to the web survey had similar demographics to the residential respondents of the mail survey. The participants in the web survey were predominantly White (94%); however, they were younger with the average age being 50 years old ( $SD = 14.23$ ). Seventy-eight percent of Discovery Center visitors who responded to the survey had a 4-year college degree or higher. Furthermore, 60% of the web respondents earned an income of \$100,000 or greater. The sample contained more females (71%) than males (29%) and 69% of participants had children. About two thirds of the sample lived within five miles of the Albany Pine Bush Preserve and one third of the sample lived between 5 and 10 miles from the preserve.

**Table 9.** Means and percentages for demographic variables in both the mail and web surveys.

Variable	Mean (SD) and Percentages Mail	Mean (SD) and Percentages Web
Visitor Type		
Non-visitor	86 (49%)	2 (1%)
Visitor: Independent Activities Only	60 (34%)	30 (14%)
Visitor: Independent Activities and APBP Programming	29 (17%)	187 (85%)
Race		
White	168 (94%)	170 (94%)
Non-White	11 (6%)	11 (6%)
Age	61.08 ± 13.14	50.39 ± 14.23
Education <sup>1</sup>	4.74 ± 1.37	5.17 ± 1.09
Gender		
Male	104 (57%)	53 (29%)
Female	77 (43%)	132 (71%)
Parent		
No	50 (27%)	59 (31%)
Yes	132 (73%)	131 (69%)
Distance from preserve		
<5 Miles	117 (63%)	124 (66%)
5-10 Miles	69 (37%)	64 (34%)

<sup>1</sup> Response Categories 1 = Less than high school diploma, 2 = High school diploma, 3= Some college, 4= 2-year college degree, 5 = 4-year college degree, 6 = Graduate/ Professional degree

### Sample Comparisons

The mail and web samples differed significantly across five main variables: knowledge about the preserve, awareness of active management practices used at the preserve, attitudes towards active management practices, intention to oppose the use of active management practices, and intention to support the Albany Pine Bush Preserve (APBP) (Table 10). Residents from the mail survey were significantly less knowledgeable about the APBP than were Discovery Center visitors from the web

sample. Respondents of the mail sample were able to identify about two management practices used, while participants from the web survey on average were able to identify about three management practices used at the Albany Pine Bush Preserve. Furthermore, mail residents on average held neutral attitudes towards the use of management practices and web Discovery Center visitors also held neutral, but slightly more positive, attitudes towards the use of management practices. This attitudinal difference is also reflected in individuals' intention to oppose the use of management practices at the Albany Pine Bush Preserve. While both mail and visitor survey respondents were not likely to oppose the use of active management practices at the Preserve, visitor respondents were significantly less likely to oppose the use of management practices at the APBP than their mail survey counterparts. Finally, we found that residents from the mail sample had significantly lower intentions to support the Albany Pine Bush Preserve than did visitors (Table 10). Individuals from the mail sample were somewhat less likely to engage in support behaviors ( $M=2.54$ ) while respondents from the web sample on average fell between neutral and somewhat likely ( $M=3.50$ ).

**Table 10.** T-test results for dependent and independent variables across sample type (i.e. mail and web)

Characteristic	Mail Residents Mean (SD)	Web Discovery Center Visitors Mean (SD)	p-value for t- test
Knowledge about the Albany Pine Bush Preserve (Scale of 1-17) <sup>2</sup>	9.45 ± 2.66	11.02 ± 2.00	<0.001
Awareness of Management Practices	1.87 ± 1.55	2.90 ± 1.29	<0.001
Attitude towards Management practices <sup>1</sup>	3.31 ± 0.72	3.62 ± 0.75	<0.001
Intention to Oppose the Albany Pine Bush's Use of Management Practices <sup>1</sup>	2.21 ± 0.92	1.87 ± 0.79	<0.001
Intention to Support the Albany Pine Bush Preserve <sup>1</sup>	2.54 ± 0.87	3.50 ± 0.68	<0.001

<sup>1</sup> Response Categories 1= Strongly Disagree 2=Disagree, 3= Neutral, 4=Agree, 5 =Strongly Agree

<sup>2</sup> Number of correct answers to 17 multiple choice and true false questions about the APBP

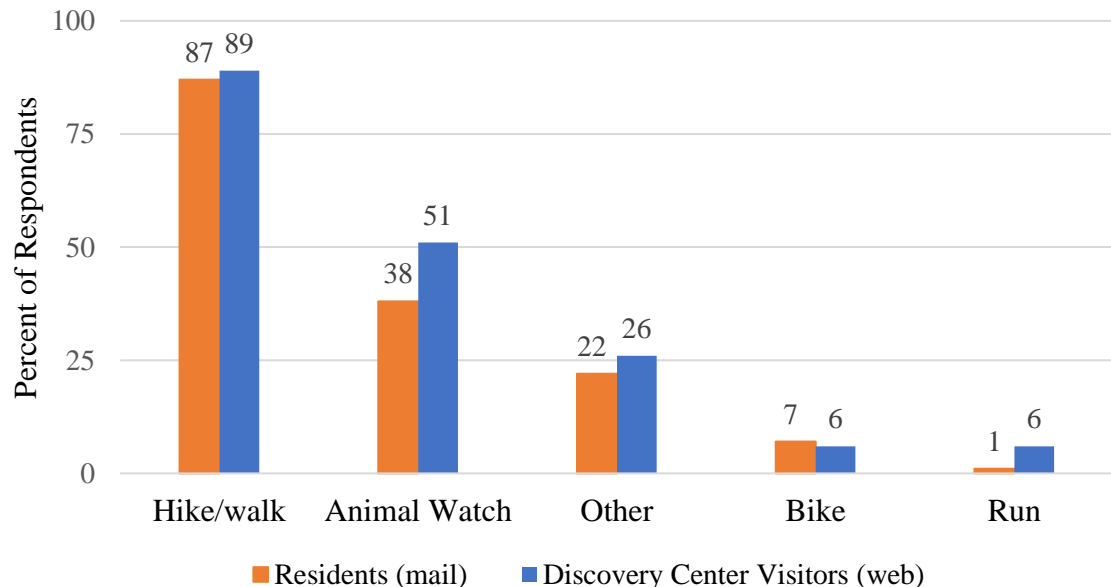
## Descriptive Analyses

### Visitor Activities/Use of the Albany Pine Bush Preserve

In both surveys, respondents who had visited the Albany Pine Bush Preserve were asked what types of activities they engaged in when visiting the preserve. Individuals identified independent activities that they did alone or with others and Albany Pine Bush Preserve-led programs in which they participated. About two-thirds of residents from the mail sample who visited the preserve reported only engaging in independent activities at the preserve. The other 33% of mail sample who visited the preserve participated in both independent and Albany Pine Bush Preserve-led programming. In contrast, the majority (85%) of the web sample of Discovery Center visitors engaged in both independent activities and APBP-led programming and only 15% solely engaged in independent activities.

Of the independent activities people performed while visiting the preserve, hiking or walking the trails was the most popular among both resident and Discovery Center visitor samples (Figure 4). About 90% of visitors did some type of hiking of the trails when they visited. Animal watching followed hiking as the second most popular activity. Just under 40% of individuals from the mail sample and about 50% of the web sample watched butterflies, birds, mammals, or other animals. About 25% of individuals from both the mail and web samples engaged in other activities including independent exploration of the exhibits at the Discover Center, winter sports (i.e. snowshoeing and cross-country skiing), and hunting.

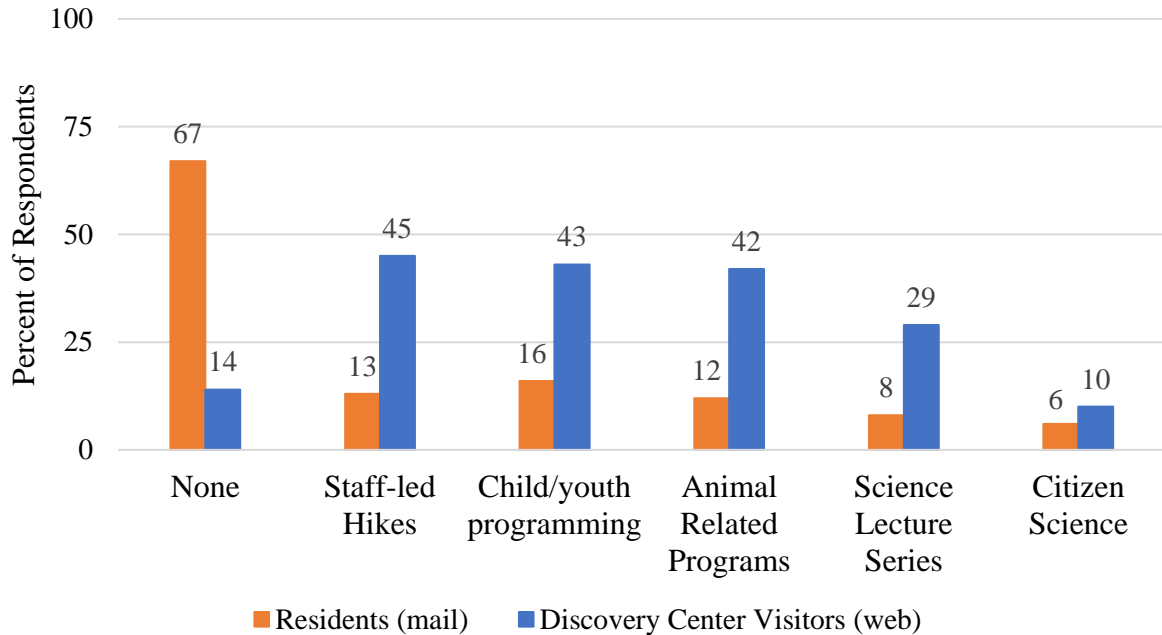
**Figure 4.** Percent of independent activities of respondents who visited the Albany Pine Bush Preserve by sample.



Of the Albany Pine Bush programs individuals attended, staff-led hikes, youth programming, and animal related programs were the most popular for both mail and web survey respondents (Figure 5). About 45% of web respondents and about 15% of resident respondents attended each of the programs. This was followed by the science lecture series

and citizen science programs. However, about 67% of mail respondents and less than 15% of web participants never attended an Albany Pine Bush Program and instead engaged in independent activities at the preserve.

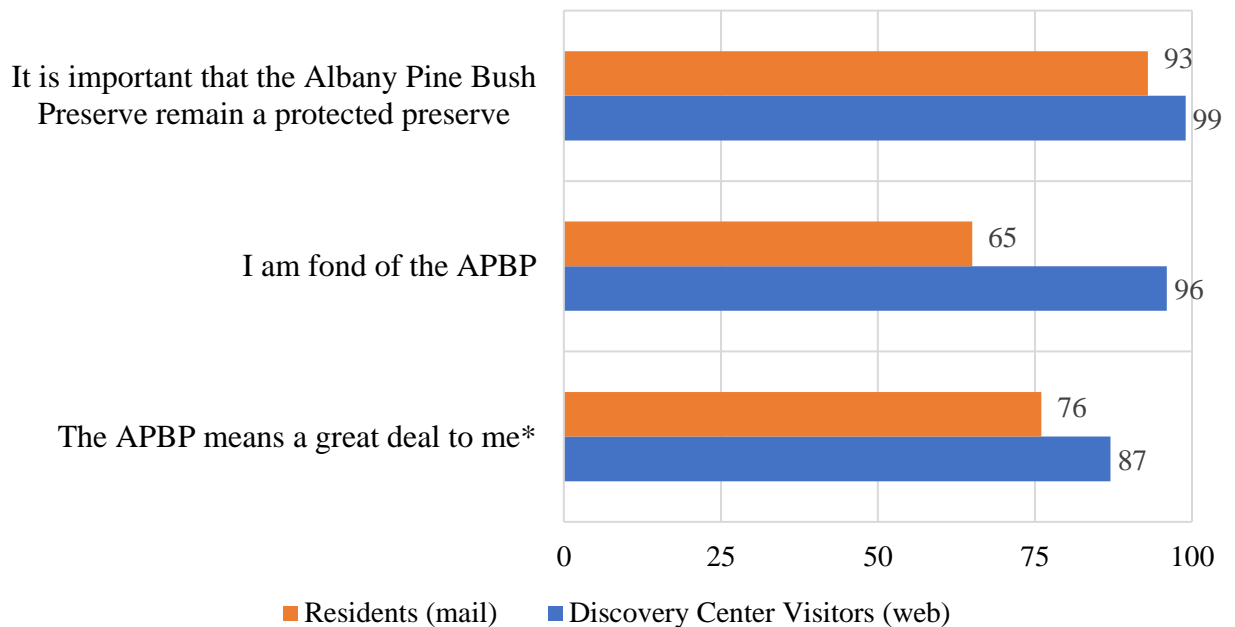
**Figure 5.** Percent of mail and web respondents who attended various Albany Pine Bush Preserve-led programs.



#### Assessment of Albany Pine Bush Preserve Value

Respondents who were familiar with the preserve were asked about their general appreciation and support of the preserve. Almost all residents (mail) and Discovery Center visitors (web) agreed that it is important that the APBP remain protected (Figure 6). A large percentage of visitors from the web sample (96%) had positive emotions towards the preserve, while only 65% of residents from the mail sample reported “being fond” of the preserve. Individuals who had visited the preserve were asked whether the APBP meant a great deal to them. Seventy-six percent of visitors from the mail sample and 87% of visitors from the web sample agreed that the APBP held a personal meaning to them.

**Figure 6.** Residents' and Discovery Center Visitors' Appreciation of and Support for the APBP.

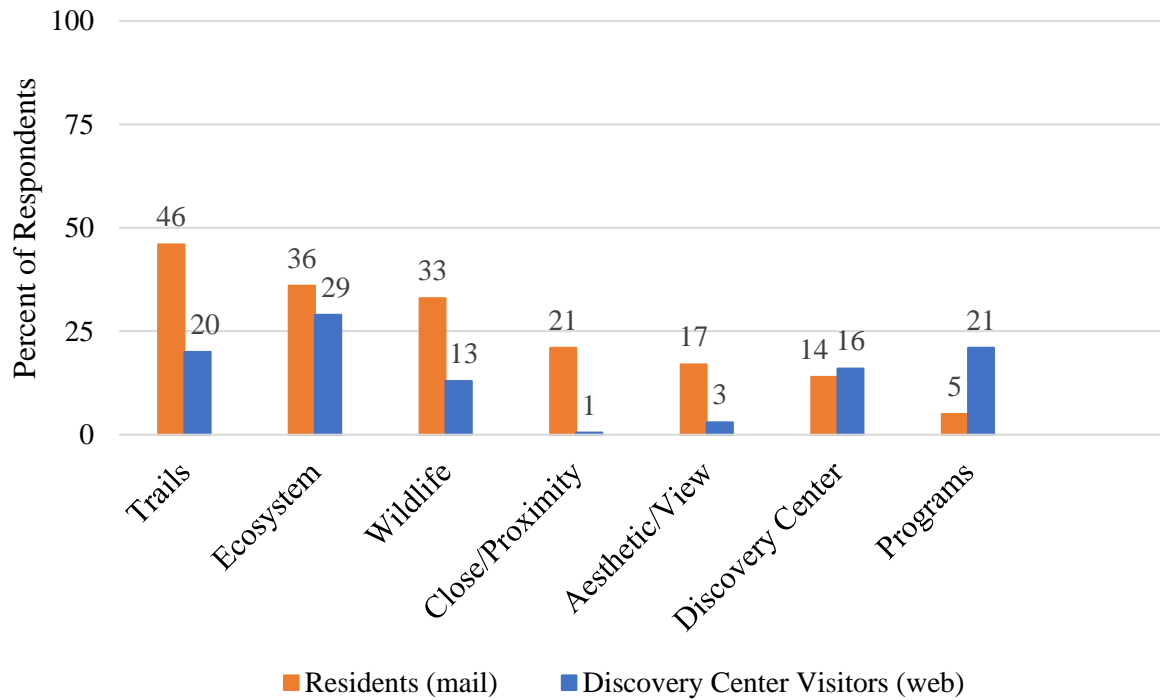


\*Only visitors from the web and mail samples responded to this survey item

Visitor respondents from both the mail and web survey were also asked to identify what they valued most about the preserve (Figure 7). For mail participants, the three most highly valued aspects of the preserve were the trails (46%), ecosystem (36%), and wildlife (33%). About twenty 20% of the mail respondents also valued the proximity of the preserve (21%), the aesthetics of the preserve (17%), and the Discovery Center (15%). Only 5% of resident visitors from the mail sample valued APBP programs.

For the Discovery Center visitors from the web sample, the ecosystem (29%), programs (21%), and trails (20%) were the most highly valued aspects of the Albany Pine Bush Preserve. Less than 5% of Discovery Center visitors valued the proximity of the preserve or the aesthetic of the Albany Pine Bush Preserve.

**Figure 7.** Elements visitors living within 10 miles valued the most about the Albany Pine Bush Preserve.

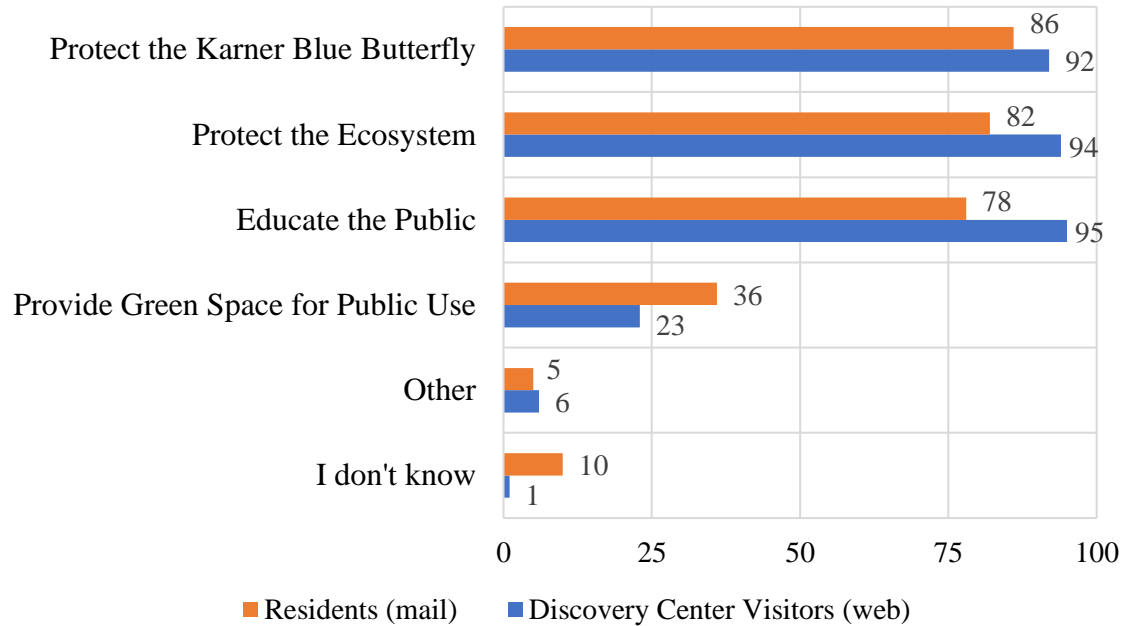


### Preserve Knowledge

To understand participants' knowledge about the preserve, individuals were asked true-false questions about the preserve and multiple-choice questions about the goals of the preserve and its use of active management practices. With respect to identification of the goals of the preserve, most of respondents from both the mail and web surveys believed that the goals of the preserve were to protect the Karner Blue Butterfly, protect the ecosystem, and educate the public (Figure 8). Only about 20% of respondents to the mail survey and about one third of participants from the web survey believed the preserve was there for public use. However, protecting the ecosystem, educating the public, and providing green space for public use are three explicit goals of the APBP.



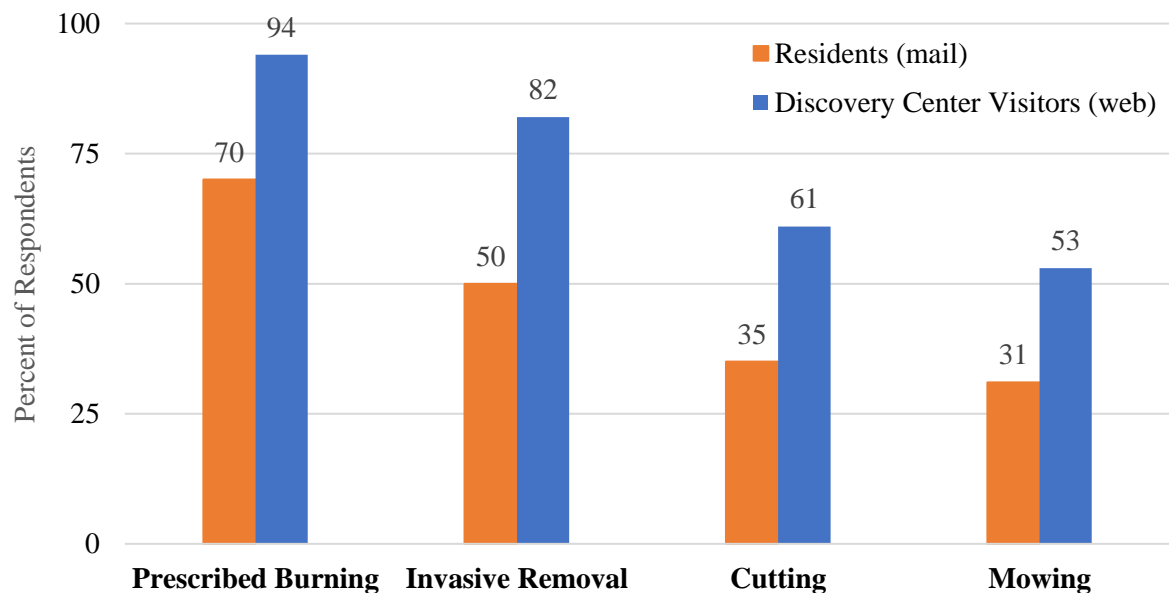
**Figure 8.** Respondents' identification of the Albany Pine Bush Preserve's goals.



