

THE EFFECTS OF A SUMMER CAMP PROGRAM ON YOUTH CONNECTION TO
HERITAGE SPORTS

By

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ABSTRACT

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Historically speaking, Michigan has been a state with a long history of participation in outdoor heritage sports. Hunting, fishing, and trapping pursuits have helped to define what it means to be a Michigander. Over the last few generations, Michiganders have begun to move away from the traditional heritage sports, while other activities such as outdoor adventure recreation have seen an increase. The portion of the Michigan population with the least amount of exposure to heritage sport opportunities are youth. The purpose of this quantitative study was to determine the impacts of a conservation-focused residential summer camp on intended and actual behaviors of youth connection with heritage sports.

This study used pre-camp, post-camp, and follow-up camp surveys covering youth behaviors over a period of 18 months. Using the theory of reasoned action and the theory of responsible environmental behavior as frameworks for measuring behavior change, I addressed the following question: Does participation in a conservation-focused youth camp program have an impact on increased connection to heritage sports?

Measuring the changes in youth behavior has allowed for the camp program staff to evaluate whether the organizational goals are being met. The results of this study indicated an increase in hunting trips taken by camp participants. There was also a significant increase in conservation knowledge gained by the campers.

To Tim and Lenore McKeon- for providing my early opportunities to explore the outdoors

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CHAPTER 1

Introduction

Historically speaking, Michigan has been a state with a long history of hunting, fishing, and trapping. Beginning in the late 1700's 1800's these activities were an economic force that created a booming industry that drew settlers to Michigan. English and French trappers built their livelihoods through the fur trade with Native Americans. Hunting, fishing, trapping, camping, and other outdoor pursuits previously helped define what it meant to be a Michigander. These early Michiganders relied on the outdoors to drive the states early economy. As Michigan has developed over the last 200 years its residents have moved away from hunting and fishing to sustain life and now participate in these activities mostly as recreational pursuits. As recreational opportunities, hunting and fishing can be classified as heritage sports. Heritage sports are defined as, traditional outdoor activities, including hunting and shooting sports, fishing, trapping, camping/backpacking, and non-motorized boating such as canoeing (Carmichael & McCole, 2014).

The focus on hunting and fishing in the form of recreation has evolved over time and is in competition with other demands for recreation and leisure time. Over the last few generations, Michiganders and Americans have moved away from traditional outdoor recreation, favoring a more sedentary lifestyle. Even when youth and adults are active, they are not likely to participate in heritage sports. According to the Michigan Statewide Comprehensive Outdoor Recreation Plan (SCORP) for 2008 to 2012 published by the Michigan Department of Natural Resources (MDNR), in 2006, distinct recreational Michigan hunters totaled 814,643. These numbers were slightly higher than 2005, however have been lower than any year since 1980 (MDNR, 2008). While there has been an overall decrease in heritage sport participation across the United States, other forms of outdoor recreation such as adventure recreation, have seen an

increase. Adventure sports including adventure racing, triathlons and tele-mark skiing have been rated as the three fastest growing sports in the United States (Outdoor Foundation, 2013).

Hunting and fishing in the United States had less than 15% growth in new participants during 2012 (Outdoor Foundation, pg.14). In addition to the increase in adventure sports, participation in many other non-consumptive outdoor activities has been increasing rapidly. For example, ten non-consumptive activities exhibited growth rates in excess of 35% between 1982/83 and 1994/95. These included: bird watching (+155%), hiking (+94%), backpacking (+73%), primitive camping (+58%), walking (+42%), motor boating (+40%), sightseeing (+40%), and developed camping (+38%) (Cordell, McDonald, Teasley, Bergstrom, Martin, Bason, & Leeworthy, 1999).

Youth are at the heart of the shift in activity preferences. Research shows that children are spending half as much time outside as they did 20 years ago – and spending much more time doing "inside" activities (Juster & Thomas, 2004). American youth age 8-18 are spending an average of 7.5 hours per day engaging in some form of digital technology (Rosen, 2013). Young Americans, especially those who are raised in urban environments, rarely play outside in natural areas (Louv, 2005). Less time in the outdoors could be linked to an increased disconnection from the environment (Palmberg & Kuru, 2000). When youth are spending time outside, their top two favorite activities are bike riding and running/jogging (Outdoor Foundation, pg. 56). These activities are easy to participate in, but are very different from the type of experience hunting, fishing, or trapping provides. Current outdoor activity participation rates for girls ages 13-17 are at their lowest rate since 2006. The participation rate for boys in the 13-17 age range has been holding steady over the same time period (Outdoor Foundation, pg. 33). Youth fishing participation has dropped from 29% of kids aged 6-17 having participated in 2006, to 18% in

