STATE PARK SELECTION AS DETERMINED
BY USER HEALTH

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The Degree of Master of Science

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ABSTRACT

The purpose of this study was to determine whether state park difficulty affected location of travel. This study was conducted at three state park locations within the United States. Surveys and on-site examinations were made at the following locations; Wilson State Park, Kansas, Petit Jean State Park, Arkansas, and Kiholo State Park, Hawaii. Park locations were chosen by varying levels of terrain difficulty, as well as a rating from the Recreation Opportunity Spectrum. Participants were asked to report data via iPads on exercise habits, mobility limiting impairments, and frequency of exercise so a ranking of the healthiest participants could be created according to the standards of the American College of Sports Medicine. General demographic questions and zip codes were also requested for supplemental analysis. Once compiled, the data was analyzed using the Qualtrics Survey Platform to obtain descriptive statistics, graphs, charts, and a location for further analysis. Initial analysis of the descriptive results indicated high overall health levels in Kiholo, moderate in Kansas, and moderate to low in Arkansas. Statistical analysis showed no significance between difficulty and average weekly exercise rates but showed significant statistical differences between the means of mobility limiting impairments and types of exercise performed.
ACKNOWLEDGMENTS

I wish to express my sincere appreciation to my advisor Dr. Keith Bremer, as well as my committee members Dr. Amanda Buday and Dr. Jonathan Sumrall. I would not have been able to reach my academic goals without their expertise and guidance. The physical and financial support provided by the Fort Hays State University Department of Geosciences and Graduate Scholarly Experience Grant were also instrumental in the completion of this study.
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INTRODUCTION

According to the National Center for Health Statistics (NCHS), the life expectancy of adults has begun to decrease since 2006 (Arias et al., 2018). The prevalence of heart diseases has become the leading cause of death in the United States (Bowman et al., 2014). Of the top five leading causes of death, three are influenced by hypokinetic, chronic conditions that are preventable by diet and exercise (Bowman et al., 2014). Another concern is mental and emotional wellbeing. The increasing demands of today’s society have resulted in higher levels of stress causing greater prevalence of many illnesses including: high blood pressure, gastrointestinal issues, obesity, diabetes, headaches, depression, anxiety, and Alzheimer’s Disease (Bowman et al., 2014). Studies have shown that physical activity releases serotonin and dopamine in the brain resulting in stabilization of mood-regulating chemicals (Liu et al., 2017). In order to address the rising health complications of the citizens in the United States, the government set aside public land to encourage citizens to engage in physical activity (Godbey et al., 2009).

Problem Statement

Few studies have been conducted relating state parks and wellbeing (Godbey et al., 2007). Relationships between urban park activity and mental health have been studied in Beijing but focus solely on mental health (Liu et al., 2017). The purpose of this study was to investigate whether the rigor of physical activity available at state parks and the classification of Recreation Opportunity Spectrum (ROS) rating influenced those that chose to visit parks based upon health considerations. The difference in participant health in relation to ROS rating was examined at Wilson State Park, Kansas (WSP), Petit Jean State Park, Arkansas (PJSP), and Kiholo State Park Reserve, Hawaii (KSPR).
Significance of Study

The implications of this study are multifaceted and apply to both personal and state park institutional needs. Results of this research give insight regarding where state parks should allocate funds, and how the parks are structured; specifically, what amenities are maintained and provided. By creating parks that are user-friendly and encompass visitors’ needs, park goers could have increased health benefits from participation in park activities. These health benefits could also influence the wellbeing of society.

The wellbeing of society could help cut down on the 113.9-billion-dollar price tag associated with hypokinetic diseases (Williamson and Glick, 2010). In addition to health benefits, tourism could contribute to large financial sums for state governments and tourism. These funds could be used in public programs that in turn, benefit both the parks and the residents of these states.
REVIEW OF LITERATURE

Chapter Overview

This chapter reviews previous research on topics related to information on health conditions prevalent in the United States, parks and recreational spaces, attendance at recreational locations, and an overview of economic potential within state and national parks. Subsequently, information will be provided on previous research at WSP, PJSP, and KSPR.

Health Conditions in the United States

The current health status of the American public is a topic of rapidly growing concern. Heart disease and type-two diabetes mellitus are two of the current leading causes of death in the United States, both of which can typically be mitigated through diet and exercise (Bowman et al., 2014). As curable diseases like type II diabetes, obesity, and heart disease increase, there is a greater need for research on health and physical activity (Godbey et al., 2009). The level of physical activity required to achieve general health for those over the age of 18 is described by the American College of Sports Medicine. Adults should exercise up to 150 minutes per week up to 5 days per week depending upon on intensity level (Garber et al., 2011). Exercises should encompass both cardiovascular conditioning and resistance training focusing on balance, coordination, and daily life movements (Garber et al., 2011).

Parks and Recreation

National parks are defined as “areas of special scenic, historical, or scientific importance set aside and maintained by a national government and in the United States by an act of Congress” (NPS, 2016). In early March of 1872, Yellowstone National Park became the first national park in the United States. Many others including Yosemite, Mt. Rainier, and Sequoia National Park were created shortly thereafter. These parks served as methods of preserving
public land interests for the benefit and enjoyment of United State citizens. In 1916, a new federal bureau under the Department of the Interior named the National Park Service was created. The National Park Service undertook the mission of preserving the resources and values of United States national parks and monuments. To date, there are fifty-eight U.S. national parks.

**Attendance**

Large quantities of data have been compiled on the demographics of park attendees. Surveys were administered in Termessos National Park, Turkey, strictly to acquire demographic data on park attendees (Savan and Osman, 2010). Other studies in Romania sought to determine and classify the difficulty and accessibility of specific national parks (Ovrieu et al., 2018). The majority of previous literature on national parks is concerned with factors which cause people to visit the site and what would cause them to return (Sæþórsdóttir, 2010). However, some studies focused on aspects which inhibit people from attending the park. A study in the United States utilized spatial analysis tools and cultural differences to examine both physical and perceived barriers to those attending national parks (Xiao et al., 2018). While there are considerable amounts of literature dealing with various national parks, there is minimal research concerned with determining the relationship between overall health and choice of travel location, and difficulty of terrain in U.S. state parks.

**Economics**

Substantial research on regional accessibility of Cozia Massif National Park in the southern Carpathians illustrated how different portions of the park could be best marketed for their economic potential (Ovrieu et al., 2018). Within this study, newly acquired areas were examined to determine how they could best be used to influence visitation. The level of
accessibility and difficulty of trails was used to help market the park for a wider group of individuals (Ovreiu et al., 2018).

