Abstract

Numerous scholars agree that contact with natural landscapes has benefits for the landscape and the person experiencing them, including increased environmentally-responsible behaviors as well as psychological, cognitive, physiological, and social benefits. People develop a sense of place in outdoor landscapes while experiencing the physical environment, and sense of place is strengthened by place attachment – one’s emotional ties to a place. According to Williams and Patterson (1999), place attachment is perceived through four systems of meaning: 1) aesthetic/inherent, 2) goal-directed/instrumental, 3) cultural/symbolic, and 4) individual/expressive. The present study sought to understand which of these four systems of meaning are the most salient for undergraduate college students in outdoor landscapes where they experience place attachment. Findings from the content analysis of Yelp reviews of outdoor places and student surveys indicate that cultural/symbolic and individual/expressive systems of meaning are more prominent for students in meaningful outdoor places than aesthetic/inherent and goal-directed/symbolic systems of meaning. Implications for landscape management on college campuses are discussed.

Introduction

Humans live in a geospatial world, and no place on earth is devoid of meaning. Place is a key geographical concept: a space becomes a place with familiarity and endowing it with meaning or value, involving “understanding how the landscape is related to local human culture and history” (Williams and Patterson 1999, pg. 144). Within the social construction of place, a ‘sense of place’ is a concept that encompasses the emotional and symbolic aspects of place, referring to the connections and relationships between the self and the place (Eisenhauer et al. 2000, Stedman 2003).

People develop a sense of place while experiencing (interacting, knowing, perceiving, or living in) the physical environment, through biological, individual, or sociocultural processes (Hausmann et al. 2016). Moreover, one’s sense of place is strengthened by place attachment, a related concept which more specifically arises when a landscape is infused with meaning(s)—extending beyond the utilitarian ‘use value’ of the land—that effectively creates or enhances one’s emotional ties to that place (Eisenhauer et al. 2000, Vaske and Kobrin 2011). Many researchers have conceptualized place dependence—a functional attachment, e.g. the importance of a place in providing amenities for activities— and place identity—an emotional attachment, e.g. psychological investment developed over time—as two sub-concepts within place attachment (Vaske and Kobrin 2011, Williams and Patterson 1999). Other researchers, like Schroeder (2007), posit that there is a dichotomy in “the human-nature relationship, in which humans can be seen simultaneously ‘part of’ and ‘apart’ from nature” (pg. 293).

Environmental psychology literature has focused on the benefits for person and landscape in the place attachment relationship on local levels, on tourism, and on public parks. Place attachment can mitigate a sense of place identity that can contribute to one’s sense of personal or community identity (Williams and Patterson 1999). Researchers have found that in developing
place attachment, one is more likely to express care and concern for a place’s environmental protection and thereby are more likely to demonstrate environmentally responsible behaviors (ERB) (Brehm et al. 2013; Cheng et al. 2013; Hausmann et al. 2016; Lawrence 2012; Vaske and Kobrin 2001). Cheng et al. (2013) define ERB as “actions taken to minimize damage to the environment, and promote environmental protection” and “reflect concerns for the natural environment by individuals or groups”; examples include picking up trash, respecting wildlife, staying on designated trails, preventing destruction to the landscape, and can refer to ERBs at the place-level and overall in day-to-day life (Cheng et al. 2013 pg. 1169; Vaske and Kobrin 2011; Williams and Patterson 1999). In this way, a landscape benefits from place attachment.

There is an abundance of literature concerning the benefits to humans of contact with nature in general. There are psychological benefits such as increased self-esteem (Pretty et al. 2005), reduced anxiety (Chang and Chen 2005), and reduced anger (Kuo and Sullivan 2001). Improved educational performance, improved productivity (Fjeld et al. 1998), and reduced mental fatigue (Moore 2007) are some of the cognitive benefits of interacting with nature. Beyond mental benefits, nature can promote physiological well-being, such as stress reduction and reduced headaches (Hansmann et al. 2007). Hansmann et al. (2007) studied the physiological effects of being in a park, inside a forest, or on the forest edge, finding that all three locations increased the participants’ level of feeling “well-balanced”—ultimately showing that being in nature, even for short periods of time, has a restorative effect on the body. In promoting social well-being, contact with nature can increase social cohesion (Kingsley and Townsend 2006) and reduce violence (Moore et al. 2007). These social benefits are especially salient in contexts of outdoor groups or community gardens.