2012. Hunting participation among youth from 2006 through 2012 dropped from 8% to 4% (Outdoor Foundation, pg. 56).

Health Implications

Getting young people to live an active lifestyle and spend more time outdoors participating in heritage sports has become a major focus for many organizations around the country. Conservation groups such as Michigan United Conservation Clubs and Safari Club International, as well as government agencies including the Michigan Department of Natural Resources, and educators working in primary and secondary education are all taking notice. Consequently, the need arises to inspire youth to be active and to spend more time outdoors.

There are several reasons for motivating youth to participate in heritage sports, and to spend more time outdoors. These reasons include the health, economic, and social benefits of these activities to participants. According to Driver (1990), the benefits of leisure opportunities are diverse and wide ranging. There are physical and psychological benefits, as well as social significance to participation in leisure opportunities such as heritage sports. Youth who gradually build a repertoire of motor skills and participate in activities appropriate to their development will also experience positive psychological benefits (Adesina, 2012). There are also personal benefits to pursuing recreation and participating in heritage sports; such as problem solving and self-confidence (Driver, 1990). When it comes to health benefits that can be gained from participating in outdoor activities such as heritage sports, studies have shown that those individuals who engage in outdoor activities are more likely to have increased physical fitness levels, as well as reduced levels of stress, compared with those who do not (California State Parks, 2005).

According to the Outdoor Foundation (2013), 70% of outdoor recreation participants see spending time outdoors as a way to obtain healthy exercise. Health benefits of participating in outdoor recreational activities include psychological, sociological and physical benefits (Breitenstein, & Ewert 1990). Connecting with the youth is extremely important on in regards to participant health. When surveyed, 90% of active adult participants who participated in some form of outdoor recreation, including heritage sports, started between the ages of 5 and 18 and continued with healthy activities into their adult life (Harris Interactive, 2004). Some research has shown that too much artificial stimulation, such as increased exposure to digital screens and an existence spent in purely human environments, may cause exhaustion and produce a loss of vitality and health (Stilgoe, 2001).

Economic Impacts

Although health is an important factor at the individual level for youth and adults, on a macro level, heritage sports play a major role in the economy. Heritage sport participants contribute to the nation's economy through expenditures on equipment these activities require. In 2011, spending on hunting and fishing in the U.S. exceeded \$90 billion (Congressional Sportsmen's Foundation, 2012). Each year a single sportsman (hunter/angler) contributes enough economic support into the United States to help account for the creation of 0.08 jobs. (Duda, Jones, & Criscione, 2010). Specifically in Michigan, anglers boosted the state's economy, spending \$2.4 billion in trip-related expenses and equipment in 2011 (MDNR, 2014). Michigan hunters boosted the state's economy spending \$2.3 billion on trip-related expenses and equipment in 2011. Even wildlife-watching activities bring in \$1.2 billion in trip-related expenses and equipment annually (MDNR, 2014).

Heritage sport participation goes beyond just the value of money spent. Hunters, trappers, and anglers fund the conservation of hundreds of thousands of acres of habitat for both game and non-game species of fish and wildlife. The conservation efforts of the nation and individual states are heavily reliant on license-generated revenue and excise taxes, yet conservation also relies on the sporting public to volunteer time and labor protecting and conserving critical habitat (On the Ground, 2015). User fees such as hunting and fishing licenses and park revenues represent 20-25 percent of the Michigan Department of Natural Resources (DNR) annual budget, and are used to protect and conserve species that are not listed as game throughout the state, including those on the endangered species list (Campbell, 2013). Michigan's angler participation rated fifth in the nation — 1.1 million licensed anglers in 2011 - drawing over \$11.2 million in federal funds to fish and aquatic habitat conservation (MDNR, 2014). Michigan's hunter participation ranks third in the nation — 795,535 licensed hunters in 2011 — contributing nearly \$28 million in federal funds to wildlife management and wildlife habitat restoration (MDNR, 2014). The Pittman-Robertson, Dingell-Johnson, and Wallup-Breaux acts were established by the federal government in order to create funding to select, restore, rehabilitate, and improve habitat for fish and wildlife, as well as to fund research and distribute information to the public (Duda, Jones, & Criscione, 2010).