Economic benefits from research on recreation have not only been traced to park services. 113.9 billion dollars have been spent on illnesses related to hypokinetic diseases in the United States (Williamson and Glick 2010). The lack of appropriate recreational spaces has been an issue for health care providers, insurance companies, and citizens (Williamson and Glick 2010). Public lands therefore offer economic opportunity through promoting tourism and improved public health, making them important sites of inquiry for research about user preferences and participation in physical activity.

**Recreation Opportunity Spectrum**

In order to measure the degree of rigorous physical activity available at each research site, this study employs the Recreation Opportunity Spectrum (ROS), a system for classifying and managing recreation opportunities based on the park’s physical setting, social setting, and managerial setting. The combination of the three criteria results in six different ROS classes. The classes are scaled from most to least primitive. The first classification is the Primitive class.

The area is 3 miles or more from all roads and trails with motorized use and generally 5,000 acres or greater in size or larger. The setting is essentially an unmodified natural environment with some evidence of trails. Motorized use is prohibited. The social setting provides for less than 6 parties encountered on trails and less than 3 parties visible from campsites. Capacities range from 0.5 to 1.0 RVD/acre/year. Onsite controls are extremely limited with most regulation accomplished off-site. Typical activities include hiking, horse packing, fishing, hunting and camping. The compatible VQO is preservation (Fs.usda.gov, 2019).
The next classification is the Semi-Primitive Non-Motorized class.

The area is 1/2 mile from all roads or trails with motorized use and generally exceeds 2,500 acres to 5,000 acres in size unless contiguous to wilderness. The area can include primitive roads and trails if they are usually closed to motorized use. Access roads are Level 1. The natural setting may have subtle modifications that would be noticed but would not draw the attention of an observer in the area. Structures are rare and isolated. The social setting provides for 6 to 15 parties encountered per day on trails and 6 or less parties visible at campsites. Onsite controls are present but subtle. Interpretation is through self-discovery with some use of maps, brochures and guidebooks. Typical activities include hiking, horseback riding, cross-country skiing, canoeing, hunting and fishing. The compatible VQO is retention (Fs.usda.gov, 2019).

The third class is Semi-Primitive Motorized.

The area is generally 2,500 acres to 5,000 acres in size, and 1/2 mile from Level 3 or better roads. There is strong evidence of roads and motorized use of roads and trails. Access roads are usually Level 1 or 2 roads. The natural setting may have moderately dominant alterations but would not draw the attention of motorized observers. Structures are rare and isolated. The social setting provides for a low to moderate contact with other parties. Capacity ranges from 1.5 to 2.5 RVDs/acre/year. On-site controls are present, but subtle. Interpretation is through very limited on-site facilities along with the use of guide maps, brochures and guidebooks. Typical activities include OHV touring, snowmobiling, hiking, horseback riding, cross-country skiing, hunting and fishing. The compatible VQOs are retention and partial retention (Fs.usda.gov, 2019).

The next classification is Roaded Natural.
The area is 1/2 mile or less from roads and trails open to motorized use. Resource modifications and utilization practices are evident but are harmonious with the natural environment. The social setting provides for moderate to high frequency of contact on roads and low to moderate frequency on trails away from roads. Capacity ranges from 10 to 20 RVDs/acre/year. On-site use controls are noticeable but are harmonious with the natural environment. Typical activities include, but are not limited to hiking, horseback riding, cross-country skiing, snowmobiling, OHV touring, trailer camping, hunting and fishing. The compatible VQOs are modification, partial retention and retention (Fs.usda.gov, 2019).

The next classification is Rural.

The natural environment is substantially modified to the point that developments are dominant to the sensitive observer. Structures are readily evident and may range from scattered to small dominant clusters. Pedestrian or other slow-moving observers are constantly within view of culturally changed landscapes. The social setting provides for moderate to high visitor contact. Capacity is estimated at 75 RVDs/acre/year. Controls and regulations are obvious, and law enforcement visible. Interpretation may be through more complex wayside exhibits including small lighted structures. Typical activities or facilities include, but are not limited to camping, fishing, information centers, convenience stores and resorts. The compatible VQOs are modification, partial retention and retention (Fs.usda.gov, 2019).

The final class is Urban. There are no recreational areas managed by the forest service that are considered urban, but several national and state parks are located within city limits (Fs.usda.gov, 2019).”)
Chapter Overview

The contents of this chapter provide insight on the basic locational attributes of each surveyed recreational area. Included will be a short history of where the parks are located, when they were established, why they were established, and what governing entity created them. A rudimentary background of each parks’ geology, climate, flora and fauna, attractions, and park amenities are included.

Wilson State Park (WSP)

Wilson State Park is situated in two locations on Wilson Lake in central Kansas. The lake was created by the Army Corps of Engineers in the early 1960’s to mitigate flood damage caused by the Saline River. Less substantial tributaries of the lake are Hell Creek and Elm Creek. The total surface area of the lake can vary from 9,045 acres when full to 33,882 acres when at maximum retention. Wilson Lake is located in the eastern central portion of Russel County bordering Lincoln County. The easternmost portion of Lake Wilson is within Lincoln County including the mouth of Hell Creek (Figure 1). According to the Kansas Department of Wildlife, Parks and Tourism (KDWPT), “Wilson State Park was established by the Kansas Legislature in 1966. The Hell Creek Area was established at this time. The state received Otoe Area in 1984 (Kansas Department of Wildlife, Parks and Tourism, 2019).” The Hell Creek area is located on the south eastern shore of Wilson Lake. It is comprised of an area office, a marina, eight campgrounds, two boat loading ramps, the Switchgrass Bike Trail, and the Dakota nature trail. Otoe Area is located on the north eastern shore of Wilson Lake. This area contains five campgrounds, one boat loading ramp, and the Cedar ADA trail. Both areas maintain campsites for tents and campers, but also have permanent on-site cabins, bathrooms, and running water. A
third area named Minooka Park is also located on the south-central shore of Wilson Lake, but is not managed by the KDWPT. In total, the park area spans 945 acres. As a result of its location in central Kansas, the park experiences a humid continental climate. Weather varies significantly throughout the year, with hot and humid summers, mild winters, and greater precipitation than most areas in Kansas.