However, there is a lack of literature concerning place attachment for college students. The student perspective is unique because students occupy a medium between being a ‘visitor’ and a ‘resident’ on their campus and in their college town. For the majority of college students, their college town is not a place where they have developed childhood memories or spent much time in before attending college; therefore, college students may conceptualize place attachment on their temporary home differently from the general public. Consequently, place attachment for students must be measured differently from that of the population at large. The present study proposes to close this gap by assessing systems of meaning in place attachment for students on their campus and in their college town.

**Theoretical Framework**

The theoretical framework for the present study is adapted from Williams and Patterson’s (1999) four systems of meaning that mediate place attachment of a landscape. Meanings can vary in tangibility, commonality, and emotionality. These four systems of meaning represent four approaches to understanding the meanings people assign to natural landscapes.

Aesthetic/inherent systems of meaning come from the “immediate feelings of pleasantness and interest that appear to be innate reactions (i.e., involving minimal cognitive processing)” to the landscape (pg. 146). For instance, all humans recognize the intrinsic beauty of a place like the Grand Canyon beyond all of its other meanings.

Instrumental/goal-directed systems of meaning imply a landscape’s capacity to promote behavioral and/or economic goals like recreational activity or trade. Places are often measured through how many trees can be clear-cut from a forest, whereas others are measured through the physical activities that can be accomplished there.
Cultural/symbolic systems of meaning posit that landscapes can have value beyond aesthetic or instrumental and that they can exist as places that people are attached to because these places “possess emotional, symbolic, and spiritual meaning” for a group, community, or a society (pg. 148). As an example, Plymouth Rock is a symbolic location for Americans because it represents the Mayflower and the beginnings of the United States.

Finally, individual/expressive systems of meaning arise when individuals assign relatively unique meanings to a place that deviate from those held by the group, community or society and is most connected to place identity. A place could be special to one person because they spent their afternoons there as a child, whereas another person could find the place special because they got engaged there.

Using this theoretical framework will be useful in understanding why people get attached to certain places and how they conceptualize the reasons behind the meaning. According to Williams and Patterson (1999), traditional ecosystem management focuses more on the aesthetic/inherent and goal-directed/instrumental systems of meaning in valuing a landscape, rather than the symbolic/cultural and individual/expressive systems of meaning. However, for the present study, I hypothesize that the more intangible systems of meaning - symbolic/cultural and individual/expressive - will be more salient than aesthetic/inherent and goal-directed/instrumental for landscape meaning.

**Context of Study: University of Richmond Gambles Mill Eco-Corridor**

The University of Richmond is located about seven miles to the West of Downtown Richmond, Virginia. This small (~ 3,200 undergraduate students), private, 4-year university has been ranked as one of the most beautiful college campuses in the US due in part to both the natural and built environment on the campus. Recently, the school began construction on the Gambles Mill Eco-Corridor, a project that includes restoring a 3,000 foot stream and rehabilitating a multi-use trail on the campus (Figure 1). When it is completed, this Eco-Corridor presents an opportunity to connect University of Richmond students physically to the James River, as well as with the history of the area, the campus, and the City of Richmond. Because the Gambles Mill Eco-Corridor is on the edge of campus and in an area with less pedestrian traffic, the University must be intentional in what will be included and highlighted to attract students to this area. The current study will be able to present recommendations for the Gambles Mill Eco-Corridor project based on the successes of other outdoor areas in the City and getting feedback from current students on their favorite outdoor places. Using Williams and Patterson’s (1999) framework, the present study attempts to find out which of these four systems of meaning are the most salient in place attachment for UR students and seek examples of these systems of meaning at work at natural landscapes in the Richmond City area. The objective of the present study is to translate data and observations into action, giving concrete examples of how the Eco-Corridor can enhance systems of meaning in its presentation that will hopefully lead to increased place attachment for students. If the University is successful in establishing meaning to facilitate place attachment for students, the Eco-Corridor can serve as a place of learning, recreation, relaxation, socialization, and/or self-reflection for students for many years to come.