In addition to the goals of the Albany Pine Bush Preserve, participants were also asked to identify which management practices the Albany Pine Bush Preserve used. About 70% of mail residents were aware of the preserve's use of prescribed fire and 50% were aware that the preserve removed invasive species (Figure 9). Only about a third of the residents (mail) were aware of the use of cutting of trees to create openings in the forest and mowing of small trees and shrubs.

Discovery Center visitors from the web sample were more aware of all of the management practices. Almost all (94%) of the web participants were aware of the preserve's use of prescribed burns. Eighty-two percent of web respondents (visitors) knew that the Albany Pine Bush Preserve removed invasive species. They also were relatively aware that the preserve cut trees to create openings in the forest with 61% of respondents identifying it as a management practice. About half of respondents (53%) were also aware of the preserve's mowing of small trees and shrubs.

**Figure 9.** Respondents’ awareness of active management practices at the Albany Pine Bush Preserve.

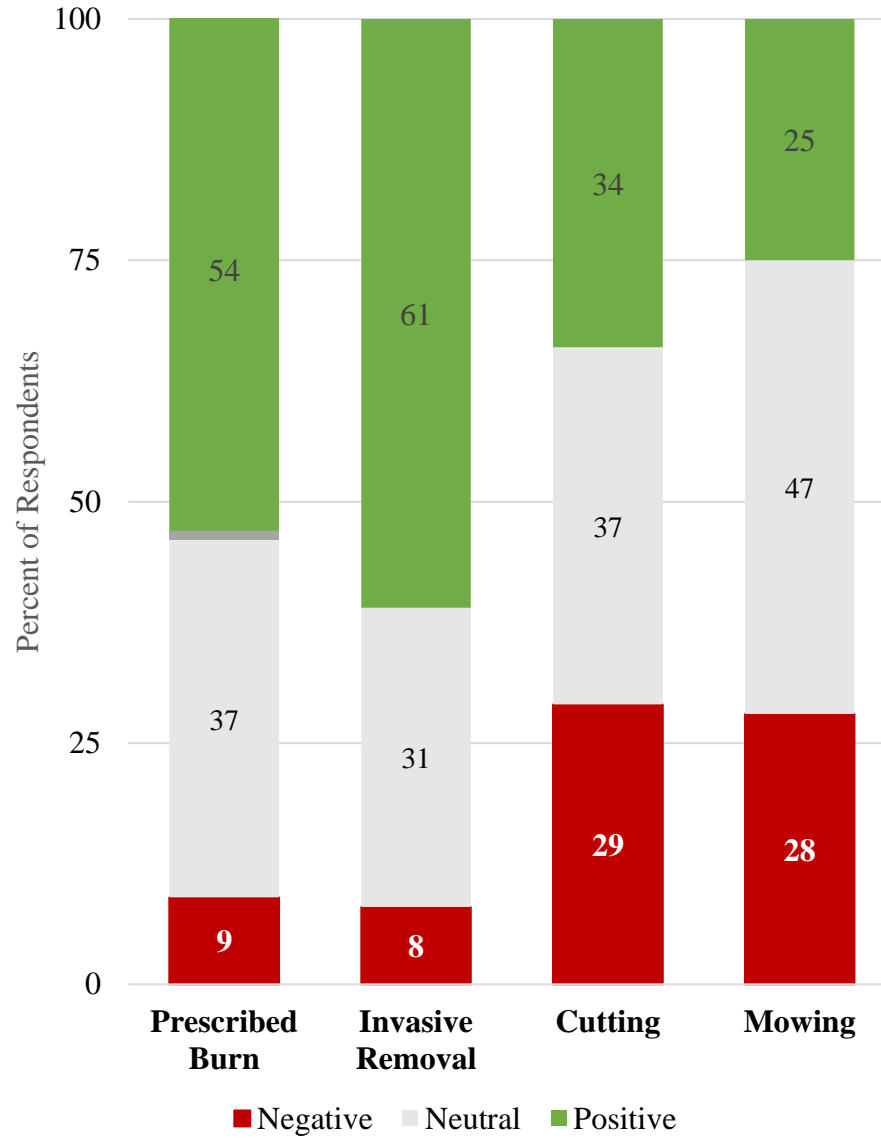


### Management Practices

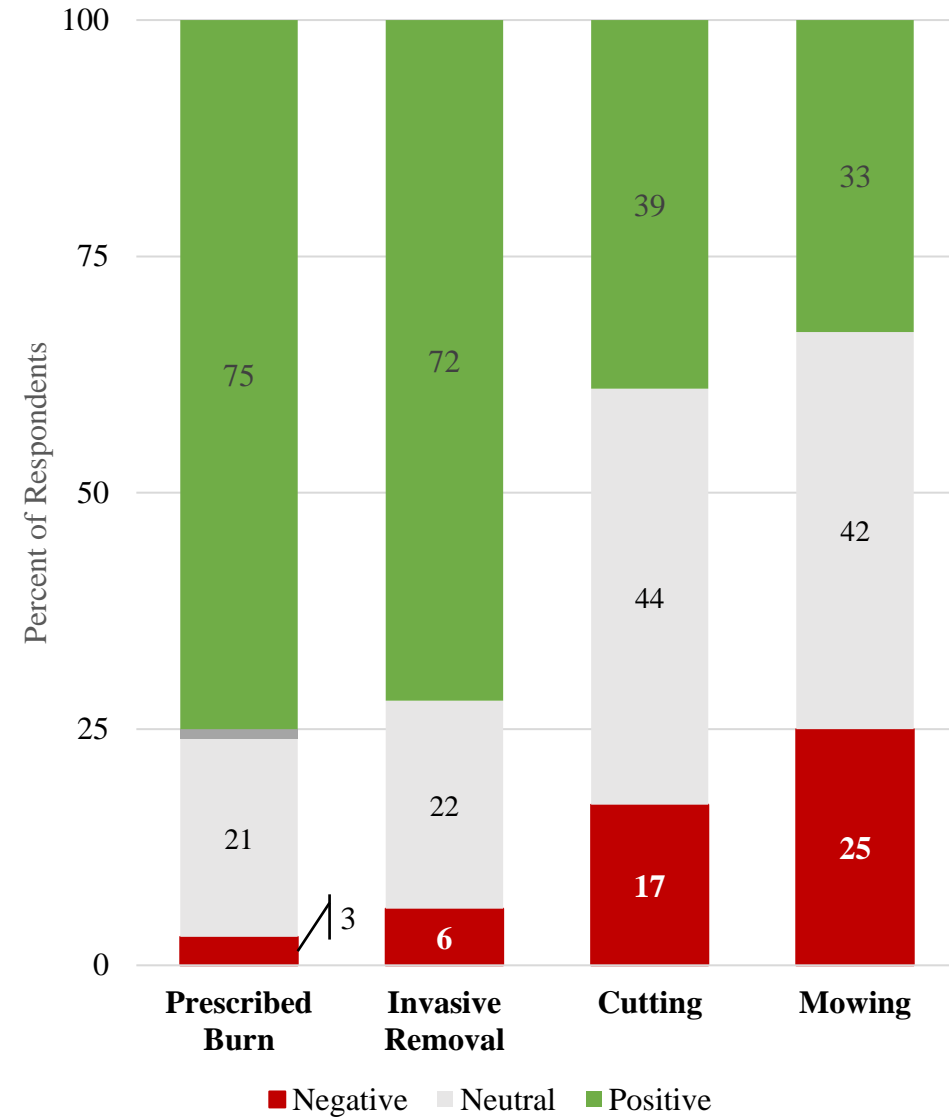
Survey respondents were asked to report their general attitudes towards the use of various management practices in natural areas. We found that respondents from both the mail and web surveys had more positive feelings towards the use of prescribed burns and invasive removal than they did towards cutting and mowing (Figure 10 and Figure 11). About sixty percent of mail residents had positive feelings towards prescribed burns and 54% of residents held positive attitudes towards the use of prescribed burns (Figure 10). Less than 10% of mail respondents had negative reactions to the use of prescribed burns or invasive species removal in natural areas. In contrast, 34% of respondents held positive attitudes towards the cutting of trees and only 25% had positive feelings towards the use of mowing. About 30% of mail respondents held negative attitudes towards the use of cutting and mowing.

Within the web sample of Discovery Center visitors, we found that about 75% of participants held positive attitudes towards the use of prescribed burns and invasive removal (Figure 11). Furthermore, only 3% of visitor respondents reported negative attitudes towards prescribed burns and 6% had negative feelings towards the use of invasive species removal. Similar to the mail sample, respondents from the web sample viewed cutting and mowing less positively. Thirty-nine percent of Discovery Center visitors viewed cutting to create openings in the forest positively and 17% viewed the practice as negative. Mowing was the least positively viewed with only 33% of visitor respondents reporting positive feelings and 25% of mail survey respondents holding negative feelings towards the practice.

**Figure 10.** Mail residents' attitudes towards active management practices used at the Albany Pine Bush Preserve.



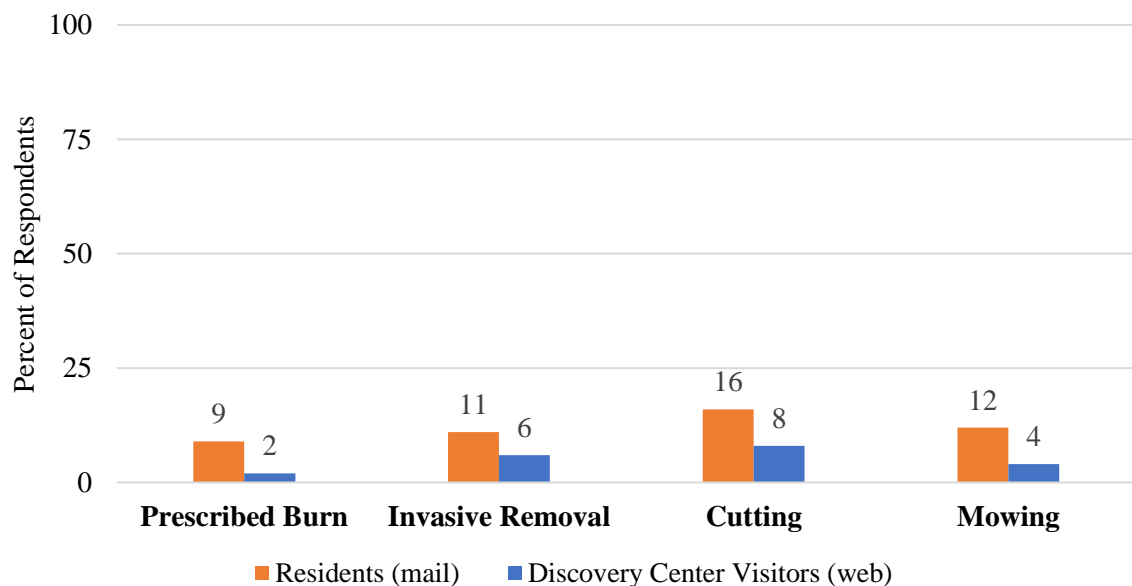
**Figure 11.** Web Discovery Center visitors' attitudes towards active management practices used at the Albany Pine Bush Preserve.



While individuals' attitudes are important to understand, they may not translate into behaviors. Thus, we also measured individuals' intention to oppose various management practices in the next 12 months. We found that less than 16% of mail residents indicated that they would oppose the use of active management practices at the Albany Pine Bush Preserve (Figure 12). Residents from the mail survey were the most likely to oppose the use of tree cutting (16%) at the APBP than any of the other management practices. About twelve percent of mail respondents reported intentions to oppose mowing and invasive removal. However, prescribed burns were the least likely to be opposed with only 9% of mail residents reporting their intention to oppose the management practice.

Web Discovery Center visitors were overall less likely to oppose the use of active management at the Albany Pine Bush Preserve. Cutting was the most likely to be opposed with 8% of web respondents reporting an intention to oppose the management practice. This was followed by 6% of Discovery Center visitors' intention to oppose the removal of invasive species and 4% intending to oppose the mowing of shrubs and small trees. Like the mail sample, very few (2%) visitors survey respondents indicated an intention to oppose the use of prescribed burns.

**Figure 12.** Respondents' intention to oppose the use of active management practices at the Albany Pine Bush Preserve.



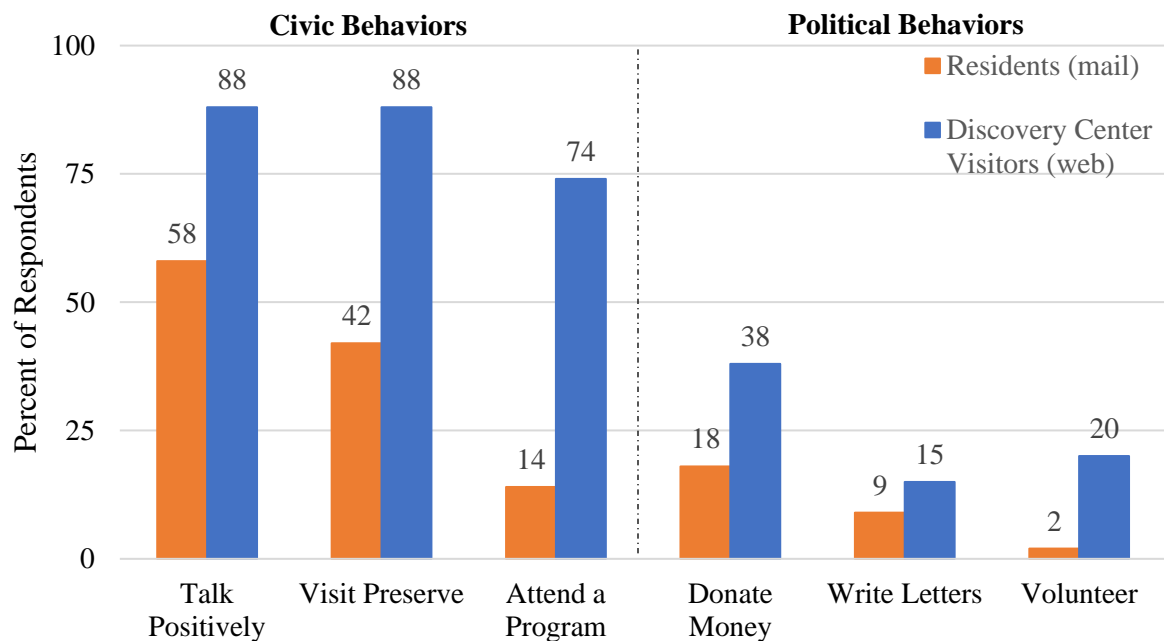
#### Intention to Support the Albany Pine Bush Preserve

Respondents were asked whether they self-identified as a supporter of the Albany Pine Bush Preserve and their intention to perform three civic behaviors (i.e. talking positively about the preserve, visiting the preserve, and attending a program) and three political behaviors (i.e. donating money, writing letters in support of the preserve to politicians, media, and staff, and volunteering) in support of the Albany Pine Bush Preserve. Less than

half (48%) of residents from the mail sample self-identified as supporters of the preserve in comparison to 82% of Discovery Center visitors from the web sample. With respect to specific behaviors, we found that respondents from both the mail (resident) and web (visitor) surveys were more likely to perform civic behaviors than political behaviors (Figure 13). Of the political behaviors, donating money was the highest reported behavioral intention for both mail (18%) and web participants (38%). Residents from the mail sample were the most likely to talk positively (58%) and visit the Albany Pine Bush Preserve (42%) in the next twelve months. Fewer mail respondents intended to attend a program at the preserve (14%) and the lowest reported behavior for residents was volunteering (2%).

Eighty-eight percent of web respondents intended to talk positively and visit the APBP in the next 12 months. Just under 75% of residents indicated that they planned to attend an APBP program in the next 12 months. About 20% of web respondents intended to volunteer at the Albany Pine Bush Preserve. Writing letters of support was the least likely to be performed with only 15% of Discovery Center visitors intending to do so.

**Figure 13.** Respondents' intention to perform civic and political behaviors in support of the Albany Pine Bush Preserve.



## Differences in Knowledge, Attitudes, Intention to Oppose Management, and Intention to Support the Albany Pine Bush Preserve

### Visitor Types

We investigated differences between respondents' knowledge about the Albany Pine Bush Preserve, attitudes towards management practices, intention to oppose the Albany Pine Bush Preserve's use of active management practices, and intention to support

the APBP across three visitor types: 1) Non-visitors, 2) Visitor: Independent Activities Only, and 3) Visitor: Independent and APBP-Led Activities. Due to the low proportion of respondents who were categorized as “Visitor: APBP Activities Only” (n=3), they were excluded from the analysis. Additionally, in the web sample, participants who were categorized as “Non-visitors” (n=2) were excluded from the analysis.

#### Residents (Mail Sample)

Within the mail sample, we found there were significant differences in the level of knowledge about the Albany Pine Bush Preserve, awareness of management practices, and intention to support the Albany Pine Bush Preserve. (Table 11). Recall that knowledge is a summative scale that ranges from a low of 0 to a high of 17. There was a significant difference in knowledge between non-visitors and visitors who engaged in both independent and APBP-led activities. Non-visitors from the mail sample had the lowest level of knowledge about the preserve, but the difference between non-visitors and visitors who engaged in independent activities only was not significant.

With regards to residents’ attitudes towards management, non-visitors and visitors who did not attend APBP programming held neutral feelings towards the use of active management practices. However, there were no significant differences between the visitor types in the mail sample. For individuals’ intention to oppose, we found that all three groups had a mean score that was close to 2.0 which signals a disagreement on the 5-point scale. Again, we saw no significant differences in individuals’ intention to oppose the use of active management practices (Table 11).

Finally, we investigated individuals’ intention to perform behaviors in support of the Albany Pine Bush Preserve. Our findings from the mail sample reveal that there are significant differences between all three visitor types. Both visitor groups had significantly higher intentions to support the Albany Pine Bush Preserve than did non-visitors. Moreover, there were significant differences between visitors who attended APBP programs and those who did not. Visitors who independently performed activities and attended APBP programming, had significantly higher intentions ( $M=2.62$ ) to support the preserve than those who did not attend APBP programming ( $M=3.16$ ). While there is a significant increase, the mean scores moves from slight disagreement from non-visitors (2.24) to more neutral responses (3.16) from mail respondents who performed both independent and APBP activities.

#### Discovery Center Visitors (Web Sample)

For the web sample, we did not find any significant differences between the visitors who only engaged in independent activities and those who engaged in both independent and APBP activities across any of the variables (Table 11). While there is a slight increase in knowledge, attitudes, and intention to support, these differences are not significant.

**Table 11.** ANOVA and t-test analyses comparing knowledge, attitudes towards management practices, intention to oppose the APBP's use of management, and intention to support the APBP between different visitor types in the mail and web samples

Variable	Residents (Mail) Mean (SD)				Discovery Center Visitors (Web) Mean (SD)		
	Non-visitor (n=86)	Independent Activities Only (n=60)	Independent and APBP Activities (n=29)	p-value for ANOVA	Independent Activities Only (n=30)	Independent and APBP Activities (n=187)	p-value for t-test
APBP Knowledge (Scale of 1-17)	8.74 ± 2.72 <sup>c</sup>	9.54 ± 2.62	10.61 ± 1.92 <sup>a</sup>	<0.01	10.52 ± 2.13	11.14 ± 1.92	0.19
Attitudes towards Management Practices <sup>1</sup>	3.26 ± 0.75	3.28 ± 0.65	3.47 ± 0.72.	0.364	3.58 ± 0.61	3.65 ± 0.78	0.58
Intention to Oppose APBP's Management Practices <sup>1</sup>	2.15 ± 0.95	2.39 ± 0.92	2.16 ± 0.92	0.298	2.00 ± 0.59	1.84 ± 0.81	0.27
Intention to Support APBP <sup>1</sup>	2.24 ± 0.79 <sup>bc</sup>	2.62 ± 0.90 <sup>ac</sup>	3.16 <sup>a</sup> ± 0.75 <sup>ab</sup>	<0.001	3.27 ± 0.64	3.53 ± 0.69	0.10

<sup>1</sup> 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

<sup>a</sup>significant difference from Non-visitor at p <0.05

<sup>b</sup>significant difference from Independent Activities Only at p <0.05

<sup>c</sup> significant difference from Independent and APBP Activities at p <0.05

### Distance from Preserve

To investigate whether there were differences in respondents' knowledge, attitudes, and intentions to behaviors differed based on their proximity to the Albany Pine Bush Preserve, we conducted t-tests comparing residents living less than 5 miles of the preserve and between 5 and 10 miles from the preserve. We found that there were only significant differences in intention to support the Albany Pine Bush Preserve in the mail sample (Table 12). Residents living less than 5 miles of the preserve had significantly higher intention to support the preserve than residents living between 5 and 10 miles from the preserve. No significant differences were found for mail residents' knowledge about the preserve, attitudes, or intention to oppose the use of management practices. With respect to the web sample, no significant differences were found for preserve knowledge, attitudes towards management practices, intention to oppose the use of management practices, or intention to support the preserve.