Figure 1: ESRI, Wilson State Park

Petit Jean State Park (PSJP)

PJSP is located on Petit Jean Mountain in central Arkansas within the northern Arkansas River Valley bordering the Ouachita Mountains. The park is located in Conway County. According to the Arkansas Department of Parks and Tourism, PJSP was Arkansas’ first state park, with its establishment dating back to 1923 (Arkansasstateparks.com 2019). The primary attractions of PJSP are hiking, sightseeing, and leisure stays such as camping and RVing. Hiking trails range from a quarter mile loop up to 12 miles with varying levels of accessibility. With the
largest portion of the parks’ amenities being located on the edges of the mountain top where the underlying shales and sandstones from the Ouachita Mountains are often exposed. Located within the park boundaries are several historic buildings, petroglyphs, lodges, campsites, bath houses, a restaurant, hotel, swimming pool, manmade lake, and a combined tennis and basketball court. The most commonly visited areas within the park are Mather Lodge and the 100-foot Cedar Creek waterfall. The park is comprised of 3471 total acres with a humid, subtropical climate (Encyclopedia of Arkansas, 2019). Temperature, humidity, and precipitation are high on average in Conway County resulting in a flora rich environment. The area is dominated by deciduous forest, but also contains several patches of pines and cedars. Commonly viewed wildlife within the park include whitetail deer, cottontail rabbits, and both fox and grey squirrels (Arkansasstateparks.com 2019).

*Figure 2: ESRI, Petit Jean State Park*
Kiholo State Park Reserve (KSPR)

KSPR is located on the north western shore of Hawaii county, Hawaii on Kiholo Bay. KSPR is under plans to be labeled as a State Wilderness Park (SWP) according to the Hawaii Department of Natural Resources (Dlnr.hawaii.gov, 2019). SWP’s are defined as “Areas possessing a natural, primitive character without human habitation and offering passive wildland recreation, such as hiking and primitive camping. Wilderness parks should be of a large size so as to provide solitude in a natural setting and a sense of unconfined space. Wilderness parks tend to be remote with limited access and minimal park facilities for public health and safety, such as self-composting toilets” (Dlnr.hawaii.gov, 2019). KSPR contains 40 miles of unnamed trails, one campground area, and several porta-potties. As a result of previous volcanic activity, most recently in 1859, both pahoehoe and aa lava flows are visible and accessible throughout large areas of the park (Rubin, 2019). The Kiholo Bay area experiences rainforest Koppen climate classification. Due to the parks’ location on the leeward side of the island, it experiences less frequent rainfall, on average, 11 inches per year. The environment of the park reflects this, containing desert vegetation and minimal undergrowth. Commonly viewed wildlife within the park included feral goats, Erckel’s Francolins, Indian Mongoose, sea turtles, spotted eagle rays, and over thirty species of reef fish. Of these groups, only the aquatic species were endemic.
Figure 3: ESRI, Kiholo Bay
METHODS

Chapter Overview

This chapter contains information regarding how data for this research were compiled and analyzed. First, subject selection and survey administration are discussed. Next, information on the mediums through which the surveys were collected and analyzed are discussed. Finally, operational procedures and what analysis were used to examine the park relationships are explained.

Participant Selection

Subjects for this research were volunteer participants attending one of the three study area park locations between the months of May and July. Prospective subjects were approached by the Principle Investigator (PI) and Collaborative Institutional Training Initiative trained Fort Hays State University (FHSU) professional and asked if they were interested in completing a survey based upon overall health and state park travel. Volunteers that were above the age of 18 and had consented to freely take the survey were given one of three iPads containing the survey using the Qualtrics application. Participants were told that all answers were anonymous and there was no identifiable information to track participants responses back to them (appendix A). Participants were also informed that if they were uncomfortable with any questions, they were free to omit their response and could stop the survey at any time with no consequence.

Survey

All subjects were administered surveys on one of three iPads provided by the PI. Due to a lack of wireless internet in all three parks, this study required participants to use the offline Qualtrics application. Once wireless internet was available, responses for each of the collected surveys were moved online. Qualtrics online data collection and analysis platform was used to
store responses and perform averages and to create graphical comparisons. To simulate uniformity, participants were instructed to fill the survey out individually without the consultation of other participants to account for possible persuasion of responses.

**Operational Procedures**

Surveys were administered by the PI and CITI trained research assistants through the Qualtrics offline application on an iPad. Surveys were administered at several locations in each park to avoid a possible bias for a particular attraction. This allowed for equal sampling throughout the park, even if populations were heaviest around one area. In total, 242 completed questionnaires were collected at WSP (84 participants), PJSP (80 participants), and KSPR (77 participants). The primary reason for varying numbers of participants was directly related to the amount of time available for survey administration in the different states. WSP had the most participants as a result of proximity to the PI. To protect respondent confidentiality, no personal identifying information was collected.

The survey was composed of twenty questions, including a mixture of multiple choice, yes or no, and short answer questions (for full details of each question, see Appendix B). The survey was designed to be completed quickly, aiming for an average time of five minutes per participant. Prior to taking the survey, participants were welcomed and provided with a brief background of the study. Participants were then asked several questions to determine what park they were attending and why they attended that specific park. The survey questions included topics to determine exercise frequencies, what activities they perform when they exercise, whether they consider themselves to be in overall good health, and if they have any medical conditions that would inhibit strenuous physical exercise. If the participant elected to not answer health related questions, the Qualtrics survey used skip logic to move them into the demographic
questions section. Included in this portion of the survey were inquiries regarding race/ethnicity, gender, level of education attainment, average annual income, age, political affiliation, area of employment, and current zip code. Prior to analysis, responses were cleared of any irrelevant characters, such as spaces, capital letters, and punctuation, for compatibility with the software.

**Statistical Analysis**

The PI constructed a three-point ranking system to classify park difficulty level and overall health. Park difficulty level was determined by terrain, accessibility difficulty, and a ranking from the ROS. Overall health criteria included averages of exercise hours, frequency of exercise, and health conditions at each park.

The PI transferred the data to SAS for analysis. An Analysis of Variance (ANOVA) was used for quantifying park difficulty rankings and overall health. This analysis was selected due to its ability to determine whether there are any statistically significant differences between the means of two or more independent unrelated groups (Statistics.laerd.com, 2019). Other criteria for selection of the ANOVA test was supported from previous literature on health and recreation (Chiesura, 2004). The test was used in an effort to determine how three categories influenced decisions for recreation at urban parks in Amsterdam (Chiesura, 2004). Additionally, a Spearmen correlation test was used to determine whether selected variables were related. All data were analyzed at the .05 level of significance. ANOVA results were compared among Wilson State Park and Petit Jean State Park, Wilson State Park and Kiholo State Park reserve, and finally Petit Jean State Park and Kiholo State Park reserve.
RESULTS

Park Difficulty

After data collection, rankings to determine the parks’ physical difficulty were assigned using the ROS, analysis of topography through the use of a Geographic Information System (GIS), and on-site experience regarding accessibility.