**Methods: Yelp Content Analysis**

The first method of data collection was a content analysis and coding from Yelp.com reviews of different outdoor places in Richmond, conducted in two phases. As a crowd-sourced review forum, Yelp gives anyone the opportunity to rate places, including a 5-star rating system.
as well as the opportunity to provide text and pictures to a review. Typically, Yelp reviews are for businesses and services, but I decided to look at publicly-owned, free places within the City of Richmond parks system. I chose to look at seven places with historic elements and water features:

- Belle Isle
- Brown’s Island
- T. Tyler Potterfield Bridge
- Byrd Park
- Great Shiplock Park
- Libby Hill Park
- Chimborazo Park

Each of these places had an average of 31 reviews as of November 22, 2019, and I analyzed 214 unique reviews in total. The first iteration of this method of analysis involved looking through content analysis in the reviews, identifying key emerging themes within the framework of four systems of meaning. This initial content analysis produced 19 more specific thematic coding categories within the framework of four systems of meaning that will be presented in the Results section.

However, the second iteration of analysis involved coding each of the 214 reviews according to the new 19 thematic coding categories. For each review, I marked which of the 19 categories, if any, were elicited in the review. Many reviews would elicit categories more than once in the review (ex: mentioning several different types of random recreation activities that could be done at the place), so for each review, each category could only get a score of 0 (not elicited) or 1 (elicited). In analyzing this data, I tabulated the total of times each category was elicited, divided by the 214 total reviews, to produce a percentage of how many of the reviews elicited each of the 19 categories. Lastly, I combined the total of each of the 19 thematic coding categories in accordance with which of the four systems of meaning they were categorized under and divided by the 214 total reviews in order to calculate what percentage of the reviews elicited each of the four systems of meaning. Using Yelp reviews helped to establish the various ways people subconsciously discuss the four dimensions of place meaning in reviewing a place.

**Methods: Student Survey**

The second method of analysis conducted was a survey administered to current UR students in order to gauge what places on campus and in the City of Richmond they are attached to and the reasons behind their attachment, coded to determine which of the four systems of meaning and 19 thematic coding categories they represent. To obtain my target sample, I used a combination of random and snowball sampling. With the help of the University of Richmond’s Office of Institutional Effectiveness, the survey was sent to a random sample of 75 students from each the junior and senior class. I chose to reach out only to the upperclassman grades because the more time that one spends in a place, the greater the chance they have acquired finding meaningful places for them. However, out of the 150 surveys sent to students, the response rate was extremely low—around 4%. Thus, I ended up supplementing this with a snowball sampling method to get more responses to the survey. I reached out to student groups via GroupMe and e-mail listservs, ending up with 40 total respondents (Table 1). The respondents were majority female (71%) and seniors (66%), but showed diversity geographically and in terms of majors and
minors (Figure 1). In fact, the percentages of respondents in each school was consistent with the proportion of the home schools of undergraduates overall.

The survey began with collecting demographic data—their gender, class standing, hometown, and major(s) and/or minor(s). The next two sets of questions began with asking the respondent to identify a personally meaningful outdoor place 1) on the University of Richmond campus and 2) within the City of Richmond. The following questions were identical for both the campus and City place and were a combination of open- and close-ended, asking about their experience and meaning at the place:

1) How often do you go to this place?
   a. Answer options were: at least once a week, at least once a month, at least once a semester, or ‘other.’

2) When you go, how long do you usually stay?
   a. Answer options were: less than 15 minutes, between 15-30 minutes, between 30 minutes-1 hour, greater than an hour, or ‘other.’

3) What do you usually do when you visit this place?
   a. Open-ended

4) What, at all, do you know about the history of this place?
   a. Open-ended

5) Write 1 or 2 sentences about why this place is meaningful to you.
   a. Open-ended

6) Why is it meaningful to you?
   a. For this question, the multiple-choice answers were each of the 19 thematic coding categories. Respondents could choose as many of these as they wanted.