**Table 12.** T-test analyses comparing knowledge, attitudes towards management practices, intention to oppose the APBP's use of management, and intention to support the APBP between individuals living less than 5 miles and between 5 and 10 miles away from the Preserve in the mail and web samples.

Variable	Residents (Mail) Mean (SD)			Discovery Center Visitors (Web) Mean (SD)		
	<5 miles	5-10 miles	p-value for t- test	<5 miles	5-10 miles	p-value for t-test
APBP Knowledge (Scale of 1-17)	9.77 ± 2.49	8.90 ± 2.93	0.07	10.96 ± 2.04	11.18 ± 2.03	0.49
Attitudes towards Management Practices <sup>a</sup>	3.35 ± 0.70	3.24 ± 0.75	0.33	3.65 ± 0.74	3.67 ± 0.75	0.86
Intention to Oppose APBP's Management Practices <sup>a</sup>	2.26 ± 0.88	2.15 ± 1.01	0.48	1.90 ± 0.85	1.79 ± 0.71	0.37
Intention to Support APBP <sup>a</sup>	2.67 ± 0.82	2.32 ± 0.92	<0.01	3.56 ± 0.68	3.37 ± 0.68	0.08

<sup>a</sup> 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree



## Gender

For gender, we found that in the mail sample of residents, the only significant difference was in respondents' intention to support the Albany Pine Bush Preserve (Table 13). Females had significantly higher intentions to perform behaviors in support of the Albany Pine Bush Preserve than males. Within the web sample, we found that there was a significant difference in respondents' attitudes towards management practices. For Discovery Center visitors, males reported significantly more positive attitudes towards management practices than did females.

**Table 13.** T-test analyses comparing knowledge, attitudes towards management practices, intention to oppose the APBP's use of management, and intention to support the APBP across gender in the mail and web samples.

Variable	Residents (Mail) Mean (SD)			Discovery Center Visitors (Web) Mean (SD)		
	Male	Female	p-value for t-test	Male	Female	p-value for t-test
APBP Knowledge (Scale of 1-17)	9.24 ± 2.77	9.67 ± 2.56	0.34	11.3 ± 1.81	10.88 ± 2.13	0.19
Attitudes towards Management Practices <sup>a</sup>	3.36 ± 0.69	3.25 ± 0.74	0.35	3.96 ± 0.63	3.56 ± 0.75	<0.001
Intention to Oppose APBP's Management Practices <sup>1</sup>	2.15 ± 0.90	2.29 ± 0.92	0.33	1.72 ± 0.79	1.91 ± 0.80	0.15
Intention to Support APBP <sup>a</sup>	2.37 ± 0.90	2.81 ± 0.76	<0.001	3.51 ± 0.68	3.50 ± 0.68	0.91

<sup>1</sup> 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

## Education

Due to a low proportion of individuals who reported lower education levels in both the mail and web samples, four categories were consolidated for the ANOVA analysis. Individuals who reported having "less than a high school diploma", "High School Diploma", "Some College", and "a 2-year College Degree" were recoded as "2-year College Degree or Less". Thus, leaving us with three educational levels: "2-year College Degree or Less", "4-year College Degree", and "Graduate/ Professional Degree". First, we compared mean differences in knowledge, attitudes, and behavioral intention across the three education levels.

Within the mail sample, we found that there were significant differences in residents' intention to oppose the use of management practices (Table 14). Further investigation revealed that there were significant differences between residents with a 2-year college degree or less and those who received a graduate/professional degree. Individuals with a graduate/professional degree had significantly higher levels of knowledge about the preserve than those with a 2-year college degree or less. There were no significant differences in any of the variables within the web sample.

**Table 14.** Means and ANOVA with Tukey post-hoc results for knowledge, awareness, attitudes towards management practices, intention to support the APBP, and intention to oppose management practices by education level in the mail and web samples.

	Residents (Mail Survey)				Discovery Center Visitors (Web Survey)			
	Mean (SD)				Mean (SD)			
	2-year College Degree or Less	4-year College Degree	Graduate/ Professional Degree	p-value from ANOVA	2-year College Degree or Less	4-year College Degree	Graduate/ Professional Degree	p-value from ANOVA
APBP Knowledge (Scale of 1-17)	8.81 ± 2.82	9.54 ± 2.35	9.87 ± 2.67	0.12	10.59 ± 2.29	11.36 ± 1.56	11.01 ± 2.10	0.23
Attitudes towards Management Practices <sup>1</sup>	3.23 ± 0.75	3.27 ± 0.66	3.41 ± 0.76	0.32	3.55 ± 0.81	3.77 ± 0.67	3.68 ± 0.74	0.37
Intention to Oppose APBP's Management Practices <sup>1</sup>	2.50 ± 0.93 <sup>c</sup>	2.28 ± 0.96	1.93 ± 0.86 <sup>a</sup>	<0.01	2.19 ± 0.79 <sup>c</sup>	1.80 ± 0.67	1.77 ± 0.84 <sup>a</sup>	0.014
Intention to Support APBP <sup>1</sup>	2.53 ± 0.85	2.54 ± 0.83	2.58 ± 0.94	0.94	3.48 ± 0.66	3.42 ± 0.70	3.54 ± 0.68	0.58

<sup>1</sup> 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

<sup>a</sup> significant difference from 2-year College Degree at p <0.05

<sup>b</sup> significant difference from 4-year College Degree at p <0.05

<sup>c</sup> significant difference from Graduate/ Professional Degree at p <0.05

## Discovery Center Exhibit Analysis

Within each exhibit section in the Discovery Center, we describe the content and general design of the area. We then provide demographic information for individuals who visited the exhibit section and how they interacted with the material in the exhibit. A comparison of the various Discover Center exhibit sections based on the number of observations, demographic information, average time spent in the exhibit, and various engagement with the exhibit area can be found in Table 15. Exhibit section 1 is in an introduction to the Pine Bush, Section 2 goes into the Pine Bush ecosystem, Section 3 is about controlled burns, Section 4 focuses on the human history in the Pine Bush, and Section 5 has conservation information for early learners. Individuals' engagement with the exhibit varied by each exhibit section. Overall, we had the most observations in exhibits 1, 2, and 4. The controlled burn exhibit (Section 3) had the highest readership. The most discussed exhibit material was about the Pine Bush ecosystem (Section 2) and the controlled burn (Section 3) and introduction to Pine Bush exhibits (Section 1). About half of the observed individuals were female and many of those observed were in a family group. Individuals spent between 1 minute and 31 minutes within each exhibit section.

**Table 15.** Overview of the demographics, time spent, and interactions with each exhibit section.

Exhibit Section	Observations (n)	% Female	% in Family Group	Mean Time Spent (min)	Max Time Spent (min)	Read Exhibit Text	Engaged with Manipulatives	Discussed Exhibit Material
1- Intro	8	50%	50%	11	31	48%	63%	60%
2- Ecosystem	8	50%	70%	3.5	9	14%	100%	80%
3- Controlled Burns	5	40%	80%	2.2	3	100%	80%	60%
4-Human History	9	44%	44%	1.4	3	33%	66%	33%
5-Early Learners	4	75%	75%	4.3	6	50%	50%	25%

### Section 1: Entry Way and Pine Tree Section.

The entry way to the Discovery Center includes a pine tree anatomy exhibit and several interactives designed to give an introduction to the Pine Bush ecosystem. There are floor tiles that, when stepped on, trigger the sounds of local birds calling. There is also a life-size statue of a canid at the entry way.

#### Demographics

A total of ten subject observations were made in this first section; 50% female, 50% male, 50% in family groups, 20% couples and 30% individuals.

## Results

Of the ten individuals/groups who entered Section 1, eight individuals were timed and tracked for behaviors. The two for whom behaviors were not tracked walked straight through without engaging in any aspect of the Section; the data for behaviors is thus based on an  $n = 8$ . All the people tracked in groups ( $n=5$ ) talked during their visit, with 60% of those asking questions or making comments about the exhibits.

Approximately 63% of all subjects engaged in the manipulatives, with 48% looking at the exhibits and/or reading text. In particular, the canid statue was very popular with early learners and their caregivers, and interaction by the toddlers with the canid elicited conversations between child and caregiver. Among all subjects, the mean time spent in the exhibit area was 11 minutes, with a range of 1 minute to 31 minutes.

### **Section 2: Pine Bush Ecosystem Section.**

The exhibits in the ecosystem area includes exhibits of live animals that live in the Pine Bush regions—insects, etc.—and panels on how life is supported by the weather, water, and terrain of the area. There are a variety of interactives for small children, as well as a wind tunnel to mimic the changing topography of the local sand dunes.

## Demographics

A total of eight subject observations were made in this section; 50% female, 50% male. Twenty percent of those tracked were under the age of 16; 38% were between 25 – 34, 12% were between the ages of 35 and 44, and 25% were between the ages of 45 and 54. Of the six for whom group type data was taken, approximately 70% were in family groups and 30% were individuals.

## Results

The interactives and live animals in Section 2 were the most popular. Of the eight individuals who were tracked, 100% engaged with the manipulatives in this section. Of the people tracked in groups 80% talked during their visit, all of which asked questions (of each other; one to a docent) or made comments about the exhibits to the group, and spent on average over 4 minutes engaging with the exhibit or conversing in the group. However, most of the observed interactions were adult/child, question/answer types of conversation. Of the 75% of subjects who spent time looking at the exhibits, 1 in 7 read exhibit text. Among all subjects, the mean time spent in the exhibit area was about 3.5 minutes, with a range of 1 minute to 9 minutes.

### **Section 3: Controlled Burns/Stage Section.**

This section contains a variety of signage and manipulatives, as well as a stage and seating area with a large screen which, at the time of this evaluation, was running a continuous loop of an information video about the fire ecology of the Albany Pine Bush Preserve and the use of controlled burns. The area also included interactive information

to help visitors understand the intricacies for predicting environmental conditions which are right for a controlled burn.

### Demographics

A total of five subject observations were made in this section; 40% female, 60% male. Four of the five were in family groups, and one was an individual. One was under the age of 16, one between 25 – 34, two between the ages of 35 and 44, and one between the ages of 45 and 54.

### Results

Of those tracked, 100% read the text of exhibitions in this section. Every subject in the study spent time reading text on multiple panels. Eighty-percent engaged in the manipulatives, 60% asked questions or made comments about the exhibits. However, adults were clearly engaged, and the content in this section was mostly aimed at a more mature audience – i.e., not necessarily young children – and that may have provoked a more contemplative environment, especially since 75% of the subjects were adults in groups with children. Among all subjects, the mean time spent in this section was about 2.2 minutes, with a range of 1 minute to 3 minutes.

### **Section 4: Human History/ “Cookie Jar” Section.**

The history of humans in the Albany Pine Bush is exhibited here, as are a “cookie jar” manipulative that takes a photo of visitor as they try to open a jar of fake cookies, and several wall mount exhibitions.

### Demographics

A total of 9 subject observations were made in this section; 44% female, 56% male. Most subjects were part of family groups (44%), 33% were individuals and 22% were part of an adult couple. Twenty percent of those tracked were under the age of 16, 38% were between 25 – 34, 12% were between the ages of 35 and 44, and 25% were between the ages of 45 and 54.

### Results

Of those tracked, 33% read the text of exhibitions in this section. Sixty-six percent of those tracked engaged with the manipulatives (cookie jar), 33% of those in groups asked questions and made comments, and 33% read text. While the “cookie jar” exhibit was very popular, we observed a lack of understanding as to why the jar did not open—the lid of which was connected to a camera, which took and displayed a picture of the visitor. Some confusion as to the purpose of the jar, and the exhibit, was observed. Among all subjects, the mean time spent in the exhibit area was about 1.4 minutes, with a range of 1 minute to 3 minutes.

## **Section 5: Early Learners/Coin Drop Section.**

This section includes an interactive table display and a semi-circular padded bench for sitting, designed to accommodate toddlers and their caregivers. Several manipulatives are also made available, including a “coin drop” which acted as a donation site, as well as information on conservation. There was also an “Ask the Scientists” board, where visitors can write a question on a postcard, which is then answered by Albany Pine Bush Preserve Commission researchers, and either displayed on the board, or answered by email. There is also conservation messaging exhibits and information on how visitors can make a difference regarding conservation in their community.

### Demographics

A total of four subject observations were made in this section with 75% female and 25% male subjects. Of the four subjects, three were in family groups and one was an individual adult. Two subjects (50%) were between 25 – 34, one between the ages of 45 and 54, and one was between 55 – 65 years old.

### Results

Of those tracked 50% engaged with manipulatives, 50% read text, and 25% asked exhibit related questions and commented. Of those who engaged in this area, the mean time spent in the exhibit area was about 4.3 minutes, with a range of 2 minutes to 6 minutes. Two families with young children who visited the table/bench area sat down with their children and discussed the objects at the table, the manipulatives, etc. The most facilitation and conversation between caregiver and child was in this area. Many of the conversations were questions and conversations about manipulatives:

*(Adult) “Whoa, Look at this!! Can you put yours on the table?”*

*(Child) “I want one of these tables!”*

*(Child) “Look at this!!”*

*(Adult) “What are those things you’re playing with?”*

## **DISCUSSION OF RESULTS**

### **Visitor Activities/Use of the Albany Pine Bush Preserve**

From the resident and visitor intercepts, resident and visitor interviews, and staff interviews hiking, recreation, and visiting the Discovery Center were the three most identified activities individuals engaged in or were believed to engage in at the Albany Pine Bush Preserve. Findings from the surveys confirm that most people (87% mail and 88% web) independently hike at the Albany Pine Bush Preserve. Another popular activity reported by visitors was animal watching. Of the programs that individuals attended, children’s programming and staff-led hikes were among the most popular, followed by animal related programs. Thus, illustrating that individuals are interested in wildlife activities at the preserve.

While some of the staff members believed that individuals who independently used the preserve for recreation and other activities were distinct from individuals who attended APBP programming, our survey results revealed that there was not a clear distinction between individuals who only used the preserve for independent activities and those who only visited the preserve for APBP programming. Instead, we find that visitors either engage solely in independent activities or in a combination of APBP programming and independent activities. However, we do see some differences in the types of activities performed and values between visitors from the mail survey of nearby residents who mainly engaged in independent activities and visitors from the web survey who mostly engaged in a combination of independent and APBP-led activities. Thus, suggesting that there may be two distinct types of visitors, but individuals engage in a wider variety of ways than some staff members expected.

### **Discovery Center Exhibits**

From the exhibit analysis, Section 1 and Section 2 of the Discovery Center were the most engaging, respectively, based on the number of recorded behaviors and discussions about the content in each section. In particular, the live animals and interactive components in Section 2 were very popular and sparked conversations among 50% of observed individuals about the content. The Early Learners Section, Section 5, also appeared to facilitate conversation and interactions with exhibit materials between parents and their children. This kind of back and forth with children and facilitators can be, according to learning theory, a very valuable learning tool for early learners (Vygotsky, 1980). While there was a high level of engagement by children in many of the exhibits, the controlled burn exhibit (Section 3) appeared to appeal more to adults. All of the observed individuals read the text on multiple panels within this exhibit (Section 3). Finally, the history of humans in the Pine Bush exhibit (Section 4) was the least engaging for the subjects evaluated, with a mean of 1.4 minutes spent in the section, 33% looking at exhibits or reading text, and only 33% of those in groups asking questions or making comments. Further, there was some confusion about the purpose of the “cookie jar” interaction and the overall exhibit.

### **Aspects the Public Values about the Albany Pine Bush Preserve**

Across the resident interviews, staff interviews, and surveys, the unique ecosystem emerged as one of the most highly valued aspects of the Albany Pine Bush Preserve. Residents and visitors in the interviews discussed how aspects of the landscape were distinct from other natural areas in the region. They also valued the number and accessibility of the hiking trails at the preserve. This value of trails was also reflected in survey findings as 20% of visitor respondents from the mail survey and 46% of the visitors from the web sample reported valuing the trails the most. While staff members did not directly mention the trails, they indirectly suggested that the trails may be valued due to the importance of recreational opportunities provided by the preserve to the public. Other elements that were appreciated by resident interviewees and staff members included the protection of green space in an urban environment, its proximity to residents, and low-cost programming. From the mail and web surveys, these elements may be reflective of the different levels of engagement with the preserve. Twenty-one percent of residents from the mail



survey reported proximity as the most valuable aspect of the APBP in comparison to the 1% of visitors from the web survey. In contrast, 21% of Discovery Center visitors from the web sample highly valued the programs at the preserve in comparison to 5% of residents from the mail survey.

Interviewees also discussed negative aspects about the preserve in comparison to other local green spaces. Staff members believed that individuals wanted the preserve to resemble more of a neighborhood park that provides opportunities for 5k runs, picnics, and other sports activities. In addition, staff members discussed common complaints that they receive about the preserve which included the abundance of ticks and a lack of water elements (i.e. ponds, lakes, streams) within the preserve. Both of these concerns were mentioned by two of the resident interviewees. In addition, visitors discussed the noise from trails' proximity to highways and heavily trafficked streets that disturbed their experiences of solitude while hiking. Other residents talked about how they believed that the preserve would be boring because of the type of landscape; however, several resident interviewees also described how those perceptions changed once they visited and interacted with the preserve. Thus, suggesting that visiting the preserve may help shift individuals' negative perceptions to more positive ones. This was supported by survey results that revealed that 96% of Discovery Center visitors had positive feelings about the APBP in comparison to only 65% of residents from the mail survey.

## **Knowledge**

### **Goals**

Staff members and resident interviewees were asked to discuss the goals of the Albany Pine Bush Preserve. Both staff and residents collectively identified the same three goals: 1) maintain or preserve the unique ecosystem, 2) public education and awareness, and 3) provide a space for recreation and public enjoyment. All but one resident interviewee identified protecting the ecosystem as a goal of the preserve. About half of residents recognized the educational goal of the Albany Pine Bush Preserve and only a handful of residents discussed providing recreational opportunities as a goal. In contrast, all 12 staff members identified all three goals as important to the Albany Pine Bush Preserve.

In addition to differences in the types of goals recognized by staff members and resident interviewees, there were also some differences in the weight or priority of the goals. While many residents identified protection as a goal, a couple of interviewees believed that education was more of a priority for the preserve. In contrast, many of the staff members emphasized that the protection of the preserve was the priority, however, not at the expense of discontinuing educational programming or providing recreational opportunities.

From the survey results, we found that most of the mail and web participants reported protecting the Karner Blue Butterfly, protecting the ecosystem and educating the public, and providing a space for public use and as goals of the APBP Preserve. Furthermore, 10% of mail survey respondents were unsure of the goals of the APBP.

## **Awareness of Management Practices**

According to staff members, the preserve utilizes several different types of management practices to maintain the health of the ecosystem and quality of trails. These management practices include prescribed burns, mechanical treatments (i.e. cutting and mowing of trees and shrubs), invasive species removal, and the use of herbicides. Often, staff will close trails to protect the public from the management practices, to limit disturbances to sensitive or recovering areas, or when performing trail maintenance.

All resident interviewees were aware of the preserve's use of prescribed fire. About half were aware that staff members closed trails. Very few were aware of tree cutting and invasive species removal. No one mentioned mowing as a management practice. Most of the resident interviewees talked about their experiences with the management practices or the landscape after management. Residents noticed the smoke, burn marks, openings in the forest, etc. For staff members, the visibility of the management practices was also important to increased public awareness about the practices. They believed that the public would be more aware of practices that were more visible such as prescribed burns, cutting, and mowing. However, practices that were harder to see such as herbicide would not be recognized by the public. Also, they believed that individuals who lived closer to the preserve were more likely to be aware of the various management practices.

On average, nearby residents (mail survey respondents) could identify two management practices used by the Albany Pine Bush Preserve and visitors (web respondents) could identify three. Survey results revealed that most mail (75%) and web respondents (94%) were aware of the Albany Pine Bush Preserve's use of prescribed burns. About 50% of mail respondents and 82% of web respondents recognized the removal of invasive species as an active management practices. About a third of mail participants and two-thirds of web participants were aware of the preserve's use of cutting to create openings in the forest or mowing of small trees and shrubs. The public's high awareness about prescribed burns could reflect the preserve's history of outreach efforts.