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<th>WSP</th>
<th>PJSP</th>
<th>KSPR</th>
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<td>ROS</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Accessibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Terrain</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total Score:</td>
<td>3</td>
<td>6</td>
<td>9</td>
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Through the use of the ROS, the parks were assigned a rank of one through three, with three being the most physically difficult. KSPR was selected as the most difficult due to its representation as Semi-Primitive Non-Motorized. The area is 1/2 mile from all roads or trails with motorized use and generally exceeds 2,500 acres to 5,000 acres in size unless contiguous to wilderness. The area includes primitive roads and trails that are closed to motorized use. The natural setting has subtle modifications that would be noticed but would not draw the attention of an observer in the area; structures are rare and isolated. The social setting provides for six to fifteen parties encountered per day on trails and six or less parties visible at campsites. Onsite controls are present but subtle. Interpretation is through self-discovery with some use of maps, brochures, and guidebooks. Typical activities include hiking, canoeing, hunting and fishing.
Petit Jean State Park received a rank of two on the ROS due to its selection as Roaded Natural. The area is 1/2 mile or less from roads and trails open to motorized use. Resource modifications and utilization practices are evident but are harmonious with the natural environment. The social setting provides for moderate to high frequency of contact on roads and low to moderate frequency on trails away from roads. Capacity ranges from 10 to 20 RVDs/acre/year. On-site use controls are noticeable but are harmonious with the natural environment. Typical activities include, but are not limited to hiking, horseback riding, OHV touring, trailer camping, hunting, and fishing.
WSP was given a rank of one on the ROS as a result of its selection as Rural. The natural environment is substantially modified to the point that developments are dominant to the sensitive observer. Structures are readily evident and may range from scattered to small dominant clusters. Pedestrian or other slow-moving observers are constantly within view of culturally changed landscapes. The social setting provides for moderate to high visitor contact. Capacity is estimated at 75 RVDs/acre/year. Controls and regulations are obvious, and law enforcement visible. Interpretation may be through more complex wayside exhibits including small lighted structures. Typical activities or facilities include, but are not limited to camping, fishing, information centers, convenience stores, and resorts.
Figure 6: ESRI, Wilson Trail Distance

Assessment of the park terrain was also discerned during the on-site visit. KSPR received a three for this category for several reasons. The landscape was composed of primarily rough pahoehoe and aa lava flows, and the areas not dominated by these igneous rocks were composed of loose sand which participants found difficult to traverse over long distances. PJSP was specified as a two for terrain due to its mountainous location. Although there was a noticeable human imprint on the land, those attempting to hike and visit attractions had to walk on very uneven, and often steep shales and sandstones dominating PJSP Mountain. WSP was selected as the lowest level of difficulty for terrain due to prominent trails having a low relief and often being paved.
Park accessibility was the final category explored. Accessibility was also determined on site by the PI. KSPR received a rank of three, PJSP a rank of two, and WSP a rank of one. Access to KSPR was given a rank of three due to its lack of any paved roads or trails. PJSP received a rank of two as a result of most attractions being accessible by paved or maintained gravel roads. WSP received a rank of one with trails being certified by the Americans with Disabilities Act (ADA), and nearly all amenities being available to those with mobility impairments.

**Hours of Exercise Per Week**

Average weekly exercise rates among survey participants were similar amongst respondents surveyed at KSPR, PJSP, and WSP. The mean exercise rate for WSP participants was 3.36 hours per week, followed by KSPR participants with 3.32 hours of exercise per week. PJSP showed the lowest rate of exercise with the mean of 3.11 hours of exercise per week. Figure 7 below shows the results of survey question number nine, “How many hours of exercise do you perform per week?”
Figure 7: Hours of Exercise Per Week: KSPR PJSP WSP

Type of Exercise

Although WSP exhibited a slightly higher rate of exercise per week, it had the lowest concentration of participants who reported performing cardiorespiratory, resistance, and stretching during his or her exercise routine. WSP survey results showed 40 percent of participants did not participate in cardiorespiratory, resistance and flexibility while 60 percent of participants did. Petit Jean State Park survey results showed 32.5 percent of participants did not participate in cardiorespiratory, resistance and flexibility while 67.5 percent of participants did. KSPR survey results showed 21 percent of participants did not participate in cardiorespiratory, resistance and flexibility while 79 percent of participants did. Figure 8 below shows the results of
the survey question number 10, “When exercising, do you perform cardiorespiratory (running, cycling, swimming), resistance (weight training), and stretching exercises?”

![Pie charts for Kiholo State Park, Petit Jean State Park, and Wilson State Park showing the percentage of participants who perform various types of exercises.]

*Figure 8: Type of Exercise: KSPR PJSP WSP*

**Health Perceptions**

General health perceptions were also similar among KSPR, PJSP and WSP. The largest percentage of participants at every park reported that they were “probably in good health.” The second largest group stated that they were “definitely in good health.” Figure 9 below shows the results of the survey question number 11, “Do you consider yourself to be in good health?”
When asked how often participants made plans centered around rigorous physical activity, there was a difference in mean answers between the parks. KSPR participants reported a higher likelihood of engaging in strenuous physical activity for vacations with over half of the total surveyed population stating that they “often” or “always” make physically rigorous vacation plans. WSP showed the highest numbers in the categories of “sometimes”, “seldom”, or “never.” PJSP showed the smallest differences between categories, with the highest percentages being in favor of travel centered around physical activity. Figure 10 below shows the results of the survey question number 12, “When planning vacations or trips how often do you make plans involving rigorous physical activity?”
Medical Conditions Inhibiting Physical Activity

Health issues that could possibly inhibit physical exercise varied greatly throughout the parks. In total, 145 out of the 242 (60 percent) participants surveyed reported having a medical condition that would impede his or her ability to exercise in some way. These health issues dominated the participants of WSP with 86 percent of participants surveyed at the park reporting one of the ailments. PJSP also had a large number of individuals with one or more of the health issues. Fifty-six percent of respondents reported one of the conditions. KSPR had the lowest levels of self-reported medical conditions, with only 36 percent of participants reporting one of the health-related issues. Figure 11 below shows the results of the survey question number 21, “Do you have any of the following medical conditions which would inhibit physical exercise?”
Other State Park Attendance