Results: Yelp Content Analysis

The first part of this content analysis specified 19 thematic coding categories within the four broader systems of meaning:

- **Aesthetic/Inherent**
  - Nice view from this place
  - Sunrise/sunset
  - Flowers and trees
  - Urban views
  - Water features
  - Animals/bugs

- **Goal-Directed/Instrumental**
  - Sanctioned recreation (ex: paddle boats at Byrd Park, bike park at Belle Isle)
  - Random recreation (ex: exercising, walking a dog, picnicking)
  - Connections to other places (ex: bridges)

- **Cultural/Symbolic**
  - History happened here
  - Represents larger history of a place
  - Special to a group
  - Old structures
Individual/Expressive
- Relaxing/serene/peaceful
- Childhood memories
- Connecting with nature
- Escape from hustle and bustle
- Solitude/reflection/meditation
- Being with loved ones

The second part of the content analysis tallied up how many times each of these thematic coding categories were elicited. More than half (54%) of the Yelp reviews talked about at least one type of random recreation, such as exercise or having a picnic. The other most elicited themes were nice view from this place (23%), history happened here (19%), aesthetically-pleasing water features (18%), represents larger history of a place (15%), and relaxing/serene/peaceful (14%). Overall, the most evoked system of meaning was goal-directed/instrumental (77%), followed by aesthetic/inherent (72%), cultural/symbolic (43%), and lastly, individual/expressive (38%). These results do not support the hypothesis that cultural/symbolic and individual/expressive systems of meaning would be more salient than aesthetic/inherent and goal-directed/instrumental.

Results: Student Survey

The student survey was informative in providing which places on campus and in the City are most meaningful for students, as well as the reasons behind that meaning. Some of the most popular places on campus were Westhampton Lake, the Gazebo, the Boatwright Library Patio, the International Center Courtyard, and the Chapel Garden (Figure 3). The most mentioned City locations were Pony Pasture, the VMFA Lawn, the James River, Maymont Gardens, and Belle Isle (Figure 4). However, it should be noted that a handful of students did not answer for a meaningful City place: one student even responded “I’ve never really been to the City.”

Respondents indicated that they visited their campus place more often, but that they spent more time at their City place when they visited (Figure 5, Figure 6). I analyzed both the question “What do you usually do at this place?” via a word cloud to produce emerging key themes within that content (Figure 7, Figure 8). For campus places, students spoke mostly about reading or doing homework, reflecting, listening to music, and walking; for City places, students spoke about relaxing, walking, running, swimming, being with friends, connecting with nature, and enjoying the view. Lastly, I compared the emergence of both the four systems of meaning and the 19 thematic coding categories for the campus and City places. Overall, for both the campus and City place, the most evoked system of meaning was individual/expressive, followed by aesthetic/inherent, symbolic/cultural, and goal-directed/instrumental (Figure 9). These results support the hypothesis that symbolic/cultural and individual/expressive systems of meaning would be more salient than aesthetic/inherent and goal-directed/instrumental. There were some slight differences in which of the 19 thematic coding categories were elicited by survey respondents for the campus and City places. For campus places, the top theme was relaxing/serene/peaceful (84%), followed by the view is nice (82%), escape from the hustle and bustle (68%), solitude/reflection/meditation (58%), flowers and trees (58%) and aesthetically-pleasing water features (58%). For the City places, the top theme was the view is nice (97%), helps me connect with nature (79%), escape from the hustle and bustle (79%),
relaxing/serene/peaceful (76%), flowers/trees (76%), and aesthetically-pleasing water features (69%).