Since 1991 individuals living near a burn site are sent a postcard annually and/or called daily informing them of pending burns near them. Outreach about the mechanical treatments is relatively recent and more targeted to the specific neighborhoods nearest to the activity, thus it makes sense that the public is more aware of the preserve's use of prescribed burns. Additionally, there is an educational exhibit in the Discovery Center about mowing and controlled burns. However, the APBP has been implementing other outreach techniques to raise awareness about their use of management practices. These include 1) reaching out to local media outlets to inform the public about their practices, 2) integrating information about the use of active management at the preserve into all their programming, 3) educational exhibits at the Discovery Center, and 4) signage near trail heads and at road sides at the managed sites. However, those efforts do not yet seem to have translated into increased awareness of mowing and harvesting management practices to the same extent as they have with prescribed burning and management of invasive species.

## **Overall Knowledge**

In addition to goals of the preserve and awareness of active management practices, survey respondents were given true-false questions about its ecosystem, its legal protection, national recognition, and geographic location. Some staff members believed that individuals living closer to the preserve and individuals who attended programs would be more knowledgeable about the preserve. While we did not find a significant effect for distance from the preserve in the visitor web survey, we found that in the mail sample visitors who engaged in independent and APBP-led activities had significantly higher levels of knowledge about the preserve than did non-visitors. Additionally, Discovery Center visitors from the web sample had significantly higher levels of knowledge than the residents from the mail sample. We did not find significant differences in knowledge level as a result of gender or education level.

## **Attitudes and Opposition to Management**

Overall, residents were relatively accepting of the management practices and adapted to changes in the landscape to avoid the smell and smoke while recreating. Individuals mostly discussed prescribed burns and some health and safety concerns around the fire and the smoke. However, they trusted the preserve if safety was assured. Staff members seemed relatively unsure about the public's attitude towards their use of active management practices. Several noted that they mostly encounter negative reactions and were not sure how representative those responses were. However, staff recognized that they received fewer calls about fire than cutting or mowing and relayed anecdotes about how the public thought development projects were being established on preserve land despite signs and outreach about the work.

In alignment with staff members' expectations and resident interviews, mail and web survey respondents had the most positive attitudes towards the prescribed burns and the most negative feelings towards the use of cutting and mowing in natural areas. When asked whether they would oppose the preserve's use of management practices, only a small percentage (less than 1 in 5) of mail respondents and even fewer web respondents reported intentions to oppose the use of active management practices at the APBP. Individuals were the least likely to oppose the use of prescribed burns and the most likely to oppose mechanical treatments such as cutting and mowing. However, individuals with a higher education (i.e. graduate/professional degree) had significantly lower intentions to oppose APBP management than individuals with a 2-year college degree less. Thus, suggesting that education may reduce individuals' intention to oppose the use of management practices. While we did not find significant differences in visitor types within each sample, we did find that Discovery Center visitors from the web sample had significantly lower intentions to oppose the use of active management practices than residents from the mail sample. Therefore, there does seem to be a relationship between APBP programming and reduced opposition to the use of active management practices. Further study on the mechanisms of how this occurs may be warranted.

## Opportunities for Improvement

In the interviews, residents and staff members both discussed opportunities for improvement for the Albany Pine Bush Preserve. Residents brought up three ways the preserve could improve its outreach with regards to the preserve's existence, management, and ways the public can support the preserve. While only one staff member discussed outreach as a potential opportunity, most of the staff members focused on ways to either improve the preserve's ecosystem or educational programming. Improvement opportunity questions were not asked of survey respondents.

One of the most common opportunities for improvement was around the public's general lack of awareness of the existence of the Albany Pine Bush Preserve. Many interviewees discussed how they had been living in the area for years and had never heard about the preserve until they stumbled upon it. This was not only a common narrative for residents, but was articulated by staff about their interactions with the public. Staff recognized that more individuals in the area have heard of the Albany Pine Bush Preserve and know where it is than previous years; however, they are still shocked by how many people who live relatively close to the preserve still have not heard of it. As a result, residents provided suggestions of ways to promote community engagement and awareness including community fundraisers, galas, and more festivals or large events like the APBP's current Lupine Fest. The Albany Pine Bush Preserve continues to try to improve their outreach efforts. They have been highlighted in local media and parent magazines, continue to work on their social media presence, and have a staff member dedicated to community outreach and engagement. While staff members would like to invite more individuals to the preserve, many were worried that too many visitors could undermine their goal to protect and manage a rare ecosystem in the future. Staff members continue to maintain a balance between the need for ecosystem protection and public use goals of the Albany Pine Bush Preserve.

In addition to promoting general awareness, residents also suggested improvements to the Albany Pine Bush Preserve's outreach around their management of the preserve. Resident interviewees discussed wanting more signs around the preserve to better understand what type of management is going on in an area, when the area will be reopened, and why it is happening. Although staff members discussed the existence of signs, it appears that the signs were not resonating with some individuals. One resident saw a sign, but believed the sign was ambiguous as it did not say when the area and trails would reopen. Staff members also discussed the fact that individuals misinterpret the signs as messaging about future development instead of management. Therefore, an area of future improvement is increased detail in the signage regarding trail reopening and the purpose and benefits of the management activities.

Finally, residents suggested improving community involvement in support for the preserve. Several of the resident interviewees were unsure of how to help the Albany Pine Bush Preserve. They did not know if the preserve needed donations or how to get involved with advocacy-based support. Staff members acknowledged that the public may not understand how the preserve is funded. However, several staff members discussed the public's lack of understanding about how to support the preserve in terms of a general lack of understanding about the preserve.

## **Public Support for the Albany Pine Bush Preserve**

Finally, both staff members and resident interviewees discussed ways in which the public could support the Albany Pine Bush Preserve. The three most discussed behaviors from resident interviewees were visiting the preserve, donating money, and engaging in some sort of activism. For staff members, the most commonly identified behaviors were volunteering, talking positively about the preserve, and donating money to the Friends of the Pine Bush. Several staff members believed that individuals' default behavior to support the preserve was to ask about volunteer opportunities. However, volunteering is seasonally dependent. Instead, many of the staff members emphasized talking positively as an important support behavior to help raise awareness within the community. Although a handful of resident interviewees also identified that as a support behavior, it was not as commonly recognized as donating money.

From the survey results, we found that 48% of residents from the mail survey and 82% of Discovery Center visitors from the web survey self-identified as supporters of the APBP. Furthermore, respondents from both mail and web samples had greater intentions to perform civic behaviors such as talking positively, visiting the preserve, and attending programs than political behaviors. The most reported behavioral intention for participants from both samples were talking positively and visiting the preserve. However, participants had lower intentions to perform political behaviors such as writing letters of support, volunteering, and donating money. About 38% of web respondents and 18% of mail respondents intended to donate money in support of the preserve and even fewer intended to write letters to staff, newspapers, or political officials. As staff members previously discussed, money cannot be directly donated to the preserve, therefore it is important that the public knows how to effectively donate money and how that supports the preserve. This may limit future confusion and misunderstanding around donating to the Friends of the Pine Bush and the Albany Pine Bush's funding source.

Investigation of differences in support revealed that respondents from the web sample had significantly higher intentions to support the APBP than participants from the web sample. However, within the mail sample, we did find significant differences in support based upon visitorship, distance, and gender. With regards to visitorship, visitors had significantly higher intention to support than non-visitors. In addition, our analyses revealed that visitors who engaged in both independent and APBP-led activities reported significantly higher levels of intention to support than visitors who only engaged in independent activities. Finally, other investigations revealed that women had higher intentions than men and individuals who lived within 5 miles of the preserve had higher intentions to support those who lived between 5 and 10 miles.

## **RECOMMENDATIONS**

The findings from this study provide insights and recommendations, not just for the Albany Pine Bush Preserve Commission, but land managers and environmental educators working in actively managed landscapes in urban areas.

## **Albany Pine Bush Preserve**

From the findings, we see that individuals from both samples (visitors and residents) who live within 10 miles of the Albany Pine Bush Preserve are aware of the preserve's use of prescribed burns, but less aware of the other management techniques used. Thus, outreach efforts focused on mechanical treatments such as cutting and mowing may improve community awareness. However, individuals also had the most negative attitudes towards these two practices in comparison to prescribed burns and invasive species removal—but intention to oppose was still less than 1 in 5. Listening to community concerns to understand why individuals are confused by and less accepting of the use of mechanical treatments could prove informative. Discussing or addressing those concerns in outreach and education materials may improve public acceptance of the management practice and reduce individuals' intention to oppose the preserve's use of mechanical treatments. Preserve staff can also evaluate if differences in prescribed fire and mechanical treatment outreach approaches may be partially responsible for the observed disparity in the public's knowledge and acceptance of these two types of active management.

In addition to improvements in management-related outreach, promoting the preserve through community events similar to the Lupine Fest may raise community awareness and engagement with the preserve. With respect to community engagement and support, it is important to clearly and effectively communicate to the Albany Pine Bush Preserve's constituency what individuals can do to support the preserve. Whether this is an emphasis about talking positively to friends and family, how to donate to the Friends of the Pine Bush, or clear messaging about public engagement and support behaviors may help reduce supporter confusion about what and how they can support the Albany Pine Bush Preserve.

Finally, with respect to the Discovery Center, our pilot exhibit analysis suggests that many of the interactive components of exhibits, especially in the introduction to the Pine Bush (Section 1), the ecosystem of the Pine Bush (Section 2), and the early learners (section 5) exhibit areas, are effective at engaging visitors to the Discovery Center. Further observations and analysis of Section 4 may help identify the causes of confusion around the cookie jar interactive and the exhibit's overall message. However, we recommend further analysis of individuals' engagement with the various exhibit sections prior to making substantive changes to the exhibits since this was a pilot exhibit evaluation.

## **Land Managers**

For land managers, understanding individuals' attitudes and intention to actively oppose management practices is important to ensuring that opposition does not translate into an impediment or delay in restoration or management work. Our survey findings suggest that individuals are the most accepting of prescribed burns. However, this may be related to the Albany Pine Bush Preserve's outreach efforts to inform the public about the prescribed burns, their safety, and when they will occur. Informational postcards, phone calls to local residents, and educational programming seemed to have helped in raising awareness of the prescribed fire and may be effective in other contexts. Furthermore, educational programming may also be beneficial as we found that individuals who engaged in APBP-led programming had significantly greater intention

to support the preserve than residents and visitors who only engaged in independent activities in the space. Staff members also discussed the benefits of listening and responding quickly to individuals' complaints and concerns about the use of active management practices. While the preserve received mostly negative phone calls from those vocal about the management practices, our samples of residents and visitors living within 10 miles of the preserve suggested that very few people intend to oppose the preserve's use of active management in the future.

Mechanical treatments such as cutting and mowing were plagued by negative attitudes, lower awareness, and higher intention to oppose when compared to prescribed burning and invasive removal. This may come from the fact that implementing these practices aesthetically look unsightly as discussed by several APBP staff members. In addition, it may be due to a lack of understanding of the difference between conservation and preservation. Finally, in an urban environment, the removal of trees and bushes were perceived as signs of future residential or commercial development. Thus, it is important that land managers communicate to the public what is being done and why. Whether that is through direct mail, signs, media coverage, or educational programming, the more individuals understand about the process, the less likely they may be to oppose it.

### **Environmental Educators**

Educational programming in actively managed sites can be very important as there were significant differences in individuals' knowledge and intention to support the actively managed preserve. Unique aspects of the Albany Pine Bush Preserve's programming included explaining active management practices used on the land and answering questions or concerns individuals had while in the program. According to APBP staff members, a discussion of active management practices is incorporated into every program. Integration of management-specific educational programming can be helpful in raising the public's awareness about management practices. Additionally, listening to community-members concerns about the management practices could assist in creating targeted educational and outreach materials.

Another element that can be used to mitigate negative reactions to management as mentioned by staff interviewees is ensuring that the public understands the difference between conservation and preservation. Ensuring that the public first understands that human intervention is necessary to promote the health of urban nature preserves may facilitate further discussions of what management practices are used and why.

Finally, for educators working in early-successional habitats, the residential interviews provide insights into how individuals may initially respond or perceive an early successional habitat as "boring". However, our survey results strongly suggest that visitation and engagement with the land may alter those perceptions. We also found that most individuals from both the mail (resident) and web samples valued the ecosystem and wildlife, therefore environmental appeals may be helpful in garnering support for early-successional habitats and the requisite management. Finally, both staff and resident interviewees recognized that confusion and misunderstanding about what the public could do and how they could get involved could limit public engagement and

support. Therefore, it is important to communicate in clear and easily accessible ways how individuals can get involved and support the preserve or center.



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## APPENDICES

### Appendix A: Intercept Survey and Descriptive Tables

#### *A.1 Intercept Survey for Residents and APBP Visitors*

**Intercept Script:** “Hi my name is Sarah Naiman, I am a researcher with Cornell University. We’re looking at the public’s use of the Albany Pine Bush Preserve. Do you have a few minutes to answer five questions about your experiences with the Albany Pine Bush Preserve?”

1. What town do you live in?
  - a. Guilderland
  - b. Colonie
  - b. Albany
  - d. Other: \_\_\_\_\_
2. How long have you lived there?
3. Have you ever visited the Albany Pine Bush Preserve?
  - a. Yes
    - i. How many times have you visited in the last 12 months?
    - ii. What do you like to do when there?
  - b. No
    - i. Have you ever heard of the APBP?
      1. **Yes**
        - a. What comes to mind when you hear Albany Pine Bush Preserve?
        - b. Is there a reason you haven’t visited?
        - c. What would it take for you to use the APBP?
      2. **No**
        - a. What does it sound like to you?
4. What are the first three words that come to mind that reflect who you are as a person?
  - a. I’m not referring to personality traits like kind, honest sincere
  - b. Ex. A person may be a businessman, a father, and an actor

I am looking to hear more about your experiences in the Albany Pine Bush Preserve. Would you be willing to partake in a more detailed discussion about your experiences in the APBP?

Name:

Email:

Phone Number:

*A.2 Full Table of Words Associated with the Albany Pine Bush Preserve*

**What comes to mind when you hear “Albany Pine Bush Preserve”? (n=88)**

Words Associated with APBP	Number of Respondents
Trails/Hiking	22
Butterflies	11
Outdoors/Nature	7
Close/Backyard	6
Pine Barrens/ Pine Trees	6
Preserve/Park	6
Education	5
Peaceful/Relaxing	4
Animals/Wildlife	4
Children	4
Well-maintained	3
Beautiful	3
Ecosystem	3
Discovery Center	2
Sand	2
Quiet	2
Place Want to Know More About	2
Burning/Fires	2
Biking	2
Clean	1
National Landmark	1
Field	1
Ticks	1
Safe	1
Place Drive-by	1
SUNY	1
Noise	1
Small Old-growth Forest	1
Lupine	1
Safe	1
Hunting	1

## **Appendix B: Consent Forms for APBP Staff, Residents, and APBP Visitors**

### *B.1: Oral Consent Script*

We are asking you to participate in a Cornell research study investigating 1) how individuals use and engage with the preserve and 2) how Albany Pine Bush staff members understand and perceive residential and user knowledge of the Albany Pine Bush Preserve.

We will ask you questions regarding your experience, knowledge, and involvement with the Albany Pine Bush. The interview will last between 45 and 60 minutes. The study is completely voluntary and you are able to skip any questions that you do not wish to answer. You may withdraw from the study at any time. If you withdraw from the study, your responses and information will not be used.

Identifying information from the consent form will be kept separate from the data and your name will not be linked to your specific statements. Digital files will be password protected. You will not be paid for participating in the study. With your permission, I will audio record the interview to accurately document our conversation.

Do you consent to being audio recorded?

Do you have any questions?

Do you consent to being in the study?

You will be emailed a copy of this consent form for your records.

If you have any further questions about the research you can contact me Sarah Naiman at 773-787-6220 or at [smn88@cornell.edu](mailto:smn88@cornell.edu).

*B.2: Consent Form for APBP Staff, Residents and APBP Visitors*

**CONSENT TO PARTICIPATE IN RESEARCH**

We are asking you to participate in a research study titled “Understanding place-specific conservation behavior in the Albany Pine Bush”. We will describe this study to you and answer any of your questions.

This study is being led by Dr. Shorna Allred, Associate Professor, Department of Natural Resources at Cornell University. Data collection will be facilitated by Sarah Naiman, a Graduate Research Fellow in the Department of Natural Resources at Cornell University.

**What the study is about**

The purpose of this research is to investigate Albany Pine Bush staff members understanding and perceptions of residential, and recreational user knowledge of the Albany Pine Bush Preserve and to investigate how individuals use and engage with the preserve.

**What we will ask you to do**

We will ask you to be interviewed in-person or over the phone for about 45-60 minutes. We will ask questions regarding your experiences, knowledge, and involvement with the Albany Pine Bush Preserve.

**Risks and discomforts**

**We do not anticipate any risks from participating in this research.**

**Benefits**

By taking part in this study, you will help to improve the understanding of individual’s connection to urban natural areas. In addition, your experiences and responses will help to inform the Albany Pine Bush’s conservation-related education, communication, and outreach in the future.

**Compensation for participation**

There is no payment for taking part in the study.

**Audio/Video Recording**

With your permission, we will audio record the interview to accurately document our conversation. Your name will not be associated with your interview in any way. Transcriptions of the interview will be used for the data analysis portion of the research. If you do not want to be recorded, the interviewer will take hand-written notes.

**Please sign below if you are willing to have this interview audio-recorded. You may still participate in this study if you are not willing to have the interview recorded.**

☐ **I do not want to have this interview recorded.**

☐ **I am willing to have this interview recorded.**

**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Privacy/Confidentiality/Data Security**

Identifying information from this consent form will be kept separate from the data. Your name will not be linked to your specific statements.

**Taking part is voluntary**

Your participation is completely voluntary. You are able to skip any question that makes you feel uncomfortable. You can withdraw from the study at any time without penalty. If you withdraw after being interviewed, all files from your interview will be destroyed.

**Follow up studies**

We may contact you again to request your participation in a follow-up survey of those living near the Albany Pine Bush Preserve. As always, your participation will be voluntary and we will ask for your explicit consent to participate in any of the follow-up studies.

**If you have questions**

The main researcher conducting this study is *Shorna Allred*, a *Professor* at Cornell University. Please ask any questions you have now. If you have questions later, you may contact *Sarah Naiman* at [smn88@cornell.edu](mailto:smn88@cornell.edu) or at 773-787-6220 or *Shorna Allred* at [srb237@cornell.edu](mailto:srb237@cornell.edu) or at 607-255-2149. If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) for Human Participants at 607-255-6182 or access their website at <http://www.irb.cornell.edu>. You may also report your concerns or complaints anonymously through Ethicspoint online at [www.hotline.cornell.edu](http://www.hotline.cornell.edu) or by calling toll free at 1-866-293-3077. Ethicspoint is an independent organization that serves as a liaison between the University and the person bringing the complaint so that anonymity can be ensured.

You will be given a copy of this form to keep for your records.

**Statement of Consent**

I have read the above information, and have received answers to any questions I asked. I consent to take part in the study.

Your Signature\_\_\_\_\_ Date\_\_\_\_\_

Your Name (printed)\_\_\_\_\_

Signature of person obtaining consent\_\_\_\_\_ Date\_\_\_\_\_

Printed name of person obtaining consent\_\_\_\_\_



## **Appendix C: Interview Guides for APBP Staff, Residents, and APBP Visitors**

### *C.1 Interview Guide for Residents and APBP Visitors*

#### **Introduction**

1. Could you tell me about where you live?
  - a. Probe: How long have you lived there? Who lives with you in your household?
2. What are the first three words that come to mind that reflect who you are as a person?
  - a. I'm not referring to personality traits like kind, honest, nice
  - b. Ex. A person may be a businessman, actor, and a father
3. Have you ever visited the Albany Pine Bush Preserve?
  - a. If not (**skip Q4-12**) probe:
    - i. If never heard of: What does it sound like to you?
    - ii. What comes to mind when you hear the Albany Pine Bush Preserve?
    - iii. Is there a reason that you haven't visited?
    - iv. What would it take for you to use the Albany Pine Bush Preserve?
4. How many times have you been to the Albany Preserve in the last 12 months?

#### **Experiences in the Pine Bush Preserve**

5. What types of activities do you take part in when you visit?
  - a. Probe: How long do you stay? Do you come alone or with others
6. What's the most enjoyable thing about coming to the Albany Pine Bush Preserve?
7. What are some other ways that you interact with the Albany Pine Bush Preserve?
  - a. See it every day, recreation, backyard, education, work, etc.
  - b. Recreation=ask if identify as runner, biker, etc.
  - c. Positive or Negative Experiences?
8. How do your friends and family use the Albany Pine Bush Preserve?
9. What are some activities that you currently unable to do, but wish you could in the Albany Pine Bush?
  - a. Probe: Is there something that prevents the performance of those activities?
10. In your opinion, what are the defining qualities about the Albany Pine Bush?
11. How does the Albany Pine Bush Preserve differ from other local green spaces?
12. What do you value about the Albany Pine Bush Preserve (if anything)?
  - a. Probe: Why?

#### **Knowledge**

13. More generally, why is it important that the Albany Pine Bush remain a protected preserve?
14. From what you know, what are some of the practices used by the APB staff to maintain the health of the preserve?
  - a. Probe: Why are they important?
15. How knowledgeable do you think your close friends and family are about the Albany Pine Bush ecosystem?
16. What do you think the goals are of the Albany Pine Bush Preserve?
17. How effective do you think the Albany Pine Bush Preserve is in achieving their goals?
18. In your eyes, what could be done to improve the Albany Pine Bush Preserve?