Participants’ attendance at state parks other than WSP, PJSP, and KSPR was varied; some participants had attended numerous state parks while other participants had not attended any other state parks. The question, “What other state parks have you previously attended?” was included within the survey in an attempt to gather information on recreational choices of each participant. Twenty-five percent of participants had not attended any other state parks. It was common for participants to report having attended National Parks and other popular recreational areas that may not have achieved national or state park status. Due to high rates of tourism in Hawaii, participants often detailed visits to state or national parks in other countries. Most participants reported attendance at local parks and those from their closest neighbors in the
Pacific Northwest. Both PJSP and WSP showed strong attendance to other state parks within reasonable driving distance that did not require venturing outside of state boundaries. At WSP, 47 percent of total participants reported having only attended a state park in Kansas or a bordering state, PJSP closely followed with over 20 percent. Question 9 on the survey asked participants why they chose to attend each specific park in short-answer format.

**Ethnicity**

Ninety-eight percent of surveyed participants at WSP identified as white; therefore, results did not show much ethnic diversity. KSPR showed the most variance with 10 percent of individuals who claimed other, African American or Black, American Indian or Alaska Native or Asian or Pacific Islander. PJSP was primarily Caucasian but had a larger African American representation. There were no Hispanic or Latino participants. Figure 12 below shows the results of the survey question “Please select your ethnicity?”
Gender

The gender of participants surveyed was close to 50 percent male and 50 percent female at each of the three parks. Total numbers for all participants showed 122 males and 120 females with zero identifying as transgender. Figure 13 below shows the results of the survey question number 14, “What is your gender?”
Each park showed a high amount of college graduates with a bachelor’s degree being the most common level of education at all locations. PJSP had the most people with a bachelor’s degree and a high school diploma but had the lowest number of participants with a graduate degree. WSP had the most people with an associate’s degree or trade school background, and KSPR held the greatest concentration of those who had obtained a graduate degree. Figure 14 below shows the results of the survey question “Please select the greatest level of education you have attained?”
Each park had a wide variety of household income. The most prevalent (28 percent) income range for KSPR was 50,000-74,999 dollars. The most prevalent (25 percent) income range for PJSP was 25,000-34,999 dollars. Finally, the most prevalent (25 percent) income range for WSP was 50,000-74,999 dollars. Both KSPR and WSP had 20-21 percent of the surveyed population making 100,000 dollars or more. WSP and KSPR also had 13-15 percent of the surveyed population making less than 11,999 dollars. PJSP had a smaller spread of income ranges than both KSPR and WSP. Figure 15 below shows the results of the survey question, “Please select your level of income.”
Political Affiliation

Political affiliation varied considerably throughout the three parks. Those visiting KSPR had the most even splits between selected political affiliations. 25 percent identified as Democrat, 18 percent as Republican, 13 percent as Independent, nine percent as another affiliation not listed in the survey, and four percent as Libertarian. However, 29 percent stated that they had no political affiliation at all. WSP State Park was heavily dominated by Republican participants with 71 percent of the total surveyed participants. The next closest groups being
Independents with 12 percent, Democrats with six percent, Libertarians with five percent, and other with five percent. PJSP State Park was also primarily Republican, but by much smaller margins with 36 percent claiming to be Republican. Following closely were those selecting Democrat with 27 percent. Thirteen percent chose Independent, eight percent selected Libertarian, and four percent selected other. Twelve percent of participants at PJSP had no political affiliation. Figure 16 below shows the results of the survey question, “Please select your political affiliation.”

Figure 16: Political Affiliation
STATISTICS

Results of the ANOVA for hours of exercise performed showed an F-value of 0.2562; therefore, the difference between means was not statistically significant and the null was retained. This indicates that the mean hours of exercise between the three parks were the same.

The following shows the results of the ANOVA.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>2</td>
<td>5.597</td>
<td>2.799</td>
<td>1.37</td>
<td>0.256</td>
</tr>
</tbody>
</table>

Table 1: ANOVA: Hours of Exercise Per Week: KSPR PJSP WSP

Results of the ANOVA for types of exercise performed showed an F-value of 0.0489; therefore, the difference between means was statistically significant and the null was rejected. This indicates that the mean type of exercise performed between the three parks were the different. The following shows the results of the ANOVA.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1.2969</td>
<td>0.6484</td>
<td>3.06</td>
<td>0.256</td>
</tr>
</tbody>
</table>

Table 2: ANOVA: Types of Exercise Performed: KSPR PJSP WSP

Results of the ANOVA for mobility limiting impairments showed an F-value of 0.0300; therefore, the difference between means was statistically significant and the null was rejected. This indicates that the mean mobility limiting impairments between the three parks were the different. The following shows the results of the ANOVA.
Table 3: ANOVA: Mobility Limiting Impairments: KSPR PJSP WSP

The Spearman Correlation test showed a correlation between only mobility limiting impairments at WSP and PJSP (r=0.9619). No other correlations were present when analyzed at the .05 level of significance.
DISCUSSION

Chapter Overview

This chapter contains information regarding observations on aspects of the study results. These observations include both bivariate analysis from questions in the survey as well as conclusions obtained during the on-site park visits.

Health/Wealth

It is often speculated that there is a connection between a person’s health and income. Within this study, participants who performed zero hours of exercise per week were the largest group reporting less than 11,999 dollars annually. Participants that exercised between one and six hours per week had an income of greater than 50,000 dollars. Those who reported performing all three major types of exercise made more than the median household income of 63,179 dollars. The financial brackets showing the largest concentrations of mobility limiting impairments were those reporting from 35,000-74,999 dollars annually. Figure 17 depicts the relationship between health and income.

Figure 17: Health and Income
Political Affiliations

The most selected political affiliation across the three parks was republican. WSP was the most heavily dominated by republican participants with 71 percent of total participants identifying as republican. This is likely a result of the rural nature of the park. PJSP also had a large percentage of Republican participants. However, the second largest group selected Democrat. Proximity to large cities like Little Rock, AK may have influenced these groups. KSPR held the largest population of those who identified as Democrats, but the most selected category for the park was “No Political Affiliation.” The responses for “No Political Affiliation” could have been a result of Hawaii being a very popular travel destination. Greater ethnic and cultural diversity leads to a variety of affiliations. A large portion of those who selected “No Political Affiliation” had countries of origin outside the United States, which resulted in some confusion articulating their political affiliation. Figure 18 provides a graphic of participant affiliation by park.