**Discussion**

According to Stedman (2003), place attachment “is not intrinsic to the physical setting itself, but resides in human interpretations of the setting, which are constructed through experience with it” (Stedman 2003, pg. 672). The present study sought to understand which of Williams and Patterson’s (2000) four systems of meaning - aesthetic/inherent, goal-directed/instrumental, symbolic/cultural, or individual/expressive - are the most salient when it comes to place attachment. This was tested through a content analysis of Yelp reviews and a survey to current University of Richmond students. Though the results of the Yelp review content analysis did not support the hypothesis, this is logical because Yelp is a public forum for rating places. Making a Yelp review about why a place is special to you specifically is less helpful than outlining what activities can be done at that place, and thus, Yelp reviewers are more likely to do the latter. However, the results show that although goal-directed meaning - specifically, the ‘random’ recreation available at the place - was the most evoked by far, elements of symbolic/cultural systems of meaning were salient as well. The study sites varied in their historical significance, but some of the most cited of the thematic coding categories included both “history happened here” and “it represents the larger history of a place.” This is important because it shows how visitors of these places conceptualize how these landscapes are relevant to local history. Belle Isle had the most mentions of both “history happened here” and “it represents the larger history of a place” probably due to the amount and prominence of the signage at the place that talks about the significance of the island, its importance as a site in Richmond, a place in the Civil War, and a site showing a slice of life in the technology of centuries ago. However, it is important to note that Richmond is more historic than the average City, so the cultural/symbolic meanings in place attachment would probably be different from that of cities with less history. Future studies could look at the effects of signage on how visitors conceptualize the symbolic and cultural elements of a landscape.

The results of the surveys for campus and City places support the hypothesis. Results from the Yelp reviews as well as student surveys show that looking at water features are a draw for meaningful places, whether it’s the Westhampton Lake or the James River. Many of the most meaningful places on campus for students are spatially concentrated around the symbolic center of campus, Westhampton Lake, including the Gazebo, Chapel Green, and Boatwright Library Patio. However, meaningful places on campus are scattered around the entire campus, from the Tennis Courts near the stadium to the Intramural Fields on the opposite side of campus. Most of the meaningful places mentioned by students are places that are near the busiest areas of campus and have places to sit - whether on a bench, a hammock, a ledge, or an Adirondack chair. Some of the campus places reflect spaces where extracurricular activities are conducted - such as the Tennis Courts or the Intramural Fields, while some of the mentioned campus places are near academic buildings corresponding to a student’s major or minor: the respondent who put “outside of Lou’s” [in the Robins School of Business] was a business administration minor; many respondents who put “International Center Courtyard” were global studies, geography, or language majors or minors.

Since 87% of undergraduate students live on-campus for all four years, many students spend the majority of their time on campus; thus, the on-campus areas may be more meaningful to students than City places. The University of Richmond campus has well-defined boundaries
and its isolation is reinforced by the inability to walk off-campus easily. The results of asking how often the students go to their campus versus their City place show that students visit their campus place considerably more often than their City place show another example of the difference in meaning for campus versus City places. After all, as is noted by Hausmann et al. (2016), people develop a sense of place while experiencing (interacting, knowing, perceiving, or living in) the physical environment; therefore, having experienced campus places more often would facilitate a greater attachment to those places rather than the City places. Scholars have found that proximity can mediate the relationship with place attachment, so it is logical that students have more place attachment to their residence (Perry et al. 2014). Plus, the results of “How much time do you spend at this place?” reveal that students go to their on-campus place within a small window of time, the majority going to the campus place for less than 30 minutes at a time. On the other hand, more than 90% of students visit their City place for more than 30 minutes. These results may exhibit the fact that students can sneak off to their campus places between classes or in the middle of their day, but that City places are further away and may be more of a time commitment and thus are more often a weekend activity. But because students live in different parts of campus each year, it would be hard to measure the impact of the location of their dorm versus their attached place. Future studies should also include a scale measuring the student’s subjective level of meaning, comparing their campus and City places.

However, campus is often spoken about as a ‘bubble’ and thus students may decide to escape campus to explore the City. Unfortunately, a handful of respondents for campus places did not respond to the section about City places; one sophomore respondent even said “I’ve never really been to the City.” This shows that going to the City may not be accessible for some students, whether there are constraints of time, money, or vehicular access. Some of the other respondents who did not choose a meaningful City place were also sophomores, indicating that students may experience City places more as they spend more time at the University. Meaningful City places are also concentrated around water - namely the James River - at places like Pony Pasture and Belle Isle. It is important to note that Pony Pasture is the most mentioned City place by far. I believe this is due to its proximity to campus and the amount that its spoken about by students and faculty as compared to other places. The City places overall are very concentrated around the center of the City, largely on the north side of Richmond. This may be because the University of Richmond is on the periphery of the City, so students might only seek out the more well-known places - like Belle Isle, VMFA, or Maymont - in the City. Whereas at a campus like Virginia Commonwealth University, which is an urban campus near downtown Richmond, students may explore the City itself more often and find other unique places. In general, I was surprised with the amount of variance in students’ meaningful places both on campus and in the City.