**Community Involvement with the Pine Bush**

19. In your opinion, how can people support the APB Preserve?
  - a. Active Knowledge of what can be done
  - b. Support = mean anything from donating money, use, volunteering, etc.
20. What types of activities do you do to support the APB Preserve?
21. What types of activities do people you know do to support the APB Preserve?
  - a. I.e. friends, family, etc.
22. Would you consider yourself a supporter of the Albany Pine Bush Preserve? Why?

## *C.2 Interview Guide for APBP Staff*

### **Introduction**

1. What is your role at the Albany Pine Bush Preserve?
2. How long have you worked at the Albany Pine Bush Preserve?

### **Experiences in the Pine Bush**

3. What are the most common types of activities that individuals take part in when visiting the Albany Pine Bush Preserve?
4. From your experience, what are some of the things that individuals find the most enjoyable when visiting the Albany Pine Bush Preserve?
5. Are there any activities that visitors and users ask for that are not currently available at the Albany Pine Bush?

### **Place Meaning**

6. In your opinion, what are the defining qualities about the Albany Pine Bush Preserve?
7. How does the Albany Pine Bush differ from other local green spaces?
8. What do you value about the Albany Pine Bush Preserve (if anything)?
  - a. Probe: Why?
9. In general, what do you think that residents and users value about the Albany Pine Bush Preserve?
  - a. Why?

### **Knowledge**

10. More generally, why is it important that the Albany Pine Bush remain a protected preserve?
11. What are some of the practices used by the APB staff to maintain the health of the preserve?
  - a. Probe: Why are they important?
  - b. How knowledgeable do you think that residents and users are of these practices?
12. What are the goals of the Albany Pine Bush Preserve?
  - a. How aware do you think users and residents are of these goals?
13. How effective do you think the Albany Pine Bush Preserve is in achieving their goals?
  - a. Probe: Why?
14. In your eyes, what could be done to improve the Albany Pine Bush Preserve?
15. How do you think that the current education and outreach programs impact participants?
  - a. Is there anything that could be improved?
  - b. Does it increase their level of appreciation and awareness? Knowledge?

### **Community Involvement with the Pine Bush**

16. In your opinion, how can people support the APBP?
  - a. Active Knowledge of what can be done
  - b. Support = mean anything from donating money, use, volunteering, etc.
17. What types of activities do individuals do to support the APBP?
  - a. How aware do you think users and visitors are of the ways in which they can support the APBP?

## **Appendix D: Survey Cover Letters for Mail, Web, and Drop-Off Surveys**

### *D.1 Mail Survey Cover Letters*

September 22, 2016

Dear Capital Region Resident:

We are sending you the enclosed questionnaire because we would like to learn about your views of nature preserves in New York's Capital District.

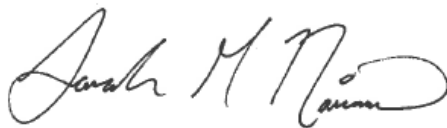
Cornell University is conducting this survey, funded by the Albany Pine Bush Preserve, to gain more information about how the community views and uses nature preserves in New York's Capital District. The results will be used to help improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach.

Your name was randomly selected from New York State property records from Albany, Saratoga, Schenectady, and Rensselaer Counties. Even if you have not been to a nature preserve, it is still important for you to fill out the survey so we can learn about what types of natural areas and programs you would like to see available.

Please complete the enclosed questionnaire as soon as possible, seal it with the white resealable label provided, and drop it in any mailbox; return postage has been paid. Your participation in the survey is strictly voluntary, but your response is very important to us. Your identity will be kept confidential and the information you give us will never be associated with your name.

Thank you in advance for your help with this study.

Sincerely,



Sarah Naiman  
Dean's Excellence Fellow  
MS Student



Shorna B. Allred  
Associate Professor and Associate Director  
Human Dimensions Research Unit

September 29, 2016

Dear Capital Region Resident:

Last week we mailed you a questionnaire asking about your use and views of nature preserves. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet completed it, we would appreciate it if you would take a few minutes now to fill it out. We greatly appreciate your prompt response.

Regardless of whether or not you have visited a nature preserve, your answers are important to us. Postage has been provided, so just fill out the questionnaire, seal it, and drop it in the nearest mailbox.

Thanks again for your help.

Sincerely,



Sarah Naiman  
Dean's Excellence Fellow  
MS Student



Shorna B. Allred  
Associate Professor and Associate Director  
Human Dimensions Research Unit

October 13, 2016

Dear Capital Region Resident:

About three weeks ago we wrote to you seeking information about your use and views of nature preserves. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet done so, please take the time to complete it today.

Cornell University is working with the Albany Pine Bush Preserve, a nature preserve in the Capital District. Your participation in this survey will improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach. For the results of the survey to be truly representative of all citizens in the Capital District, we need your response.

Let us assure you once again that your participation in this study is voluntary. Your identity will be kept confidential and the information you give us will never be associated with your name. In case our earlier mailing did not reach you, or in the event that your questionnaire has been misplaced, we have enclosed a replacement questionnaire. Return postage has been paid. After completing the questionnaire, simply seal it with the white resealable label provided, and drop it in any mailbox.

Thank you for your time and effort.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarah M. Naiman". The signature is fluid and cursive, with the last name "Naiman" being more prominent.

Sarah Naiman  
Dean's Excellence Fellow  
MS Student

A handwritten signature in black ink, appearing to read "Shorna B. Allred". The signature is fluid and cursive, with the last name "Allred" being more prominent.

Shorna B. Allred  
Associate Professor and Associate Director  
Human Dimensions Research Unit

October 20, 2016

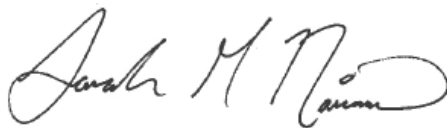
Dear Capital Region Resident:

We are writing to you one last time to encourage you to participate in the survey of residents' views and use of nature preserves in New York's Capital District. The study is collecting information on your views of existence and protection of nature preserves. Even if you have not visited a nature preserve, it is still important for you to fill out the survey so that we can understand your perspectives. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not yet heard from you. Our past research tells us that those who do not return their questionnaires right away often have quite different experiences and opinions from those who do. For the survey results to reflect accurately all types of residents, we need to hear from you and others who have not yet responded. Simply complete the questionnaire, seal it with the white resealable label provided, and drop it in any mailbox. Return postage has been paid.

Thank you for your time and effort.

Sincerely,



Sarah Naiman  
Dean's Excellence Fellow  
MS Student



Shorna B. Allred  
Associate Professor and Associate Director  
Human Dimensions Research Unit

## *D.2 Web Survey Cover Letter*

We are asking you to complete a questionnaire that explores your thoughts and experiences with natural areas in New York's Capital District.

The current study is being led by Cornell's Human Dimensions Research Unit in cooperation with the Albany Pine Bush Preserve.

### **What the study is about**

We would like to know about the public's views of nature preserves in New York's Capital District. Nature preserves are natural areas that are managed to protect plants, animals, or physical features of the land. This information will be used to help improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach.

### **Privacy/Confidentiality/Data Security**

Your name will be replaced with an id number, and will never be stored as part of the dataset. Data will be kept secure by storing it on password protected computers and on USB devices kept in locked files. Only members of the research team will have access to the de-identified data. We anticipate that your participation in this survey presents no greater risk than everyday use of the Internet.

### **Taking part is voluntary**

Your involvement is voluntary. You may refuse to participate before the study begins, discontinue at any time, or skip any questions/procedures that may make you feel uncomfortable, with no penalty to you, and no adverse effects on relationship with Cornell University, the researchers, or any of our affiliates.

### **If you have questions**

If you have questions about this survey, you may contact:

Sarah Naiman  
Dean's Excellence Fellow  
MS Student  
smn88@cornell.edu  
773-787-6220

Shorna Allred Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit  
srb237@cornell.edu  
607-255-2149

If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) for Human Participants at 607-255-6182 or access their website at <http://www.irb.cornell.edu>.

**THANK YOU FOR YOUR HELP!**



October 6, 2016

Dear Albany Pine Bush User,

Last week we emailed you a questionnaire asking about your use and views of nature preserves (e.g. Albany Pine Bush Preserve). We would appreciate it if you would take a few minutes now to fill it out. We greatly appreciate your prompt response.

Regardless of whether or not you have recently visited the Albany Pine Bush Preserve, your answers are important to us.

**Follow this link to the Survey:**

[\\${l://SurveyLink?d=Take the survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${l://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${l://OptOutLink?d=Click here to unsubscribe}](#)

Thanks again for your help.

Sincerely,

Sarah Naiman  
Dean's Excellence Fellow  
MS Student

Shorna B. Allred Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit

October 11, 2016

Dear Albany Pine Bush User:

About two weeks ago we wrote to you seeking information about your use and views of nature preserves (e.g. Albany Pine Bush Preserve) in New York's Capital District.

Cornell University is working with the Albany Pine Bush Preserve to improve the Albany Pine Bush Preserve's communication, outreach, and education to residents and users like you. Even if you have not recently visited the Albany Pine Bush Preserve, it is still important for you to fill out the survey so that we can understand your perspectives.

Let us assure you once again that your participation in this study is voluntary. Your identity will be kept confidential and the information you give us will never be associated with your name.

**Follow this link to the Survey:**

[\\${1://SurveyLink?d=Take the survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${1://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${1://OptOutLink?d=Click here to unsubscribe}](#)

Thank you for your time and effort.

Sincerely,

Sarah Naiman  
Dean's Excellence Fellow  
MS Student

Shorna B. Allred Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit

October 19, 2016

Dear Albany Pine Bush User,

About three weeks ago we wrote to you seeking information about your use and views of nature preserves (e.g. Albany Pine Bush Preserve).

Cornell University is working with the Albany Pine Bush Preserve. Your participation in this survey will improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach. For the results of the survey to be truly representative of individuals who interact with the Albany Pine Bush Preserve, we need your response.

Let us assure you once again that your participation in this study is voluntary. Your identity will be kept confidential and the information you give us will never be associated with your name.

**Follow this link to the Survey:**

[\\${1://SurveyLink?d=Take the survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${1://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${1://OptOutLink?d=Click here to unsubscribe}](#)

Thank you for your time and effort.

Sincerely,

Sarah Naiman  
Dean's Excellence Fellow  
MS Student

Shorna B. Allred Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit

November 16, 2016

Dear Albany Pine Bush User,

We are writing to you one last time to encourage you to participate in the survey of residents' views and use of nature preserves (e.g. Albany Pine Bush Preserve) in New York's Capital District.

The study is collecting information on your views of existence and protection of nature preserves. Even if you have not recently visited the Albany Pine Bush Preserve, it is still important for you to fill out the survey so that we can understand your perspectives. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not yet heard from you. Our past research tells us that those who do not return their questionnaires right away often have quite different experiences and opinions from those who do. For the survey results to reflect accurately all types of residents, we need to hear from you and others who have not yet responded. The survey will officially close on Friday 12/9/16.

**Follow this link to the Survey:**

[\\${l://SurveyLink?d=Take the survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${l://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${l://OptOutLink?d=Click here to unsubscribe}](#)

Thank you for your time and effort.

Sincerely,

Sarah Naiman  
Dean's Excellence Fellow  
MS Student

Shorna B. Allred Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit

*D.3 Drop-Off Cover Letter*

Nov. 12, 2016

Dear Capitol Region Resident:

Several weeks ago we invited you to participate in a survey of residents' views and use of nature preserves. Unfortunately, we didn't hear from as many people as we had hoped, so we are making this special effort to encourage residents like you to fill, complete, and mail back our questionnaire. We want to make sure the results truly represent the views of people in the region, not just those with strong opinions who might respond first.

The survey is voluntary and your identity will be kept confidential; the information you give us will never be associated with your name.

We hope that you take the time to complete the survey. Thank you for your time and effort.

Sincerely,



Sarah Naiman  
Dean's Excellence Fellow  
MS Student



Shorna B. Allred, Ph.D.  
Associate Professor and Associate Director  
Human Dimensions Research Unit

## Community Views of Nature Preserves



Cornell University  
Department of Natural Resources  
Human Dimensions Research Unit



*Descriptive Analysis: Mail Sample of Local Residents*

**Understanding the Public's Views of Nature Preserves in  
New York's Capital District**

Research conducted by the  
Human Dimensions Research Unit  
Department of Natural Resources  
Cornell University  
in cooperation with the  
Albany Pine Bush Preserve

We would like to know about the public's views of nature preserves in New York's Capital District. Nature preserves are natural areas that are managed to protect plants, animals, or physical features of the land. This information will be used to help improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach.

Please complete this questionnaire as soon as you can, seal it with the white re-sealable label provided, and drop it in any mailbox; return postage has been paid. We are interested in learning about your experiences and opinions. Your participation in this survey is voluntary, but we sincerely hope you will take just a few minutes to answer our questions. Your identity will be kept confidential and the information you give us will never be associated with your name.

**THANK YOU FOR YOUR HELP!**

## VIEWS ON NATURAL AREAS

*Natural areas are spaces without much human development that consist of grass, trees, or other vegetation.*

**IMAGE A**



- 1. Looking at Image A, please indicate whether you agree or disagree with each statement.**  
*(Check one box for each row)*

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I find this space appealing to look at. ( $n=188$ , $\bar{x}=4.4$ )	6 (3.2%)	4 (2.1%)	5 (2.7%)	60 (31.9%)	113 (60.1%)
I find this space to be very natural. ( $n=187$ , $\bar{x}=4.2$ )	6 (3.2%)	4 (2.1%)	16 (8.6%)	78 (41.7%)	83 (44.4%)
I am very likely to use this space for recreation. ( $n=187$ , $\bar{x}=3.7$ )	12 (6.4%)	19 (10.2%)	43 (23.0%)	59 (31.6%)	54 (28.9%)
I think this space looks healthy. ( $n=188$ , $\bar{x}=4.2$ )	6 (3.2%)	2 (1.1%)	14 (7.4%)	85 (45.2%)	81 (43.1%)



**IMAGE B**



2. Looking at Image B, please indicate whether you agree or disagree with each statement.  
(Check one box for each row)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I find this space appealing to look at. ( $n=181$ , $\bar{x}=3.7$ )	6 (3.3%)	14 (7.7%)	40 (22.1%)	82 (45.3%)	39 (21.5%)
I find this space to be very natural. ( $n=181$ , $\bar{x}=3.8$ )	4 (2.2%)	16 (8.8%)	39 (21.5%)	80 (44.2%)	42 (23.2%)
I am very likely to use this space for recreation. ( $n=181$ , $\bar{x}=3.3$ )	11 (6.1%)	33 (18.2%)	57 (31.5%)	52 (28.7%)	28 (15.5%)
I think this space looks healthy. ( $n=181$ , $\bar{x}=3.7$ )	5 (2.8%)	16 (8.8%)	50 (27.6%)	72 (39.8%)	38 (21.0%)

**3. Please indicate how strongly you agree or disagree with each statement about protecting natural areas. (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
It is important to protect natural areas that support rare plants and animals. ( $n=181$ , $\bar{x}=4.7$ )	0 (0.0%)	1 (0.6%)	6 (3.3%)	49 (27.1%)	125 (69.1%)
It is important to protect rare natural areas. ( $n=181$ , $\bar{x}=4.7$ )	0 (0.0%)	2 (1.1%)	5 (2.8%)	48 (26.5%)	126 (69.6%)
It is important to protect natural areas for human use. ( $n=182$ , $\bar{x}=4.0$ )	2 (1.1%)	9 (4.9%)	30 (16.5%)	81 (44.5%)	60 (33.0%)
It is important to protect natural areas in urban regions. ( $n=181$ , $\bar{x}=4.4$ )	0 (0.0%)	1 (0.6%)	11 (6.1%)	76 (42.0%)	93 (51.4%)
It is important to protect natural areas that are not intended for human use. ( $n=179$ , $\bar{x}=4.4$ )	3 (1.7%)	4 (2.2%)	14 (7.8%)	57 (31.8%)	101 (56.4%)

**4. How do you feel about the use of the following management practices in natural areas? (Check one box for each statement)**

	<b>Very Negative</b>	<b>Negative</b>	<b>Neutral</b>	<b>Positive</b>	<b>Very Positive</b>
Removal of non-native plants and trees. ( $n=182$ , $\bar{x}=3.7$ )	6 (3.3%)	9 (4.9%)	56 (30.8%)	76 (41.8%)	35 (19.2%)
Cutting trees to create openings in the forest. ( $n=182$ , $\bar{x}=3.1$ )	11 (6.0%)	41 (22.5%)	67 (36.8%)	52 (28.6%)	11 (6.0%)
Mowing of bushes and small trees. ( $n=182$ , $\bar{x}=2.9$ )	15 (8.2%)	36 (19.8%)	86 (47.3%)	38 (20.9%)	7 (3.8%)

	Very Negative	Negative	Neutral	Positive	Very Positive
Controlled burns (low-intensity fire). ( $n=182$ , $\bar{x}=3.6$ )	6 (3.3%)	10 (5.5%)	68 (37.4%)	72 (39.6%)	26 (14.3%)
Closing trails near environmentally sensitive areas. ( $n=182$ , $\bar{x}=3.9$ )	7 (3.8%)	14 (7.7%)	27 (14.8%)	78 (42.9%)	56 (30.8%)

### **ALBANY PINE BUSH PRESERVE**

**5. Which of the following best applies to you? (Check only one) ( $n=179$ )**

I ☐ have visited the Albany Pine Bush Preserve. **93 (52.0%)**  
(Continue to Question 6)

I ☐ have heard of the Albany Pine Bush Preserve, but never visited it. **83 (46.4%)**  
(Skip to Question 13)

I ☐ have never heard of the Albany Pine Bush Preserve. **3 (1.7%)**  
(Skip to Question 18)

**6. How many times have you visited the Albany Pine Bush Preserve in the last 12 months? (Check only one) ( $n=93$ )**

- |   |  |
|---|--|
| <input type="checkbox"/> None <b>40 (43.0%)</b> | <input type="checkbox"/> 13-24 <b>2 (2.2%)</b> |
| <input type="checkbox"/> 1-5 <b>40 (43.0%)</b>  | <input type="checkbox"/> 25-51 <b>2 (2.2%)</b> |
| <input type="checkbox"/> 6-12 <b>8 (8.6%)</b>   | <input type="checkbox"/> 52+ <b>1 (1.1%)</b>   |

**7. What types of self-led activities have you done when visiting the Albany Pine Bush Preserve? (Check all that apply) ( $n=92$ )**

- ☐ Hike/walk **80 (87.0%)**
- ☐ Run **1 (1.1%)**
- ☐ Bike **6 (6.5%)**
- ☐ Animal watching (e.g. birds, mammals, butterflies) **35 (38.0%)**
- ☐ Other \_\_\_\_\_ **20 (21.7%)**

**8. What types of Albany Pine Bush-directed programs have you done when visiting the Albany Pine Bush Preserve? (Check all that apply) (n= 89)**

- ☐ Science Lecture Series **7 (7.9%)**
- ☐ Citizen Science **5 (5.6%)**
- ☐ Animal-Related (e.g. turtles, owls, coyotes, etc.) **11 (12.4%)**
- ☐ Staff-led hikes **12 (13.5%)**
- ☐ Child/youth programming **14 (15.7%)**
- ☐ None **60 (67.4%)**

**9. How strongly do you agree or disagree with the following statements? (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
The Albany Pine Bush Preserve means a great deal to me. (n=92, $\bar{x}$ =4.0)	1 (1.1%)	1 (1.1%)	20 (21.7%)	42 (45.7%)	28 (30.4%)
Visiting the Albany Pine Bush Preserve says a lot about who I am. (n=91, $\bar{x}$ =3.1)	9 (9.9%)	13 (14.3%)	35 (38.5%)	27 (29.7%)	7 (7.7%)
I feel I can really be myself in the Albany Pine Bush Preserve. (n=91, $\bar{x}$ =3.2)	6 (6.6%)	9 (9.9%)	43 (47.3%)	26 (28.6%)	7 (7.7%)
The Albany Pine Bush Preserve is the best place for what I like to do. (n=91, $\bar{x}$ =2.7)	12 (13.2%)	20 (22.0%)	47 (51.6%)	8 (8.8%)	4 (4.4%)
I get more satisfaction out of visiting the Albany Pine Bush Preserve than most other natural areas. (n=92, $\bar{x}$ =2.6)	13 (6.9%)	25 (27.2%)	45 (48.9%)	5 (5.4%)	4 (4.3%)
I wouldn't substitute any other area for doing the types of things I do at the Albany Pine Bush Preserve. (n=92, $\bar{x}$ =2.5)	18 (19.6%)	28 (30.4%)	36 (39.1%)	6 (6.5%)	4 (4.3%)

**10. What does the Albany Pine Bush Preserve mean to you? (Check all that apply) (n=90)**

- ☐ It is where I recreate (e.g. run, bike, walk) **48 (53.3%)**
- ☐ It is where I go to relax **34 (37.8%)**
- ☐ It is where I socialize with people (e.g. friends, children, family) **11 (12.2%)**
- ☐ It is where I go to learn (Discovery Center, programs, etc.) **29 (32.2%)**
- ☐ Other \_\_\_\_\_ **32 (35.6%)**

**11. What do you value most about the Albany Pine Bush Preserve? (Check only one) (n=100)**

- ☐ Trails **46 (46.0%)**
- ☐ Discovery Center **14 (14.0%)**
- ☐ Wildlife **33 (33.3%)**
- ☐ Ecosystem **36 (36.0%)**
- ☐ Programs **5 (5.0%)**
- ☐ Proximity **21 (21.0%)**
- ☐ Aesthetic/Views **17 (17.0%)**
- ☐ Other \_\_\_\_\_ **6 (6.0%)**

**12. In each row, circle the number that best reflects how you feel while visiting the Albany Pine Bush Preserve.**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Bored</b> (n=96, $\bar{x}=4.1$ )	2 (2.1%)	3 (3.1%)	14 (14.6%)	39 (40.6%)	38 (39.6%)	<b>Interested</b>
<b>Tense</b> (n=96, $\bar{x}=4.0$ )	7 (7.3%)	4 (4.2%)	11 (11.5%)	30 (31.3%)	44 (45.8%)	<b>Relaxed</b>
<b>Sad</b> (n=95, $\bar{x}=3.9$ )	7 (7.4%)	4 (4.2%)	13 (13.7%)	38 (40.0%)	33 (34.7%)	<b>Happy</b>
<b>Agitated</b> (n=97, $\bar{x}=4.0$ )	7 (7.2%)	4 (4.1%)	10 (10.3%)	34 (35.1%)	42 (43.3%)	<b>Calm</b>

**13. Please indicate whether you agree or disagree with each statement about the Albany Pine Bush Preserve. (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I am fond of the Albany Pine Bush Preserve. ( $n=178$ , $\bar{x}=4.3$ )	4 (2.2%)	0 (0.0%)	59 (33.1%)	0 (0.0%)	115 (64.6%)
I have strong, positive feelings for the Albany Pine Bush Preserve. ( $n=180$ , $\bar{x}=4.2$ )	3 (1.7%)	3 (1.7%)	65 (36.1%)	1 (0.6%)	108 (60.0%)
It is important that the Albany Pine Bush Preserve remain a protected preserve. ( $n=183$ , $\bar{x}=4.9$ )	0 (0.0%)	1 (0.5%)	11 (5.9%)	0 (0.0%)	171 (93.4%)
I feel a personal responsibility to support management practices that promote habitat at the Albany Pine Bush preserve. ( $n=182$ , $\bar{x}=3.9$ )	5 (2.7%)	15 (8.2%)	71 (39.0%)	1 (0.5%)	90 (49.5%)
I feel a personal responsibility to support the Albany Pine Bush Preserve. ( $n=181$ , $\bar{x}=3.6$ )	8 (4.4%)	19 (10.5%)	82 (45.3%)	0 (0.0%)	72 (39.8%)

**14. How much risk does each of the following pose to the Albany Pine Bush Preserve?**  
(Check one box for each statement)

Means, percentages, and n's were calculated only for meaningful responses (None-Very High).