Figure 18: Political Affiliation By Park
Health Culture

Results of the survey followed general trends of health across the three states. Data from the Centers for Disease Control and Prevention (CDC) was used to identify the healthiest and least healthy states in the union (Manley, 2019). These results included but were not limited to exercise, type of exercise, mobility impairments, mental health, infant mortality rate, mortality rate, obesity rate, smoking rate, and suicide rate. According to the most recent data Hawaii is the fourth healthiest state, followed by Kansas at 27, and Arkansas at 49.

Weather

Weather during the research period varied greatly between the three parks. Although weather was mild, in the early stages of the season WSP had torrential rains. Due to the creation of Wilson Lake as a buffer for flooding to surrounding areas, WSP is susceptible to flooding. Several docks, boat ramps, campgrounds, and other park amenities were flooded during May and June 2019. Wilson was not the only area in Kansas to experience extreme flooding. Many tributaries of the Arkansas River near PJSP also flooded, resulting in only one entrance to the park during the research period. Weather at KSPR was primarily sunny and only caused minimal issues such as keeping iPads away from light rains.

Park Attendance

The amount of time that was required to spend at each state park location varied for several reasons; the primary issue being varying levels of park attendance. Public records of how many people visit each of the three parks are not provided. Through on-site observation, PJSP had the most visitors, followed by KSPR, with far fewer individuals attending WSP during the times surveys were collected. Research time for each location also varied due to limited funds for travel, and expiration of research permits.
Impairment Hotspots

Physical impairments that limit or hinder physical activities followed the same trends characterized by the CDC data on wellbeing in each state. KSPR maintained the lowest levels of health issues in each category. WSP showed the highest number of total physical impairments, with the most reported being 23 percent participants having arthritis. Arthritis is a common affliction among aging people, and WSP had an average age 53.3 years showing the oldest general population of the three parks. The highest number of people reporting obesity were located at PJSP in Arkansas, the state with the seventh highest obesity rate in the United States. The obesity rate within the state is 35 percent, but the population participating in the survey only demonstrated a rate of 12.5 percent. This could be because the individuals choosing to attend the recreation park were more active than the general population.

Occupation

At all three parks, most people, 50.83 percent, reported to be employed in the services and public sector. This was not surprising as those two sections encompass a very broad category of jobs. The most notable groups not related to services or the public sector were both located in WSP. Thirty percent of the surveyed population at WSP worked in communications or for energy/utility companies. There are two competing local telecommunication companies within 20 minutes of Wilson Lake. The areas around WSP also rely on oil and gas resource extraction for employment.

Income

WSP narrowly reported the highest average incomes within the survey followed closely by KSPR. WSP participants recorded 43.59 percent of surveyed participants being in the highest selectable category of over 100,000 dollars annually. KSPR was expected to show high incomes.
since Hawaii has traditionally been an expensive travel destination due to its geographic location. Median household income in the state of Hawaii is 77,765 dollars. WSP showed an average well above 56,422 dollars which is the median household income in Kansas. This could possibly be a result of the lakes prominence as a more luxurious lake with infrastructure for wealthier individuals to work on, store, and live on boats within the marina. PJSP had the highest concentrations of individuals making less than 34,999 dollars annually. Arkansas has the lowest median household income of 45,896 dollars.

Education and Income

Education attainment and income followed a trend in this research. Those with a high school diploma or GED had only 3.72 percent of the total surveyed population making more than 50,000 dollars. Those with an associate degree or trade school training had 19 people making more than 50,000 dollars. Those with a bachelor’s degree had 49 people making over 50,000 dollars, and those with a graduate degree had 30 people making over 50,000 dollars. Zero participants with a graduate degree reported making less than 11,000 dollars. Figure 19 examines the relationship between education and income.

![Figure 19: Education and Income](image-url)
Education and Interest

Education has a notable relationship with income and health, but it also affected whether participants would take the survey and how diligently they would respond to the questions. When discussing the purposes of the survey to educated individuals, there was a greater understanding of how the survey would be used and the importance of their participation. Many individuals that were approached were fearful of possible negative future results from supplying their information.

Ethnic Variance

Variability of ethnicity within WSP was minimal; only one participant did not identify as white or Caucasian. However, this is indicative of the surrounding populations, and WSP’s reputation as local recreation area as opposed to a travel location. PJSP was also primarily white, but the African American and Hispanic population were also represented. This could be a result of the parks proximity to an urban center. KSPR was the most ethnically diverse of the three parks, with more representation of those who identified as African American or black, Asian or Pacific Islander, and Other. This total group represented 29.8 percent of those surveyed at KSPR. More prominent diversity is due to great deals of tourism, and the Kiholo bay being a prominent gathering area for Native Hawaiians.

Travel with Children

One of the most common reasons for visitation to the state park locations was for a family related vacation. From the survey, roughly 30 participants at each park consistently attended the sites in order to expose children or grandchildren to the location. These attributes ranged from health benefits of outdoor recreation, to educational attainment on historical, geographical, and geologic components for which each park was constructed. Through on-site
observation, the largest number of children observed were located within PJSP. This park is close to several urban centers. Little Rock, Arkansas is 67 miles southeast of PJSP and has a population of 198,606. Russellville, Arkansas is only 25 miles from the park and has a population of 28,000 (Arkansasstateparks.com 2019). PJSP, Hot Springs National Park, and the Ouachita National Forest are prominent areas of recreation and leisure, close to these large urban centers, making travel and planning with young children more accessible. WSP does not have an urban area above 20,000 people within over 50 miles. KSPR is within 30 miles of the largest urban area on the western portion of the “Big Island,” but travel to the area for large groups of non-locals can be very expensive when airfare, lodging, and meals are considered.

Leisure vs. Recreation

While the goal of the research was primarily to focus on how park difficulty related to participant health, it is important to note that healthy individuals may not have been participating in any form of rigorous activity. While recreation and leisure are similar in the purpose of personal enjoyment and renewal of the mind, leisure is more commonly referred to as free time, while recreation is associated with physical activity (Lumpkin, 2016). In all three park locations, individuals may have chosen to only participate in leisure related activities that require no physical activity, such as sunbathing.