In looking at the meanings behind students’ meaningful places, several key themes emerged that compared and contrasted the campus and City places for students. Overall, students attach more individual/expressive meanings for campus places than they do for City places; aesthetic/inherent meanings were about equal; and students attach more goal-directed/instrumental and symbolic/cultural meanings for City places than campus places. For both campus and City places, the thematic coding category “escape from the hustle and bustle” is near the top of the list, with 68% and 79% of student respondents, respectively. Studies have shown that contact with nature lead to a decrease in stress (Hansmann et al. 2007), mental fatigue (Moore et al. 2007), and anxiety (Chang and Chen 2005), so students using these outdoor places as an escape from the hustle and bustle points to a healthy coping mechanism for the mentally
taxing experiences of being a college student. According to Schroeder (2007), nature can be seen as a contrast to the built environment and acts as a refuge. Some aesthetic/inherent topics are also salient for both campus and City places, including “the view from this place is aesthetically pleasing,” “the flowers/trees are beautiful,” and “the water features are aesthetically pleasing.” These results signify that the aesthetic elements of outdoor landscapes are important to students when choosing a place to go. Lastly, comparing the surveys to the Yelp reviews, it is interesting to see that the history of place is much less important for students in both their City and campus place. Even though for Yelp reviews, “history happened here” and “it represents the larger history of a place” are both in the top five most evoked thematic coding categories, those two themes are near the bottom for students’ campus and City places. This could be because students are not as interested in history as the typical Yelp reviewer.

The top thematic coding categories for campus versus City, however, illuminate the different ways in which students have assigned meaning to those places. For campus, most of the top themes are individual/expressive - such as “relaxing/peaceful/serene,” “escape from the hustle and bustle,” and “solitude/reflection/meditation.” In looking at the word cloud for “What do usually do there?” many of the most talked-about themes show that meanings of campus places are more solitary, such as doing work, reading, listening to music, and reflecting. Additionally, only 13% of respondents chose the campus place as being somewhere to “spend time with loved ones,” whereas 62% of respondents chose that for City places. These results show that students treasure places where they can be alone on campus, and notably places where they can do homework or read. This is important to examine considering contact with nature can lead to cognitive well-being, including improved productivity as well as improved educational performance (Fjeld et al. 1998). An interesting future study could test whether students who do homework in outdoor areas have increased academic outcomes compared to students who primarily do work indoors.

On the other hand, City places are ascribed meaning less through individual/expressive means, but more through themes of nature instead. Almost all respondents (97%) chose “the view is aesthetically pleasing” for their City place, and 79% of respondents agreed that their City place “helps [them] connect with nature.” Some of the City places appear to be much less landscaped than the campus places and for students, might feel more natural; only 55% of students say that their campus place helps them connect with nature. In seeing the differences between campus and City places, it shows that “our experience of places may lead us to experience ourselves as simultaneously part of and apart from nature” (Schroeder 2007, pg. 308). Specific features that are meaningful to the City place included the “trees/flowers” and “aesthetically-pleasing water features.” Though still a small amount, themes about history such as “history happened here” or “it represents the larger history of a place” are much higher for City places than campus places (17% and 24% vs. 5% and 3%, respectively). This could be because there is a lack of signage at the campus places indicating significance or history, whereas there is historical signage at many of the City places. In looking at the word cloud for City places, emergent themes are more based around activities like walking, running, swimming, relaxing, and enjoying nature. It seems that students focus more on activities at City places rather than campus places: 52% of City places are meaningful because one could do random recreation and 14% for legitimate recreation, but for campus places random recreation is 26% and legitimate recreation is 5%. Perhaps City places are meaningful to students because they can do activities that they would otherwise not be able to do at campus places. Regardless, Eisenhauer et
(2000) found that even though visitors may engage in different types of activities at a place, the visitors generate meaningful place attachment irrespective of the activities performed therein.