	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>	<b>Don't Know</b>
Residential development ( $n=142$ , $\bar{x}=3.7$ )	26 (22.4%)	3 (2.6%)	5 (4.3%)	28 (24.1%)	54 (46.6%)	26 (14.2%)*

	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>	<b>Don't Know</b>
Commercial development ( <i>n</i> =116, $\bar{x}$ = 3.7)	23 (24.7%)	2 (2.2%)	5 (5.4%)	16 (17.2%)	47 (50.5%)	23 (12.5%)*
Lack of financial support ( <i>n</i> =139, $\bar{x}$ = 3.5)	40 (28.8%)	1 (0.7%)	7 (5.0%)	33 (23.7%)	58 (41.7%)	41 (22.7%)*
Lack of use/visitors ( <i>n</i> =160, $\bar{x}$ = 3.2)	40 (25.0%)	11 (6.9%)	27 (16.9%)	46 (28.8%)	36 (22.5%)	40 (21.7%)*
Non-sanctioned use of the preserve ( <i>n</i> =145, $\bar{x}$ = 3.1)	54 (37.2%)	2 (1.4%)	10 (6.9%)	30 (20.7%)	49 (33.8%)	55 (29.9%)*
Extinction of rare plants and animals in the preserve ( <i>n</i> =112, $\bar{x}$ = 3.2)	39 (34.8%)	2 (1.8%)	8 (7.1%)	22 (19.6%)	41 (36.6%)	40 (21.7%)*

\*"Don't know" percentages reflect percentage of all individuals that answered the question.

**15. To the best of your knowledge, please indicate whether the following statements are True or False.**

- The Albany Pine Bush Preserve ecosystem is reliant on frequent disturbances to the land (e.g. fires). (*n*=172)  
☐ True **119 (69.2%)**      ☐ False **53 (30.8%)**
- The Albany Pine Bush Preserve only has land in Albany, NY. (*n*=166)  
☐ True **113 (68.1%)**      ☐ False **53 (31.9%)**
- New York State Law mandates the protection of the Albany Pine Bush Preserve. (*n*=167)  
☐ True **99 (59.3%)**      ☐ False **68 (40.7%)**
- The Albany Pine Bush Preserve is a rare habitat. (*n*=170)  
☐ True **157 (92.4%)**      ☐ False **13 (7.6%)**

- e. The Albany Pine Bush Preserve is nationally recognized. ( $n=162$ )  
☐ True **128 (79.0%)**      ☐ False **34 (21.0%)**
- f. The Albany Pine Bush is unique because of its plants and animals. ( $n=169$ )  
☐ True **158 (93.5%)**      ☐ False **11 (6.5%)**

**16. To the best of your knowledge, what are the goals of the Albany Pine Bush Preserve?**  
*(Check all that apply) (n=179)*

- ☐ Provide green space (natural area) for public use **64 (35.8%)**
- ☐ Protect the Karner Blue Butterfly **154 (86.0%)**
- ☐ Protect the ecosystem **147 (82.1%)**
- ☐ Educate the public **139 (77.7%)**
- ☐ Other \_\_\_\_\_ **9 (5.0%)**
- ☐ I don't know **18 (10.1%)**

**17. To the best of your knowledge, what types of practices does the Albany Pine Bush Preserve use to maintain the health of the preserve?** *(Check all that apply) (n=179)*

- ☐ Removal of non-native trees and plants **90 (50.3%)**
- ☐ Cutting trees to create openings in the forest **63 (35.2%)**
- ☐ Mowing of small trees and shrubs **56 (31.3%)**
- ☐ Controlled burns (low-intensity fire) **126 (70.4%)**
- ☐ Closing trails near environmentally sensitive areas **84 (46.9%)**
- ☐ I don't know **58 (32.4%)**

**PROTECTING NATURE PRESERVES**

*We would like your opinion on activities that can be done to support nature preserves.*

**18. In your opinion, how effective do you believe the following are at supporting nature preserves?** *(Check one box for each statement)*

	Very Ineffective	Slightly Ineffective	Neither	Slightly Effective	Very Effective
Visiting the nature preserve ( $n=178$ , $\bar{x}=4.3$ )	3 (1.7%)	1 (0.6%)	28 (15.7%)	63 (35.4%)	83 (46.6%)



	<b>Very Ineffective</b>	<b>Slightly Ineffective</b>	<b>Neither</b>	<b>Slightly Effective</b>	<b>Very Effective</b>
Attending programs at the nature preserve ( $n=176$ , $\bar{x}=4.2$ )	2 (1.1 %)	0 (0.0%)	28 (15.9%)	80 (45.5%)	66 (37.5%)
Donating money in support of the nature preserve ( $n=178$ , $\bar{x}=4.4$ )	2 (1.1%)	1 (0.6%)	26 (14.6%)	52 (29.2%)	97 (54.5%)
Volunteering time at the nature preserve ( $n=176$ , $\bar{x}=4.14$ )	2 (1.1%)	2 (1.1%)	37 (21.0%)	70 (39.8%)	65 (36.9%)
Writing letters of support to newspapers, local representatives, or preserve staff ( $n=177$ , $\bar{x}=4.0$ )	3 (1.7%)	7 (4.0%)	39 (22.0%)	68 (38.4%)	60 (33.9%)
Talking positively about the nature preserve ( $n=180$ , $\bar{x}=4.2$ )	4 (2.2%)	2 (1.1%)	21 (11.7%)	79 (43.9%)	74 (41.1%)

**19. In the next 12 months how likely are you to do each of the following activities?** (Check one box for each statement)

	<b>Extremely Unlikely</b>	<b>Unlikely</b>	<b>Neutral</b>	<b>Likely</b>	<b>Extremely Likely</b>
Visit the Albany Pine Bush Preserve ( $n=182$ , $\bar{x}=3.0$ )	24 (13.2%)	50 (27.5%)	32 (17.6%)	50 (27.5%)	26 (14.3%)
Attend an Albany Pine Bush Preserve program ( $n=182$ , $\bar{x}=2.4$ )	36 (19.8%)	63 (34.6%)	57 (31.3%)	23 (12.6%)	3 (1.6%)
Donate money in support of the Albany Pine Bush Preserve ( $n=182$ , $\bar{x}=2.5$ )	41 (22.5%)	52 (28.6%)	57 (31.3%)	28 (15.4%)	4 (2.2%)
Volunteer time at the Albany Pine Bush Preserve ( $n=182$ , $\bar{x}=1.9$ )	58 (23.4%)	79 (41.6%)	33 (23.6%)	3 (8.2%)	0 (0%)

	<b>Extremely Unlikely</b>	<b>Unlikely</b>	<b>Neutral</b>	<b>Likely</b>	<b>Extremely Likely</b>
Oppose cutting trees to create openings in the Albany Pine Bush Preserve ( $n=173$ , $\bar{x}=2.4$ )	49 (28.3%)	39 (22.5%)	55 (31.8%)	24 (13.9%)	6 (3.5%)
Oppose the use of controlled burns (low-intensity fires) to promote plant and animal diversity at the Albany Pine Bush Preserve ( $n=172$ , $\bar{x}=2.0$ )	68 (39.5%)	50 (29.1%)	38 (22.1%)	12 (7.0%)	4 (2.3%)
Write letters of support for the Albany Pine Bush Preserve to newspapers, local representatives, or Albany Pine Bush Preserve staff ( $n=173$ , $\bar{x}=2.1$ )	56 (32.4%)	57 (32.9%)	45 (26.0%)	9 (5.2%)	6 (3.5%)
Oppose the mowing of small trees and shrubs at the Albany Pine Bush Preserve ( $n=172$ , $\bar{x}=2.3$ )	52 (30.2%)	49 (28.5%)	50 (29.1%)	15 (8.7%)	6 (3.5%)
Oppose the closure of trails that protect sensitive habitat in the Albany Pine Bush Preserve ( $n=171$ , $\bar{x}=2.2$ )	55 (32.2%)	58 (33.9%)	33 (19.3%)	14 (8.2%)	11 (6.4%)
Oppose the removal of non-native trees and plants to promote plant and animal diversity at the Albany Pine Bush Preserve ( $n=171$ , $\bar{x}=2.1$ )	62 (36.3%)	50 (29.2%)	40 (23.4%)	14 (8.2%)	5 (2.9%)
Talk positively about the Albany Pine Bush Preserve to friends, neighbors, and family members ( $n=173$ , $\bar{x}=3.4$ )	25 (14.5%)	13 (7.5%)	34 (19.7%)	67 (38.7%)	34 (19.7%)

**20. How strongly do you agree or disagree with the following statements? (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I am a supporter of the Albany Pine Bush Preserve. ( $n=174$ , $\bar{x}=3.4$ )	11 (6.3%)	11 (6.3%)	69 (39.7%)	64 (36.8%)	19 (10.9%)
I spend a lot of my time in natural settings (woods, ocean, mountains, lake, desert). ( $n=174$ , $\bar{x}=3.5$ )	9 (5.2%)	28 (16.1%)	41 (23.6%)	64 (36.8%)	32 (18.4%)
I think of myself as a part of nature not separate from it. ( $n=172$ , $\bar{x}=4.0$ )	7 (4.1%)	7 (4.1%)	34 (19.8%)	68 (39.5%)	56 (32.6%)
Engaging in environmental behaviors is important to me. ( $n=171$ , $\bar{x}=4.0$ )	2 (1.2%)	9 (5.3%)	32 (18.7%)	77 (45.0%)	51 (29.8%)
If I had enough time and money, I would definitely devote some of it to environmental causes. ( $n=174$ , $\bar{x}=3.8$ )	7 (4.0%)	16 (9.2%)	31 (17.8%)	71 (40.8%)	49 (28.2%)
I would feel that an important part of my life would be missing if I was not able to get out and enjoy nature from time to time. ( $n=175$ , $\bar{x}=4.3$ )	4 (2.3%)	3 (1.7%)	14 (8.0%)	64 (36.6%)	90 (51.4%)
Plants and animals have as much right as humans to exist. ( $n=174$ , $\bar{x}=4.1$ )	11 (6.3%)	7 (4.0%)	16 (9.2%)	55 (31.6%)	85 (48.9%)
I value the existence of endangered species. ( $n=175$ , $\bar{x}=4.5$ )	0 (0.0%)	0 (0.0%)	12 (6.9%)	64 (36.6%)	99 (56.6%)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is not much that any one individual can do about the environment. ( $n=174$ , $\bar{x}=1.2$ )	45 (25.9%)	79 (45.4%)	30 (17.2%)	13 (7.4%)	7 (4.0%)
The conservation efforts of one person are useless as long as other people refuse to conserve. ( $n=174$ , $\bar{x}=1.3$ )	43 (24.7%)	74 (42.5%)	23 (13.2%)	26 (14.9%)	8 (4.6%)

### **BACKGROUND INFORMATION**

**21. Do you consider yourself an environmentalist?** ( $n=162$ )

Yes, Definitely **43 (26.5%)**      No **32 (19.8%)**

Yes, Somewhat **87 (53.7%)**

**22. In what year were you born?**  $n=178$     $\bar{x}=1955$     $\bar{\sigma}=13.1$       Range 1918-1991

**23. How long have you lived in New York's Capital District?** \_\_\_\_\_years

- $n=182$     $\bar{x}=47.7$  years    $\bar{\sigma}=19.3$       Range: 3-99 years

**24. Are you currently a member of the Friends of the Pine Bush?** ( $n=185$ )

Yes ☐ **2 (1.1%)**      No ☐ **183 (98.9%)**

**25. Are you currently a member of Save the Pine Bush?** ( $n=186$ )

☐ Yes   **3 (1.6%)**      ☐ No   **183 (97.3%)**

**26. Do you have children?** ( $n=182$ )

☐ Yes **132 (72.5%)**      ☐ No   **50 (27.5%)**

**27. How old are your children?** (Check all that apply) ( $n=132$ )

- |  |  |
|--|--|
| <input type="checkbox"/> 0-2 <b>3 (2.3%)</b> | <input type="checkbox"/> 10-14 <b>13 (9.8%)</b>  |
| <input type="checkbox"/> 3-5 <b>2 (1.5%)</b> | <input type="checkbox"/> 15-18 <b>20 (15.2%)</b> |
| <input type="checkbox"/> 6-9 <b>6 (4.5%)</b> |  |

**28. What is the highest level of education you have completed? (n=180)**

Less than high school diploma	High school diploma	Some college	2-year College Degree	4-year College Degree	Graduate/ Professional degree
0 (0.0%)	22 (12.2%)	16 (8.9%)	18 (10.0%)	54 (30.0%)	70 (38.9%)

**30. What was the total income of your household before taxes last year? (151)**

\$0-19,999	\$20,000-39,999	\$40,000-59,999	\$60,000-79,999	\$80,000-99,999	\$100,000+
1 (0.7%)	12 (7.9%)	26 (17.2%)	30 (19.9%)	22 (14.6%)	60 (39.7%)

**31. What is your Race/Ethnicity? (Check all that apply) (n=177)**White **169 (98.9%)**Asian or Pacific Islander **3 (1.6%)**Black or African-American **2 (1.1%)**Native American Indian **3 (1.7%)**Hispanic or Latino **0 (0.0%)**Other \_\_\_\_\_ **5 (2.7%)****White vs. Non-White (n=177)**White **168 (93.9%)** Mixed (2+ races) **3 (1.7%)** Non-White **8 (4.5%)****32. What is your Gender? (n=181)**Male **104 (57.5%)** Female **77 (42.5%)****33. What municipality (e.g. city, town, hamlet, village) do you live in? (Web Survey Only)****County (n=186)**

Albany	Schenectady	Saratoga	Rensselaer
67 (36.0%)	71 (38.2%)	15 (8.1%)	33 (17.7%)

**Distance from Preserve ( $n=186$ )**

Within 5 miles	Between 5 and 10 miles
117 (62.9%)	69 (37.1%)

**Thank you for your time and effort!**

To return this questionnaire, simply seal it with the white removable seal, and drop it in the mail (return postage has been paid).

You can also use the space below to offer any additional comments you would like to make about the Albany Pine Bush Preserve generally.

## Community Views of Nature Preserves



Cornell University  
Department of Natural Resources  
Human Dimensions Research Unit



*Descriptive Analysis: Web Survey Respondents*

**Understanding the Public's Views of Nature Preserves in  
New York's Capital District**

Research conducted by the  
Human Dimensions Research Unit  
Department of Natural Resources  
Cornell University  
in cooperation with the  
Albany Pine Bush Preserve

We would like to know about the public's views of nature preserves in New York's Capital District. Nature preserves are natural areas that are managed to protect plants, animals, or physical features of the land. This information will be used to help improve the Albany Pine Bush Preserve's future conservation-related education, communication, and outreach.

Please complete this questionnaire as soon as you can, seal it with the white re-sealable label provided, and drop it in any mailbox; return postage has been paid. We are interested in learning about your experiences and opinions. Your participation in this survey is voluntary, but we sincerely hope you will take just a few minutes to answer our questions. Your identity will be kept confidential and the information you give us will never be associated with your name.

**THANK YOU FOR YOUR HELP!**



## VIEWS ON NATURAL AREAS

*Natural areas are spaces without much human development that consist of grass, trees, or other vegetation.*

**IMAGE A**



**22. Looking at Image A, please indicate whether you agree or disagree with each statement.**  
*(Check one box for each row)*

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I find this space appealing to look at. ( $n=246$ , $\bar{x}=4.6$ )	4 (1.6%)	0 (0.0%)	6 (2.4%)	62 (25.2%)	174 (70.7%)
I find this space to be very natural. ( $n=243$ , $\bar{x}=4.3$ )	3 (1.2%)	5 (2.1%)	18 (7.4%)	111 (45.7%)	106 (43.6%)
I am very likely to use this space for recreation. ( $n=246$ , $\bar{x}=4.3$ )	2 (0.8%)	5 (2.0%)	25 (10.2%)	93 (37.8%)	121 (49.2%)
I think this space looks healthy. ( $n=246$ , $\bar{x}=4.4$ )	2 (0.8%)	4 (1.6%)	3622 (8.9%)	96 (39.0%)	122 (49.6%)

**IMAGE B**



**23. Looking at Image B, please indicate whether you agree or disagree with each statement.**  
*(Check one box for each row)*

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I find this space appealing to look at. ( $n=236$ , $\bar{x}=4.3$ )	2 (0.8%)	3 (1.3%)	26 (11.0%)	103 (43.6%)	102 (43.2%)
I find this space to be very natural. ( $n=236$ , $\bar{x}=4.1$ )	3 (1.3%)	9 (3.8%)	32 (13.6%)	109 (46.2%)	83 (35.2%)
I am very likely to use this space for recreation. ( $n=236$ , $\bar{x}=4.0$ )	2 (0.8%)	12 (5.1%)	42 (17.8%)	99 (41.9%)	81 (34.3%)
I think this space looks healthy. ( $n=235$ , $\bar{x}=4.2$ )	2 (0.9%)	4 (1.7%)	35 (14.9%)	106 (45.1%)	88 (37.4%)

**24. Please indicate how strongly you agree or disagree with each statement about protecting natural areas. (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
It is important to protect natural areas that support rare plants and animals. ( $n=225$ , $\bar{x}=4.9$ )	0 (0.0%)	0 (0.0%)	0 (0.0%)	26 (11.6%)	199 (88.4%)
It is important to protect rare natural areas. ( $n=225$ , $\bar{x}=4.9$ )	0 (0.0%)	0 (0.0%)	1 (0.4%)	24 (10.7%)	200 (88.9%)
It is important to protect natural areas for human use. ( $n=226$ , $\bar{x}=4.42$ )	1 (0.4%)	3 (1.3%)	29 (12.8%)	74 (32.7%)	119 (52.7%)
It is important to protect natural areas in urban regions. ( $n=226$ , $\bar{x}=4.8$ )	0 (0.0%)	0 (0.0%)	3 (1.3%)	51 (22.6%)	172 (76.1%)
It is important to protect natural areas that are not intended for human use. ( $n=226$ , $\bar{x}=4.7$ )	1 (0.4%)	0 (0.0%)	8 (3.5%)	46 (20.4%)	171 (75.7%)

**25. How do you feel about the use of the following management practices in natural areas? (Check one box for each statement)**