Health and Education

Education from various sources can affect health literacy. Low health literacy skills can lead to issues, such as lack of access to health information, health care, medicine use, and prevention of disease. Health literacy is a commonly addressed subject in high school and college education. There is a relationship between lack of education and poor health. The largest
population of participants who performed zero hours per week were those with only a high school diploma, or education through a community college or trade school.

**Survey Bias**

Test subjects were able to skip responses to survey questions and participants may not have been honest or disclosed information accurately; therefore, results may be skewed due to the social desirability bias. This bias state that when participants are aware that they are being surveyed, they will report more favorable answers due to wanting to be seen in a more positive manner (Pauls, 2003). In relation to the current study, participants may have stated they were more or less active than they truly are. Sampling biases may have been present due to the nature of survey collection. Individuals that were more approachable took the survey more readily than people who were distracted or not socially engaged. iPads were used to administer survey questions due to their ease of use, allowing the surveyors greater speed of survey collection, but this may have limited the surveyor’s ability to speak with people performing certain rigorous activities. Internal validity was taken into consideration while creating this study by allowing all participant answers to be confidential.

**Survey Timing**

Timing of survey collection likely influenced survey participation. To maximize efficiency of research time, the surveys at WSP were collected before peak travel season in early spring before the weather was ideal for lake activities. This could have affected the health levels of participants in several ways. For example, weather would not allow for several of the parks’ common exercise related themes, such as swimming and mountain biking. This means that visitors were involved in different sedentary recreational enterprises such as camping or fishing, not necessarily depicting the most common activities within the parks. Surveys were collected at
PJSP in late June and early July. The park is in dense vegetation and has high temperatures and humidity at this time of the year. Participants were more willing to take the survey in the early morning or late evening hours when temperatures were coolest and the greatest possibilities for recreation were provided. Survey collection at KSPR was done in late July, which is one of the state’s busier travel periods. This could have resulted in higher than average numbers at the park and more tourists being exposed to the survey than locals.
CONCLUSION

Chapter Overview

This chapter consists of two sections. The first section discusses the overall conclusion of this thesis. This section will focus on the main conclusion and how it was reached. The final section focuses on recommendations for future studies of health and public parks.

Conclusions

The purpose of this study was to determine whether state park selections were determined by user health. In this study, a survey was administered to 242 total participants at WSP, PJSP, and KSPR. The survey asked questions about the participant’s demographic information and questions pertaining to physical health. Descriptive data indicated variations between two of the three predetermined measurements of park visitor health, mobility impairments, and type of exercise performed. The hypothesis was less healthy individuals were more likely to select or attend parks of lower difficulty. Statistical results of the ANOVA indicated no significant difference between the other predetermined measurements of physical health, average weekly exercise.

Findings of this study proved similar to the reports of the CDC regarding the current health of States of the Union (Manley, 2019). Overall, the health of participants did influence which parks they chose to attend. Although statistically, the mean number of hours participants exercised at each park was similar.

Implications from this study may be used by health care providers in their recommendations for physical activity. For example, if a person wanted to increase his or her cardiovascular fitness, a health care professional could recommend utilizing a state park with
recreational amenities, such as PJSP. State park governing entities may also use this information to help determine what amenities they should offer, what areas are lacking, and whether the situation should be improved. For example, WSP showed a great number of participants attending the park for boating activities. By knowing this information, WSP governing authorities could apply finances toward increasing docks and loading structures while lowering funding for trail maintenance.

**Recommendations for Future Studies**

In order to make further assessments on whether state parks are selected by participant health, multiple steps will need to be taken. The survey given could be altered to provide information in a way that is more statistically quantifiable. For example, utilizing more closed-ended questions rather than open-ended questions. Also, conducting statistical calculations utilizing a MANOVA rather than an ANOVA. The study would need to be duplicated at KPSR, PJSP, and WSP with a greater number of participants over multiple seasons to provide a greater representation of the park’s population. Future research to determine relationships would require a similar approach throughout a wider variety of parks and terrains.

While this study does provide useful information about WSP, PJSP and KSPR health and travel, it also provides an insight into other research needs. In order to fill gaps in research, more surveys at different state parks need to be conducted. If a greater pool of information about health and park travel were available, authorities dealing with state parks could better determine what types of participants attend the parks and why. With this information, governing bodies could better utilize their funds, creating more successful financial decisions. Understanding information on health in relation to travel could also be used by health care professionals in their
recommendation of recreational activities in relation to health. Overall, this study provided useful information on a subject not well studied.
REFERENCES


Dlnr.hawaii.gov. 2019. *Department of Land and Natural Resources | Search Results | kiholo state park reserve*. [online] Available at: https://dlnr.hawaii.gov/?s=kiholo%20state%20park%20reserve&type=network&searchblogs=1,3,4,5,6,7,8,9,11,12,13,14,16,17,18,19,20,21,22,27,29,30,31,32,33,34,35,37,38,39,40,41,43,44,45,46


### OFFICE OF SCHOLARSHIP AND SPONSORED PROJECTS

**APPENDIX**

**Appendix A: IRB Approval Letter**

<table>
<thead>
<tr>
<th>DATE:</th>
<th>February 21, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO:</td>
<td>Connor Phelan</td>
</tr>
<tr>
<td>FROM:</td>
<td>Fort Hays State University IRB</td>
</tr>
<tr>
<td>STUDY TITLE:</td>
<td>[1383438-1] Correlations Between Overall Health and State Parks Travel</td>
</tr>
<tr>
<td>IRB REFERENCE #:</td>
<td>19-0079</td>
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<tr>
<td>SUBMISSION TYPE:</td>
<td>New Project</td>
</tr>
<tr>
<td>ACTION:</td>
<td>DETERMINATION OF EXEMPT STATUS</td>
</tr>
<tr>
<td>DECISION DATE:</td>
<td>February 21, 2019</td>
</tr>
<tr>
<td>REVIEW CATEGORY:</td>
<td>Exemption category # 2</td>
</tr>
</tbody>
</table>

Thank you for your submission of New Project materials for this research study. The departmental human subjects research committee and/or the Fort Hays State University IRB/IRB Administrator has determined that this project is EXEMPT FROM IRB REVIEW according to federal regulations.

Please note that any changes to this study may result in a change in exempt status. Any changes must be submitted to the IRB for review prior to implementation. In the event of a change, please follow the Instructions for Revisions at [http://www.fhsu.edu/academic/gradschl/irb/](http://www.fhsu.edu/academic/gradschl/irb/).