Overall, the present study identified the differences between how place meaning is conceptualized in Yelp reviews and by students via survey for campus places and City places. The objective of this study was to find out which of the four systems of meaning are most salient in place attachment, and the results indicate that individual/expressive and symbolic/cultural are more salient than aesthetic/inherent and goal-directed/instrumental, as predicted by the hypothesis. The results of this study can point to specific recommendations for the University of Richmond’s Gambles Mill Eco-Corridor in order to attract students to the area and thereby mediate place attachment.

1) **Allow students to reflect**

Looking at the results from the campus places, students treasure on-campus areas where they can escape to do work, read, listen to music, or reflect. In order to have the Eco-Corridor be another place like this, the University should make sure to supply the Eco-Corridor with places to sit or even tables at which to do work or read. There are already plans for picnic tables near the Community Garden as well as two outdoor classrooms with some benches, but using other means like hammocks or Adirondack chairs can also attract students to the area.

2) **Give students a chance to understand & connect with local history**

In seeing the responses of students and Yelp reviewers, it seems that the University of Richmond lacks signage that denotes the historical significance of places on campus, or campus in general. The Eco-Corridor, as a fairly untouched landscape, has several opportunities to present historical significance. Not only does it have remnants - including the earthened dam and the water treatment structure – but the railroad interpretation area is an opportunity to talk about the history of what Gambles Mill used to be and show its importance to campus. Students and Yelp reviewers alike indicate that history can create meaning for a place if presented correctly.

3) **Give students the opportunity to connect with nature**

One important takeaway in contrasting the campus and City places was seeing how many more students chose the City place as meaningful because it gives them an opportunity to connect with nature. Because one of the Eco-Corridor’s main objectives was to replace invasive species with native species, this can give students an opportunity to understand what the native flora and fauna of Virginia are. As an example, Belle Isle had small signs on different types of trees with QR codes on them to educate visitors about the tree species on the island. Many students at UR will never take a biology or environmental science class, so this kind of educational experience can help those students connect with their local environment. Because the Eco-Corridor will be both a destination and a connection to the James River, it will act as a place to connect campus to local hydrology overall.

These three recommendations point to tangible, achievable goals that the University of Richmond can accomplish in establishing the Gambles Mill Eco-Corridor as a new outdoor place for students. Using resources that already exist in the Eco-Corridor, such as the historic remnants and native plants, this area could become a highlight of campus. The recommendations indicate ways in which the University can facilitate increased place attachment for students at the Eco-Corridor through cultural/symbolic and individual/expressive systems of meaning.


Tables and Figures

Table 1. Demographic characteristics of survey respondents.

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Survey Respondents (%) [n = 40]</th>
<th>UR Undergraduates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>71</td>
<td>51</td>
</tr>
<tr>
<td>Male</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>Class Standing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Junior</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Senior</td>
<td>66</td>
<td>25</td>
</tr>
<tr>
<td>School of Majors and Minors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Arts and Sciences</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>Jepson Leadership School</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Robins School of Business</td>
<td>17</td>
<td>16</td>
</tr>
</tbody>
</table>

Survey Respondent Hometowns

Figure 1. Map of hometowns as indicated by survey respondents.
Figure 2. Area of study site context, including the University of Richmond’s Gambles Mill Eco-Corridor, which encompasses the Little Westham Creek.
Figure 3. Survey respondents’ meaningful outdoor places on the University of Richmond campus.
Figure 4. Survey respondents’ meaningful outdoor places within the City of Richmond. The purpose of this map was to convey which outdoor places in Richmond were chosen as meaningful places by students in the survey. Major design choices were consistent with University of Richmond branding guidelines, such as color and font. Challenges included determining in which way the preferences of students were symbolized, making sure graduated symbols were simple, and dealing with labels. This map is useful and informative in displaying what the most popular outdoor places in the City are for UR students.
Figure 5. Survey respondents’ choice in how often they visit each place.

Figure 6. Survey respondents’ choice in how long they spend at each place.
Figure 7. Word cloud for “What do you usually do at this place?” for campus places.

Figure 8. Word cloud for “What do you usually do at this place?” for City places.
Figure 9. Four systems of meaning evoked by survey participants in their campus and City places.