	<b>Very Negative</b>	<b>Negative</b>	<b>Neutral</b>	<b>Positive</b>	<b>Very Positive</b>
Removal of non-native plants and trees. ( $n=224$ , $\bar{x}=4.0$ )	4 (1.8%)	10 (4.5%)	49 (21.9%)	88 (39.3%)	73 (32.6%)
Cutting trees to create openings in the forest. ( $n=223$ , $\bar{x}=3.3$ )	8 (3.6%)	29 (13.0%)	98 (43.9%)	58 (26.0%)	30 (13.5%)
Mowing of bushes and small trees. ( $n=226$ , $\bar{x}=3.2$ )	8 (3.5%)	48 (21.2%)	95 (42.0%)	47 (20.8%)	28 (12.4%)

	Very Negative	Negative	Neutral	Positive	Very Positive
Controlled burns (low-intensity fire). ( $n=226$ , $\bar{x}=4.0$ .)	2 (0.9%)	6 (2.7%)	48 (21.2%)	100 (44.2%)	70 (31.0%)
Closing trails near environmentally sensitive areas. ( $n=224$ , $\bar{x}=4.2$ )	4 (1.8%)	8 (3.6%)	32 (14.3%)	81 (36.2%)	99 (44.2%)

### **ALBANY PINE BUSH PRESERVE**

**26. Which of the following best applies to you? (Check only one) ( $n=225$ )**

- ☐ I have visited the Albany Pine Bush Preserve. **223 (99.1%)**  
(Continue to Question 6)
- ☐ I have heard of the Albany Pine Bush Preserve, but never visited it. **2 (0.9%)**  
(Skip to Question 13)
- ☐ I have never heard of the Albany Pine Bush Preserve. **0 (0.0%)**  
(Skip to Question 18)

**27. How many times have you visited the Albany Pine Bush Preserve in the last 12 months? (Check only one) ( $n=219$ )**

- ☐ None **31 (13.9%)**      ☐ 13-24 **11 (4.9%)**
- ☐ 1-5 **125 (56.1%)**      ☐ 25-51 **7 (3.1%)**
- ☐ 6-12 **35 (15.7%)**      ☐ 52+ **14 (6.3%)**

**28. What types of self-led activities have you done when visiting the Albany Pine Bush Preserve? (Check all that apply) ( $n=310$ )**

- ☐ Hike/walk **194 (88.6%)**
- ☐ Run **13 (5.9%)**
- ☐ Bike **14 (6.4%)**
- ☐ Animal watching (e.g. birds, mammals, butterflies) **112 (51.1%)**
- ☐ Other \_\_\_\_\_ **58 (26.5%)**

**29. What types of Albany Pine Bush-directed programs have you done when visiting the Albany Pine Bush Preserve? (Check all that apply) (n= 221)**

- ☐ Science Lecture Series **63 (28.5%)**
- ☐ Citizen Science **22 (10.0%)**
- ☐ Animal-Related (e.g. turtles, owls, coyotes, etc.) **92 (41.6%)**
- ☐ Staff-led hikes **99 (44.8%)**
- ☐ Child/youth programming **96 (43.4%)**
- ☐ None **30 (13.6%)**

**30. How strongly do you agree or disagree with the following statements? (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
The Albany Pine Bush Preserve means a great deal to me. (n=221, $\bar{x}=4.3$ )	0 (0.0%)	2 (0.9%)	27 (12.2%)	91 (41.2%)	101 (45.7%)
Visiting the Albany Pine Bush Preserve says a lot about who I am. (n=221, $\bar{x}=3.7$ )	3 (1.4%)	17 (7.7%)	70 (31.7%)	94 (42.5%)	37 (16.7%)
I feel I can really be myself in the Albany Pine Bush Preserve. (n=220, $\bar{x}=3.7$ )	0 (0.0%)	12 (5.5%)	80 (36.4%)	86 (39.1%)	42 (19.1%)
The Albany Pine Bush Preserve is the best place for what I like to do. (n=219, $\bar{x}=3.21$ )	3 (1.4%)	39 (17.8%)	100 (45.7%)	64 (29.2%)	13 (5.9%)
I get more satisfaction out of visiting the Albany Pine Bush Preserve than most other natural areas. (n=220, $\bar{x}=3.0$ )	7 (3.2%)	50 (22.7%)	111 (50.5%)	40 (18.2%)	12 (5.5%)
I wouldn't substitute any other area for doing the types of things I do at the Albany Pine Bush Preserve. (n=218, $\bar{x}=2.9$ )	17 (7.8%)	53 (24.3%)	102 (46.8%)	34 (15.6%)	12 (5.5%)

**31. What does the Albany Pine Bush Preserve mean to you? (*Check all that apply*) ( $n=218$ )**

- ☐ It is where I recreate (e.g. run, bike, walk) **113 (51.8%)**
- ☐ It is where I go to relax **100 (45.9%)**
- ☐ It is where I socialize with people (e.g. friends, children, family) **58 (26.6%)**
- ☐ It is where I go to learn (Discovery Center, programs, etc.) **148 (67.9%)**
- ☐ Other \_\_\_\_\_ **38 (17.4%)**

**32. What do you value most about the Albany Pine Bush Preserve? (*Check only one*) ( $n=214$ )**

- ☐ Trails **42 (19.6%)**
- ☐ Discovery Center **35 (16.4%)**
- ☐ Wildlife **27 (12.6%)**
- ☐ Ecosystem **63 (29.4%)**
- ☐ Programs **44 (20.6%)**
- ☐ Proximity **1 (0.5%)**
- ☐ Aesthetic/Views **6 (2.4%)**
- ☐ Other \_\_\_\_\_ **3 (1.4%)**

**33. In each row, circle the number that best reflects how you feel while visiting the Albany Pine Bush Preserve.**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Bored</b> ( $n=209$ , $\bar{x}=4.3$ )	4 (1.9%)	2 (1.0%)	21 (10.0%)	76 (36.4%)	106 (50.7%)	<b>Interested</b>
<b>Tense</b> ( $n=197$ , $\bar{x}=4.3$ )	7 (3.6%)	4 (2.0%)	13 (6.6%)	68 (34.5%)	105 (53.3%)	<b>Relaxed</b>
<b>Sad</b> ( $n=194$ , $\bar{x}=4.2$ )	13 (6.7%)	4 (2.1%)	16 (8.2%)	60 (30.9%)	101 (52.1%)	<b>Happy</b>
<b>Agitated</b> ( $n=183$ , $\bar{x}=4.2$ )	16 (8.7%)	2 (1.1%)	12 (6.6%)	54 (29.5%)	99 (54.1%)	<b>Calm</b>



**34. Please indicate whether you agree or disagree with each statement about the Albany Pine Bush Preserve. (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I am fond of the Albany Pine Bush Preserve. ( <i>n</i> =217, $\bar{x}$ = 4.6)	0 (0.0%)	2 (0.9%)	7 (32%)	0 (0.0%)	208 (95.9%)
I have strong, positive feelings for the Albany Pine Bush Preserve. ( <i>n</i> =217, $\bar{x}$ = 4.5)	0 (0.0%)	2 (0.9%)	23 (10.6%)	0 (0.0%)	192 (88.5%)
It is important that the Albany Pine Bush Preserve remain a protected preserve. ( <i>n</i> =216, $\bar{x}$ = 4.9)	0 (0.0%)	0 (0.0%)	2 (0.9%)	0 (0.0%)	214 (99.1%)
I feel a personal responsibility to support management practices that promote habitat at the Albany Pine Bush preserve. ( <i>n</i> =217, $\bar{x}$ = 4.2)	0 (0.0%)	6 (2.8%)	56 (25.8%)	0 (0.0%)	155 (71.4%)
I feel a personal responsibility to support the Albany Pine Bush Preserve. ( <i>n</i> =217, $\bar{x}$ = 4.0)	0 (0.0%)	12 (5.5%)	61 (28.1%)	0 (0.0%)	155 (71.4%)

**35. How much risk does each of the following pose to the Albany Pine Bush Preserve?**  
(Check one box for each statement)

Means, percentages, and n's were calculated only for meaningful responses (None-Very High).

	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>	<b>Don't Know</b>
Residential development ( <i>n</i> =157, $\bar{x}$ = 3.8)	23 (20.4%)	2 (1.8%)	5 (4.4%)	18 (15.9%)	65 (57.5%)	44 (16.1%)*

	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>	<b>Don't Know</b>
Commercial development ( $n=176$ , $\bar{x}=3.7$ )	19 (22.9%)	1 (1.2%)	5 (6.0%)	12 (14.5%)	46 (55.4%)	40 (14.8%)*
Lack of financial support ( $n=179$ , $\bar{x}=3.6$ )	29 (23.6%)	2 (1.6%)	4 (3.3%)	22 (17.9%)	66 (53.7%)	56 (20.6%)*
Lack of use/visitors ( $n=172$ , $\bar{x}=3.2$ )	40 (23.%)	3 (1.7%)	37 (21.5%)	53 (30.8%)	39 (22.7%)	65 (23.8%)*
Non-sanctioned use of the preserve ( $n=145$ , $\bar{x}=3.1$ )	53 (36.6%)	0 (0.0%)	15 (10.3%)	36 (24.8%)	41 (28.3%)	82 (30.0%)*
Extinction of rare plants and animals in the preserve ( $n=176$ , $\bar{x}=3.4$ )	34 (28.1%)	0 (0.0%)	6 (5.0%)	30 (24.8%)	51 (42.1%)	55 (20.1%)*

\*"Don't know" percentages reflect percentage of all individuals that answered the question.

**36. To the best of your knowledge, please indicate whether the following statements are True or False.**

- The Albany Pine Bush Preserve ecosystem is reliant on frequent disturbances to the land (e.g. fires). ( $n=199$ )  
☐ True **168 (84.4%)**      ☐ False **31 (15.6%)**
- The Albany Pine Bush Preserve only has land in Albany, NY. ( $n=197$ )  
☐ True **128 (65.0%)**      ☐ False **69 (35.0%)**
- New York State Law mandates the protection of the Albany Pine Bush Preserve. ( $n=195$ )  
☐ True **138 (70.8%)**      ☐ False **57 (29.2%)**
- The Albany Pine Bush Preserve is a rare habitat. ( $n=202$ )  
☐ True **198 (98.0%)**      ☐ False **4 (2.0%)**



- e. The Albany Pine Bush Preserve is nationally recognized. ( $n=197$ )  
☐ True **176 (89.3%)**      ☐ False **21 (10.7%)**
- f. The Albany Pine Bush is unique because of its plants and animals. ( $n=201$ )  
☐ True **196 (97.5%)**      ☐ False **5 (2.5%)**

**37. To the best of your knowledge, what are the goals of the Albany Pine Bush Preserve?**  
*(Check all that apply) (n=202)*

- ☐ Provide green space (natural area) for public use **46 (22.8%)**
- ☐ Protect the Karner Blue Butterfly **186 (92.1%)**
- ☐ Protect the ecosystem **189 (93.6%)**
- ☐ Educate the public **192 (95.0%)**
- ☐ Other \_\_\_\_\_ **11 (5.4%)**
- ☐ I don't know **2 (1.0%)**

**38. To the best of your knowledge, what types of practices does the Albany Pine Bush Preserve use to maintain the health of the preserve? (Check all that apply) (n=202)**

- ☐ Removal of non-native trees and plants **166 (82.2%)**
- ☐ Cutting trees to create openings in the forest **124 (61.4%)**
- ☐ Mowing of small trees and shrubs **107 (53.0%)**
- ☐ Controlled burns (low-intensity fire) **189 (93.6%)**
- ☐ Closing trails near environmentally sensitive areas **163 (80.7%)**
- ☐ I don't know **15 (7.4%)**

**PROTECTING NATURE PRESERVES**

*We would like your opinion on activities that can be done to support nature preserves.*

**39. In your opinion, how effective do you believe the following are at supporting nature preserves? (Check one box for each statement)**

	<b>Very Ineffective</b>	<b>Slightly Ineffective</b>	<b>Neither</b>	<b>Slightly Effective</b>	<b>Very Effective</b>
Visiting the nature preserve ( $n=195$ , $\bar{x}=4.5$ )	1 (0.5%)	2 (1.0%)	4 (2.1%)	76 (39.0%)	112 (57.4%)

	<b>Very Ineffective</b>	<b>Slightly Ineffective</b>	<b>Neither</b>	<b>Slightly Effective</b>	<b>Very Effective</b>
Attending programs at the nature preserve ( $n=198$ , $\bar{x}=4.5$ )	1 (0.5%)	0 (0.0%)	6 (3.0%)	78 (39.4%)	113 (57.1%)
Donating money in support of the nature preserve ( $n=196$ , $\bar{x}=4.6$ )	2 (1.0%)	2 (1.0%)	9 (4.6%)	41 (20.9%)	142 (72.4%)
Volunteering time at the nature preserve ( $n=197$ , $\bar{x}=4.6$ )	1 (0.5%)	0 (0.0%)	7 (3.6%)	58 (29.4%)	131 (66.5%)
Writing letters of support to newspapers, local representatives, or preserve staff ( $n=195$ , $\bar{x}=4.4$ )	2 (1.0%)	3 (1.5%)	22 (11.3%)	60 (30.8%)	108 (55.4%)
Talking positively about the nature preserve ( $n=195$ , $\bar{x}=4.5$ )	2 (1.0%)	2 (1.0%)	7 (3.6%)	65 (33.3%)	119 (61.0%)

**40. In the next 12 months how likely are you to do each of the following activities?** (Check one box for each statement)

	<b>Extremely Unlikely</b>	<b>Unlikely</b>	<b>Neutral</b>	<b>Likely</b>	<b>Extremely Likely</b>
Visit the Albany Pine Bush Preserve ( $n=195$ , $\bar{x}=4.4$ )	5 (2.6%)	3 (1.5%)	15 (7.7%)	62 (31.8%)	110 (56.4%)
Attend an Albany Pine Bush Preserve program ( $n=195$ , $\bar{x}=4.0$ )	3 (1.5%)	8 (4.1%)	39 (20.0%)	77 (39.5%)	68 (34.9%)
Donate money in support of the Albany Pine Bush Preserve ( $n=194$ , $\bar{x}=3.1$ )	11 (5.7%)	45 (23.2%)	64 (33.0%)	54 (27.8%)	20 (10.3%)
Volunteer time at the Albany Pine Bush Preserve ( $n=195$ , $\bar{x}=2.6$ )	28 (14.4%)	74 (37.9%)	54 (27.7%)	27 (13.8%)	12 (6.2%)

	<b>Extremely Unlikely</b>	<b>Unlikely</b>	<b>Neutral</b>	<b>Likely</b>	<b>Extremely Likely</b>
Oppose cutting trees to create openings in the Albany Pine Bush Preserve ( $n=192$ , $\bar{x}=2.1$ )	65 (33.9%)	58 (30.2%)	53 (27.6%)	11 (5.7%)	5 (2.6%)
Oppose the use of controlled burns (low-intensity fires) to promote plant and animal diversity at the Albany Pine Bush Preserve ( $n=194$ , $\bar{x}=1.68$ )	105 (54.1%)	64 (33.0%)	21 (10.8%)	1 (0.5%)	3 (1.5%)
Write letters of support for the Albany Pine Bush Preserve to newspapers, local representatives, or Albany Pine Bush Preserve staff ( $n=193$ , $\bar{x}=2.4$ )	35 (18.1%)	79 (40.9%)	50 (25.9%)	23 (11.9%)	6 (3.1%)
Oppose the mowing of small trees and shrubs at the Albany Pine Bush Preserve ( $n=191$ , $\bar{x}=2.0$ )	72 (37.7%)	59 (30.9%)	52 (27.2%)	5 (2.6%)	2 (1.6%)
Oppose the closure of trails that protect sensitive habitat in the Albany Pine Bush Preserve ( $n=193$ , $\bar{x}=1.8$ )	97 (50.3%)	61 (31.6%)	26 (13.5%)	5 (2.6%)	4 (2.1%)
Oppose the removal of non-native trees and plants to promote plant and animal diversity at the Albany Pine Bush Preserve ( $n=192$ , $\bar{x}=1.7$ )	99 (51.6%)	59 (30.7%)	23 (12.0%)	6 (3.1%)	5 (2.6%)
Talk positively about the Albany Pine Bush Preserve to friends, neighbors, and family members ( $n=192$ , $\bar{x}=4.4$ )	1 (0.5%)	2 (1.0%)	20 (10.4%)	62 (32.3%)	107 (55.7%)

**41. How strongly do you agree or disagree with the following statements? (Check one box for each statement)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I am a supporter of the Albany Pine Bush Preserve. ( $n=194$ , $\bar{x}=4.2$ )	1 (0.5%)	2 (1.0%)	32 (16.5%)	75 (38.7%)	84 (43.3%)
I spend a lot of my time in natural settings (woods, ocean, mountains, lake, desert). ( $n=193$ , $\bar{x}=4.1$ )	3 (1.6%)	10 (5.2%)	33 (17.1%)	70 (36.3%)	77 (39.9%)
I think of myself as a part of nature not separate from it. ( $n=192$ , $\bar{x}=4.2$ )	5 (2.6%)	0 (0.0%)	22 (11.5%)	90 (46.9%)	75 (39.1%)
Engaging in environmental behaviors is important to me. ( $n=192$ , $\bar{x}=4.4$ )	2 (1.0%)	0 (0.0%)	15 (7.8%)	79 (41.1%)	96 (50.0%)
If I had enough time and money, I would definitely devote some of it to environmental causes. ( $n=193$ , $\bar{x}=4.4$ )	1 (0.5%)	4 (2.1%)	10 (5.2%)	75 (38.9%)	103 (53.4%)
I would feel that an important part of my life would be missing if I was not able to get out and enjoy nature from time to time. ( $n=191$ , $\bar{x}=4.7$ )	0 (0.0%)	3 (1.6%)	3 (1.6%)	44 (23.0%)	141 (73.8%)
Plants and animals have as much right as humans to exist. ( $n=192$ , $\bar{x}=4.5$ )	3 (1.6%)	2 (1.0%)	12 (6.3%)	50 (26.0%)	125 (65.1%)
I value the existence of endangered species. ( $n=191$ , $\bar{x}=4.7$ )	0 (0.0%)	0 (0.0%)	4 (2.1%)	41 (21.5%)	146 (76.4%)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is not much that any one individual can do about the environment. ( $n=190$ , $\bar{x}=1.0$ )	74 (38.9%)	86 (45.3%)	19 (10.0%)	9 (4.7%)	2 (1.1%)
The conservation efforts of one person are useless as long as other people refuse to conserve. ( $n=190$ , $\bar{x}=1.0$ )	70 (36.8%)	80 (42.1%)	19 (10.0%)	16 (8.4%)	5 (2.6%)

### **BACKGROUND INFORMATION**

**42. Do you consider yourself an environmentalist?** ( $n=194$ )

Yes, Definitely **89 (45.9%)**      No **15 (7.7%)**

Yes, Somewhat **90 (46.4%)**

**29. In what year were you born?**  $n=184$     $\bar{x}=1965.6$     $\bar{\sigma}=14.23$       Range 1926-1997

**30. How long have you lived in New York's Capital District?** \_\_\_\_\_years

- $n=181$     $\bar{x}=28.8$  years    $\bar{\sigma}=18.5$    Range: 1-80 years

**31. Are you currently a member of the Friends of the Pine Bush?** ( $n=189$ )

☐ Yes **31 (16.4%)**      ☐ No **158 (83.6%)**

**32. Are you currently a member of Save the Pine Bush?** ( $n=187$ )

☐ Yes **10 (5.3%)**      ☐ No **177 (94.7%)**

**33. Do you have children?** ( $n=190$ )

☐ Yes **131 (68.9%)**      ☐ No **59 (31.1%)**

**34. How old are your children?** (Check all that apply) ( $n=131$ )

☐ 0-2 **14 (10.7%)**      ☐ 10-14 **33 (25.2%)**

☐ 3-5 **28 (21.4%)**      ☐ 15-18 **27 (20.6%)**

☐ 6-9 **34 (26.0%)**

**35. What is the highest level of education you have completed? (n=189)**

Less than high school diploma	High school diploma	Some college	2-year College Degree	4-year College Degree	Graduate/ Professional degree
1 (0.5%)	4 (2.1%)	14 (7.4%)	22 (11.6%)	49 (25.9%)	99 (52.4%)

**40. What was the total income of your household before taxes last year? (174)**

\$0-19,999	\$20,000-39,999	\$40,000-59,999	\$60,000-79,999	\$80,000-99,999	\$100,000+
4 (2.3%)	19 (10.9%)	29 (16.7%)	18 (10.3%)	34 (19.5%)	70 (40.2%)

**33. What is your Race/Ethnicity? (Check all that apply) (n=184)**White **170 (92.3%)**Asian or Pacific Islander **0 (0.0%)**Black or African-American **3 (1.6%)**Native American Indian **7 (3.8%)**Hispanic or Latino **4 (2.2%)**Other \_\_\_\_\_ **5 (2.0%)****White vs. Non-White (n=184)**White **170 (93.9%)** Mixed (2+ races) **4 (1.6%)** Non-White **7 (2.8%)****34. What is your Gender? (n=185)**Male **53 (28.6%)**Female **132 (71.4%)****33. What municipality (e.g. city, town, hamlet, village) do you live in? (Web Survey Only)****County (n=188)**

Albany	Schenectady	Saratoga	Rensselaer
137 (72.9%)	17 (9.0%)	24 (12.8%)	10 (5.3%)

**Distance from Preserve ( $n=184$ )**

Within 5 miles	Between 5 and 10 miles
124 (66.0%)	64 (34.0%)

**Thank you for your time and effort!**

To return this questionnaire, simply seal it with the white removable seal, and drop it in the mail (return postage has been paid).