The IRB administrator should be notified of adverse events or circumstances that meet the definition of unanticipated problems involving risks to subjects. See [http://www.hhs.gov/ohrp/policy/AdvEvntGuid.htm](http://www.hhs.gov/ohrp/policy/AdvEvntGuid.htm).

We will put a copy of this correspondence on file in our office. Exempt studies are not subject to continuing review.

If you have any questions, please contact Leslie Paige at lpaige@fhsu.edu or 785-628-4349. Please include your study title and reference number in all correspondence with this office.
Appendix B: Qualtrics Survey

State Parks Survey
Welcome to the research study!

We are interested in understanding correlations between overall health and state parks tourists travel to. You will be presented with a survey relevant to general health and state park travel, then asked to answer some questions about it. Please be assured that your responses will be kept completely confidential. The study should take you around five minutes to complete. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Connor Phelan at cjphelan@mail.fhsu.edu. By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason. Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

☐ I consent, begin the study

☐ I do not consent, I do not wish to participate

Which park are you currently attending?

☐ Kiholo State Park

☐ Petit Jean State Park

☐ Wilson State Park
How many hours of exercise do you perform per week?

- 0
- 1-3
- 4-6
- 7-9
- 10-12
- 13 or more

When exercising, do you perform cardiorespiratory (running, cycling, swimming) resistance (weight training), and stretching exercises?

- Yes
- No

When exercising, how often do you perform these activities?

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Most of the time</th>
<th>About half the time</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardio</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>Cycling,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Do you consider yourself to be in overall good health?

- Definitely yes
- Probably yes
- Might or might not
- Probably not
- Definitely not
- Don't Know

When planning vacations or trips how often do you make plans involving rigorous physical activity?

- Always
- Often
- Sometimes
- Seldom
- Never
Do you have any of the following medical conditions which would inhibit physical exercise?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Select all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Condition</td>
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<tr>
<td>Lung Condition</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td></td>
</tr>
<tr>
<td>Mobility Impairment</td>
<td></td>
</tr>
<tr>
<td>Arthritis</td>
<td></td>
</tr>
<tr>
<td>Spinal Condition</td>
<td></td>
</tr>
<tr>
<td>Chronic Pain/Fatigue</td>
<td></td>
</tr>
</tbody>
</table>

What other state parks have you attended?

________________________________________________________________

Why did you choose to attend this park/parks?

________________________________________________________________
What is your race/ethnicity?

- White or Caucasian
- African American or Black
- American Indian or Alaska Native
- Asian or Pacific Islander
- Other

Are you Hispanic or Latino?

- Yes
- No

What is your gender?

- Male
- Female
- Transgender

What level of education have you attained?

- High School Diploma/GED
- Associates Degree/ Trade School
- Bachelors Degree
- Graduate degree
- None of the above
What is your average annual income?

- Less than $11,999
- $12,000 to $24,999
- $25,000 to $34,999
- $35,000 to $49,999
- $50,000 to $74,999
- $75,000 to $99,999
- $100,000 or More

What is your age?

________________________________________________________________

What is your political affiliation?

- Republican
- Democrat
- Independent
- Libertarian
- Other
- No political affiliation
In what area are you employed?

- Communications
- Construction
- Public Sector
- Services
- Manufacturing
- Agriculture
- Energy/Utilities
- Military
- Transportation

In what zip code is your current residence?

________________________________________________________________
Friday, March 01, 2019

This is to serve notice that Connor Phelan has permission to take surveys in Wilson State Park to complete his thesis about Physical Activity and State Park.

Willis Ohl
Park Manager
Wilson State Park
KDWPT
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF STATE PARKS
PERMIT
PERMIT NO. H0519-19

SPECIAL USE PERMIT - CONDUCT SURVEYS OF
PERMIT TYPE: PARK VISITORS

Revision No. 0

ISSUED TO:
PHELAN, CONNOR
600 PARK STREET
HAYS, KANSAS 67601

CONTACT NAME: CONNOR PHELAN
Home No.: -
Cellular No.: (970) 640-1023
Business No.: 

EMAIL ADDRESS: cjphelan@mail.fhsu.edu
Emergency Contact:
Name: 
Phone: 

ASSIGNED AREA: ISLAND: Hawaii
Park: KIHOLO STATE PARK RESERVE
Site: SEE ATTACHED EXHIBIT A

DATE AND TIME PERIOD:
Date: From: 7/22/2019 To: 7/29/2019
Time: From: 7:00 AM To: 7:00 PM

NUMBER OF PERSONS: 1

Special Conditions:
Except as otherwise specified on permit. Use of premises is not for exclusive use of park and includes setup/cleanup times. Permitee must clean up area used. PROHIBITED ACTIVITIES: NO 1) Drinking, Use or Sale of Alcoholic beverages; 2) commercial activities and/or money collection; 3) pets or animals except service dogs as defined by the DOJ under the ADA, which are providing service functions; 4) driving vehicles into picnic areas; 5) erecting tents/additional structures. There are no emergency/first services at this park. Smoking and the use of tobacco products and electronic smoking devices is prohibited in state parks. REMOTE AREA - no security personnel, no emergency or lifeguard services at this park. No open fires except in designated rock fire rings provided at campsites. No cutting of trees/shrubs for firewood - bring your own or gather fallen wood from ground only. No telephone, no water - bring plenty of drinking water. WHEN ENTRANCE GATES ARE LOCKED FOR THE NIGHT, VEHICLES WILL NOT BE ABLE TO ENTER OR LEAVE THE PARK. Gate closed from 7:00 pm to 7:00 am April 1 to Labor Day. For emergencies call 911. Permits are not transferable. Permitee agrees to abide with the special conditions and the Park Rules and Permit Conditions.

ATTACHMENTS:
SEE ATTACHED SPECIAL CONDITIONS AND EXHIBIT A.

I understand and agree to abide with all general rules (see reverse side) and special conditions. All information presented by me in my application request, including any attachments(s), is to the best of my knowledge accurate and correct:

PERMITTEE SIGNATURE: [Signature]

DIVISION APPROVAL:

[Signature] Administrator/District Superintendent - Division of State Parks

DEPARTMENT OR BOARD OF LAND AND NATURAL RESOURCES APPROVAL (if required):

Chairperson, Department of Land & Natural Resources

Distribution: White-Permittee; Yellow-SP; Blue-Park

6-9-19

DATE

5/8/2019

DATE

Issued by: LMK

Issued date: 5/8/2019
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