You can also use the space below to offer any additional comments you would like to make about the Albany Pine Bush Preserve generally.

## **Appendix G: Non-response Survey and Tests**

### *G.1. Non-response Survey*

**1) First, could you tell me which of the following best applies to you?**

- 1--I have visited the Albany Pine Bush Preserve.
- 2--I have heard of the Albany Pine Bush Preserve, but never visited it.
- 3--I have never heard of the Albany Pine Bush Preserve.

**2) In what year were you born?**

**3) What municipality (e.g. city, town, hamlet, village) do you live in?**

**4) What is the highest level of school you have completed or the highest degree you have received?**

- 0--Less than high school diploma
- 1--High School diploma
- 2--Some college
- 3--2-year college degree
- 4--4-year college degree
- 5--Graduate/ Professional Degree

**5) Please indicate whether you agree or disagree with the following statement about the Albany Pine Bush:**

It is important to protect natural areas that support rare plants and animals.

- 1--Strongly disagree
- 2--Disagree
- 3--Neutral
- 4--Agree
- 5--Strongly Agree

*If never heard of READ:* The Albany Pine Bush Preserve is a 3,200-acre nature preserve just north of Albany, New York with over 18 miles of trails, a variety of wildlife, and an indoor Discovery Center.

**6) In the next 12 months, how likely are you to visit the Albany Pine Bush Preserve?**

- 1--Extremely Unlikely
- 2--Unlikely
- 3--Neutral
- 4--Likely
- 5- Extremely Likely

**7) We are interested in improving our response rate for future studies, could you please tell me a little about why you did not complete the email survey?**

**Record Gender:**   0   Male   1   Female   2   Unknown



*Chi-Square and T-test Analyses were conducted for only survey respondents and non-respondents who lived within 10 miles of the Albany Pine Bush Preserve (APBP)*

*G.2 Chi-Square Analyses Comparing Gender Between Survey Respondents and Non-Respondents*

<b>Gender</b>	<b>Male</b>	<b>Female</b>	<b>p-value for chi-square</b>
Mail Respondents	104 (57.1%)	78 (42.9%)	
Mail Non-response	22 (44.0%)	28 (56.0%)	<b>0.14</b>
Web Respondents	72 (28.1%)	184 (71.9%)	
Web Non-response	12 (24.0%)	38 (76.0%)	<b>&lt;0.001*</b>

\*p<0.05, but no practical difference between the groups

*G.3 Chi-Square Analyses Comparing Distance from the Albany Pine Bush Preserve Between Survey Respondents and Non-Respondents*

<b>Distance from the Albany Pine Bush Preserve</b>	<b>&lt;5 Miles</b>	<b>5-10 Miles</b>	<b>p-value for chi-square</b>
Mail Respondents	117 (64.2%)	65 (35.7%)	
Mail Non-response	28 (60.9%)	18 (39.1%)	<b>0.95</b>
Web Respondents	125 (64.8%)	68 (35.2%)	
Web Non-response	23 (72.0%)	9 (28.0%)	<b>0.99</b>

*G.4 Chi-Square Analyses Comparing Visitorship and Awareness of the Albany Pine Bush Preserve Between Survey Respondents and Non-Respondents*

<b>Visitorship</b>	<b>Visited APBP</b>	<b>Never Visited, but Heard of APBP</b>	<b>Never Visited or Heard of APBP</b>
Respondents	94 (52.2%)	83 (46.1%)	3 (1.7%)
Non-response	25 (50.0%)	21 (42.0%)	4 (8.0%)
p-value for chi-square	<b>0.91</b>	<b>0.72</b>	<b>N/A</b>

*G.5 T-test Analyses of Age and Level of Education Between Mail Survey Respondents and Non-Respondents*

<b>Variable</b>	<b>Mail Respondents</b>	<b>Mail Non-Response</b>	<b>p-value for t-test</b>
Age	61.08 ± 13.14	58.76 ± 17.71	<b>0.41</b>
Education	4.74 ± 1.37	4.18 ± 1.67	<b>0.04*</b>

\*p<0.05, but no practical difference between the groups

*G.5 T-test Analyses of Age and Level of Education Between Web Survey Respondents and Non-Respondents*

<b>Variable</b>	<b>Mail Respondents</b>	<b>Mail Non-Response</b>	<b>p-value for t-test</b>
Age	50.39 ± 14.23	47.56 ± 14.2	<b>0.34</b>
Education	5.17 ± 1.09	4.96 ± 0.97	<b>0.32</b>

## Appendix H: Factor Analysis and Scale Reliability

Table H.1: Summative Scale for Knowledge about the Albany Pine Bush Preserve

To the best of your knowledge, please indicate whether the following statements are True or False.	
The Albany Pine Bush Preserve ecosystem is reliant on frequent disturbances to the land (e.g. fires).	
The Albany Pine Bush Preserve only has land in Albany, NY.	
New York State Law mandates the protection of the Albany Pine Bush Preserve.	
The Albany Pine Bush Preserve is a rare habitat.	
The Albany Pine Bush Preserve is nationally recognized.	
The Albany Pine Bush is unique because of its plants and animals.	
The Albany Pine Bush Preserve ecosystem is reliant on frequent disturbances to the land (e.g. fires).	
The Albany Pine Bush Preserve only has land in Albany, NY.	
New York State Law mandates the protection of the Albany Pine Bush Preserve.	
To the best of your knowledge, what are the goals of the Albany Pine Bush Preserve? (Check all that apply)	
Provide green space (natural area) for public use	
Protect the Karner Blue Butterfly	
Protect the ecosystem	
Educate the public	
To the best of your knowledge, what types of practices does the Albany Pine Bush Preserve use to maintain the health of the preserve? (Check all that apply)	
Removal of non-native trees and plants	
Cutting trees to create openings in the forest	
Mowing of small trees and shrubs	
Controlled burns (low-intensity fire)	
Scale Statistics	$\alpha = 0.78$ $\bar{x} = 10.31, \sigma = 2.45$

*Table H.2: Attitudes towards Management Practices Scale*

<b>How do you feel about the use of the following management practices in natural areas?</b>	<b>Factor Loadings</b>
Removal of non-native plants and trees	<b>0.41</b>
Cutting trees to create openings in the forest	<b>0.90</b>
Mowing of bushes and small trees	<b>0.89</b>
Controlled burns (low-intensity fire)	<b>0.52</b>
Scale Statistics	$\alpha = 0.79$
	$VE^1 = 61.10\%$
	$\bar{x} = 3.52, \sigma = 0.75$

<sup>1</sup>Percent of Variance Explained

*Table H.3: Intention to Oppose the Albany Pine Bush Preserve's Use of Management Practices Scale*

<b>In the next 12 months, how likely are you to do each of the following activities?</b>	<b>Factor Loadings</b>
Oppose cutting trees to create openings in the Albany Pine Bush Preserve	<b>0.86</b>
Oppose the use of controlled burns (low-intensity fires) to promote plant and animal diversity at the Albany Pine Bush Preserve	<b>0.84</b>
Oppose the mowing of small trees and shrubs at the Albany Pine Bush Preserve	<b>0.89</b>
Oppose the removal of non-native trees and plants to promote plant and animal diversity at the Albany Pine Bush Preserve	<b>0.84</b>
Scale Statistics	$\alpha = 0.88$
	$VE^1 = 73.22\%$
	$\bar{x} = 306, \sigma = 0.91$

<sup>1</sup>Percent of Variance Explained

Table H.4: Intention to Support the Albany Pine Bush Preserve Scale

In the next 12 months, how likely are you to do each of the following activities?	Factor Loadings
Visit the Albany Pine Bush Preserve	<b>0.83</b>
Attend an Albany Pine Bush Preserve program	<b>0.86</b>
Donate money in support of the Albany Pine Bush Preserve	<b>0.81</b>
Volunteer time at the Albany Pine Bush Preserve	<b>0.76</b>
Talk positively about the Albany Pine Bush Preserve to friends, neighbors, and family members	<b>0.76</b>
Write letters of support for the Albany Pine Bush Preserve to newspapers, local representatives, or Albany Pine Bush Preserve staff	<b>0.64</b>
Scale Statistics	$\alpha = 0.870$
	$VE^1 = 60.84\%$
	$\bar{x} = 306, \sigma = 0.91$

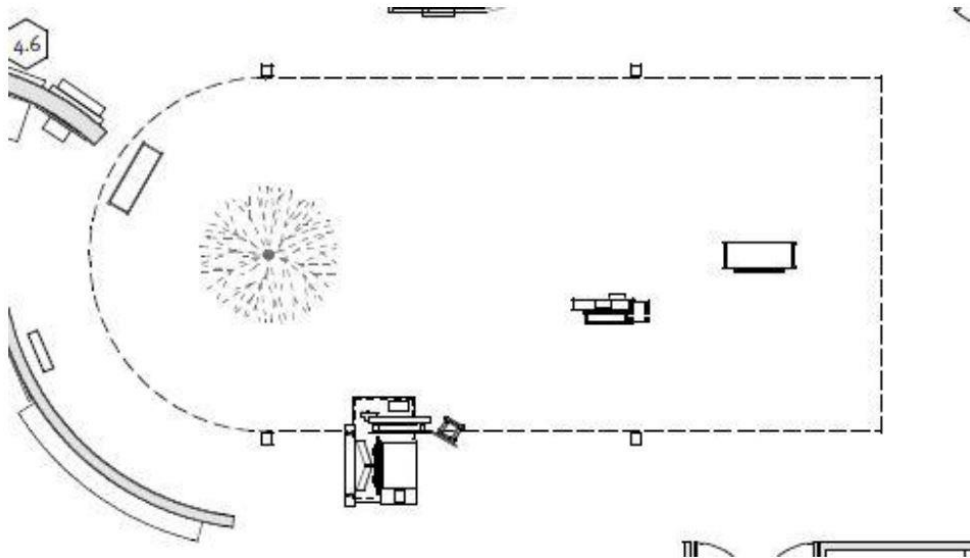
<sup>1</sup>Percent of Variance Explained

## Appendix I: Discovery Center Observation Maps

### I.1: Observation Map for Exhibit Section 1

Name: \_\_\_\_\_ Time In: \_\_\_\_\_

Date: \_\_\_\_\_ Time Out: \_\_\_\_\_



Subject:    Male    Female    ND    Group/Family Size: \_\_\_\_\_    Age:    Under 16    16-24    25-34    35-44    45-54    55-64    65+  
 Visitor Type:    Family (Kids/Adults)    Family (Kids/Seniors)    Group    Independent Adult    School Group    Couple

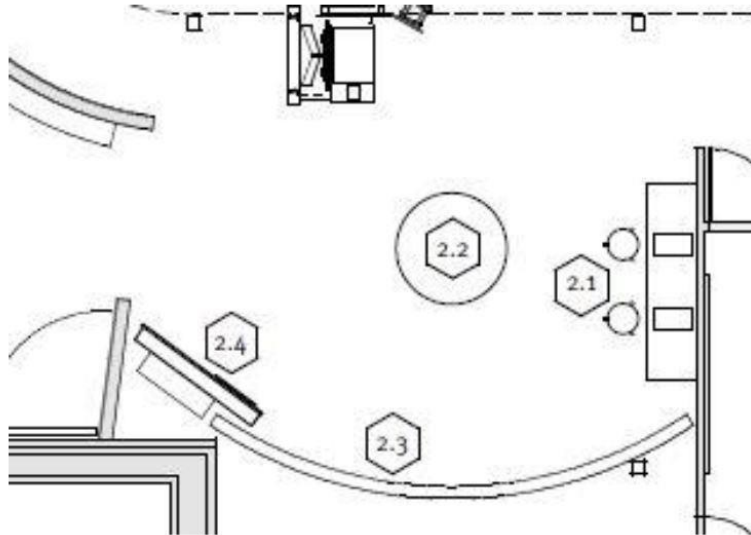
#### Observation Key:

**e** = look at exhibit only    **o** = calls/calls over    **r** = read text    **d** = talk to docent    **w** = watches someone else  
**t** = talk to person in group (inaudible)    **tu** = talk to person in group (not related to exhibit)    **tq** = question, exhibit related    **tc** = comment, exhibit related  
**ta** = read text aloud to others in group    **m** = manipulate exhibit (interactive, lift/drops, watches movie)

## I.2: Observation Map for Exhibit Section 2

Name: \_\_\_\_\_ Time In: \_\_\_\_\_

Date: \_\_\_\_\_ Time Out: \_\_\_\_\_



Subject:    Male       Female       ND    Group/Family Size: \_\_\_\_\_ Age:    Under 16    16-24    25-34    35-44    45-54    55-64    65+

Visitor Type:    Family (Kids/Adults)    Family (Kids/Seniors)    Group    Independent Adult    School Group    Couple

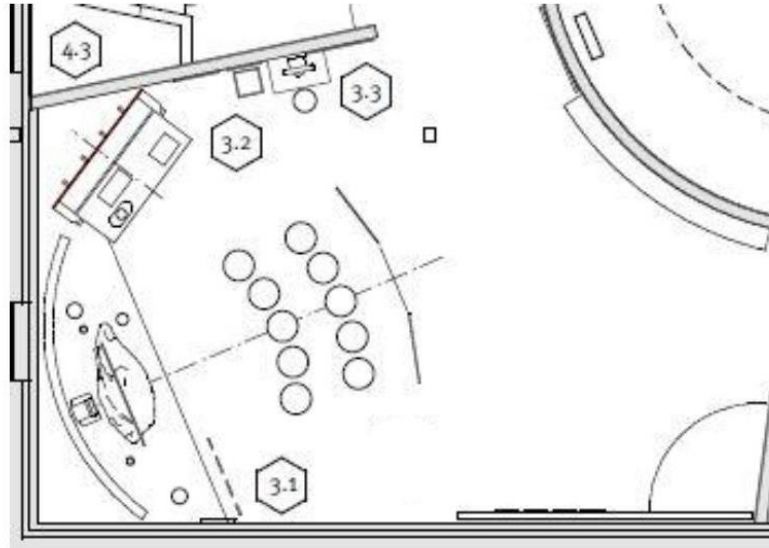
### Observation Key:

**e** = look at exhibit only       **o** = calls/calls over       **r** = read text       **d** = talk to docent       **w** = watches someone else  
**t** = talk to person in group (inaudible)    **tu** = talk to person in group (not related to exhibit)    **tq** = question, exhibit related    **tc** = comment, exhibit related  
**ta** = read text aloud to others in group    **m** = manipulate exhibit (interactive, lift/drops, watches movie)

### I.3: Observation Map for Exhibit Section 3

Name: \_\_\_\_\_ Time In: \_\_\_\_\_

Date: \_\_\_\_\_ Time Out: \_\_\_\_\_



Subject:    Male    Female    ND    Group/Family Size: \_\_\_\_\_    Age:    Under 16    16-24    25-34    35-44    45-54    55-64    65+

Visitor Type:    Family (Kids/Adults)    Family (Kids/Seniors)    Group    Independent Adult    School Group    Couple

Observation Key:

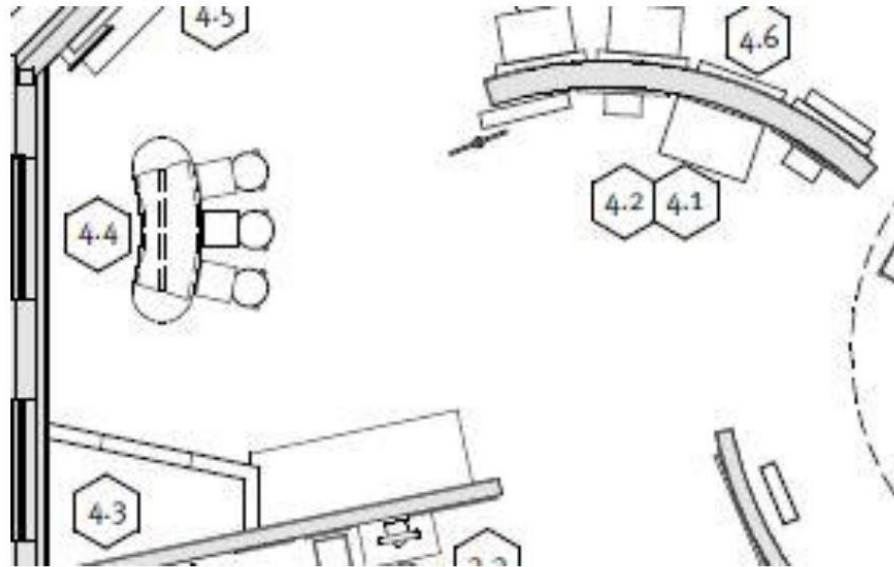
**e** = look at exhibit only    **o** = calls/calls over    **r** = read text    **d** = talk to docent    **w** = watches someone else  
**t** = talk to person in group (inaudible)    **tu** = talk to person in group (not related to exhibit)    **tq** = question, exhibit related    **tc** = comment, exhibit related  
**ta** = read text aloud to others in group    **m** = manipulate exhibit (interactive, lift/drops, watches movie)



# *I.4: Observation Map for Exhibit Section 4*

Name: \_\_\_\_\_ Time In: \_\_\_\_\_

Date: \_\_\_\_\_ Time Out: \_\_\_\_\_



Subject:    Male       Female       ND    Group/Family Size: \_\_\_\_\_ Age:    Under 16    16-24    25-34    35-44    45-54    55-64    65+

Visitor Type:    Family (Kids/Adults)    Family (Kids/Seniors)    Group    Independent Adult    School Group    Couple

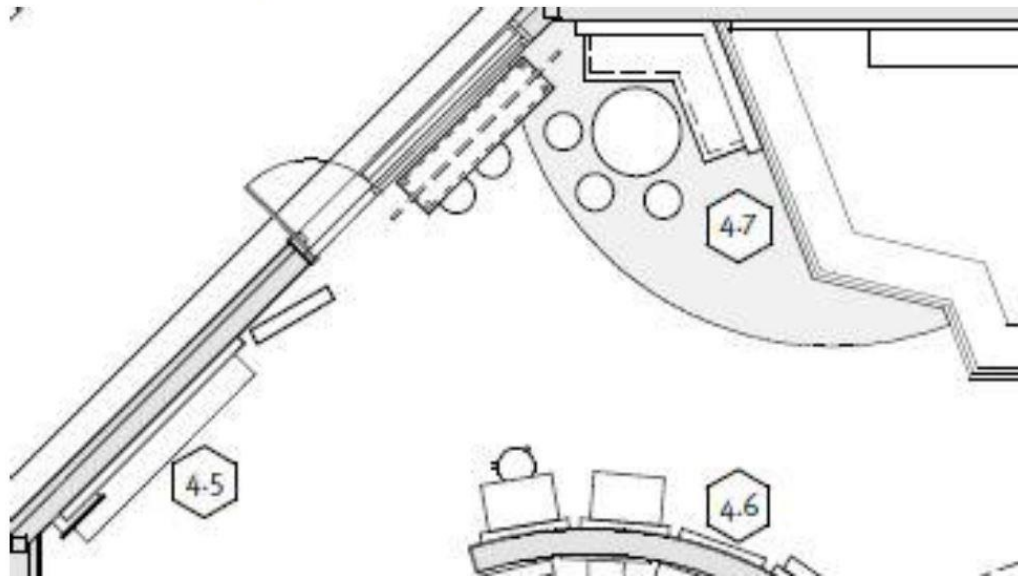
Observation Key:

**e** = look at exhibit only       **o** = calls/calls over       **r** = read text       **d** = talk to docent       **w** = watches someone else  
**t** = talk to person in group (inaudible)    **tu** = talk to person in group (not related to exhibit)    **tq** = question, exhibit related    **tc** = comment, exhibit related  
**ta** = read text aloud to others in group    **m** = manipulate exhibit (interactive, lift/drops, watches movie)

## I.5: Observation Map for Exhibit Section 5

Name: \_\_\_\_\_ Time In: \_\_\_\_\_

Date: \_\_\_\_\_ Time Out: \_\_\_\_\_



Subject:    Male    Female    ND    Group/Family Size: \_\_\_\_\_    Age:    Under 16    16-24    25-34    35-44    45-54    55-64    65+

Visitor Type:    Family (Kids/Adults)    Family (Kids/Seniors)    Group    Independent Adult    School Group    Couple

Observation Key:

**e** = look at exhibit only    **o** = calls/calls over    **r** = read text    **d** = talk to docent    **w** = watches someone else  
**t** = talk to person in group (inaudible)    **tu** = talk to person in group (not related to exhibit)    **tq** = question, exhibit related    **tc** = comment, exhibit related  
**ta** = read text aloud to others in group    **m** = manipulate exhibit (interactive, lift/drops, watches movie)