Role of Michigan United Conservation Clubs

With the benefits of heritage sports as a leisure activity outlined, the importance of sustaining these activities for people throughout Michigan has been a top priority for a statewide conservation nonprofit organization known as Michigan United Conservation Clubs. Promoting the benefits of leisure through conservation and heritage sports lies at the core of Michigan United Conservation Clubs (MUCC) mission. For 79 years, this grassroots organization has

dedicated it's time to uniting citizens to conserve, protect, and enhance natural resources and outdoor heritage in Michigan (MUCC Policy, 2015). In taking steps to fulfill this organizational mission, MUCC has operated a summer camp program since 1947, educating over 56,000 kids during the last 69 years (MUCC, 2014). Over the decades, the camp program has been designed to expose youth to the environment and teach the technical skills of hunting, fishing, and trapping to encourage participation by youth throughout the course of their lives. The youth camp prides itself on enhancing the environmental education of the youth, and addressing the environmental benefits of conservation. The hands on approach and focus on conservation and the wise use of natural resources is strongly encouraged through the camp experience. The mission of MUCC's OutofDoors Youth Camp is to create long-term and lifelong users of the outdoors and to increase participation in heritage sports throughout the state of Michigan.

Michigan United Conservation Clubs has identified several desired outcomes for its camp program. Participating youth will:

- Increase their knowledge of conservation concepts and broaden their awareness of issues thru hands on nature experience.
- Investigate the natural world around them.
- Gain new skills and confidence in the outdoors.
- Understand the value of the conservation experience, including fishing, hunting and time spent in the outdoors.
- Develop into long-term and lifelong users of the outdoors, and increase in their participation in heritage sports throughout the state of Michigan (MUCC, 2014).

These intended outcomes are what drive the program and its development each year. However, there has never been any research to evaluate whether the program is having the desired effects and is giving the participants the confidence and technical skills to become participants in the heritage sports after they leave camp.

Overview

The goal of this research is to study the possible change in actual behaviors of youth who have participated in MUCC's conservation summer camp, as well as variables that might impact the level to which behaviors change. The main research question is as follows: does participation in a conservation-focused youth camp program increase connection to heritage sports? This study uses the definition from Carmichael and McCole (2014) defining heritage sports as traditional outdoor activities, including hunting and shooting sports, fishing, trapping, camping/backpacking, and non-motorized boating such as canoeing. From this research, an action plan can be developed with the intention of increasing youth connections to heritage sports. Increased youth participation has the potential to help youth lead a healthy lifestyle and to have an expanded personal connection with the natural world.

The camp program which is the focus of this study, took place in the South Central region of Michigan during the summer of 2014, and ran as a week-long overnight summer experience serving youth ages 9-16. The study focused on assessing the impact of the conservation education program on youth while they were at camp and after they returned home.

Through this study, I assessed and measured the self-reported outdoor background/behaviors of participants before they took part in MUCC's OutofDoors Youth camp program. The youth were then surveyed on their self-reported intended and actual behaviors after

completion of the camp experience. In order to gather data a pre-test, post-test, and follow-up survey were used to measure each participant's intended and actual behaviors.

CHAPTER 2

Review of Literature and Hypotheses

This chapter reviews multiple angles of youth participation in the heritage sports and the different manners in which participation may have an impact. This chapter highlights terms that are used throughout the paper. It then introduces the theories that are the foundation for the study. After discussing the theories of reasoned action and responsible citizenship behavior, this chapter lays out the rationale for conducting the study. Finally, the five hypotheses that drive the research question complete chapter two.

Conservation Literature

In early American history, hunting provided sustenance in the form of meat. The quantity and accessibility of game made the supply of quarry seem endless to European settlers. However, commercial over-hunting, neglect, and destruction of habitat drove many species of wildlife, such as the passenger pigeon and the American bison, complete or near extinction (Kurtz, 2015). Concern over dwindling populations led to the development of state and federal government wildlife management agencies. These agencies developed ethics and principles that were unique to wildlife management, and the field of conservation was born. In recent decades, agencies and their partners developed the North American Model of Wildlife Conservation (Mahoney & Jackson, 2013), which emphasizes the financial contributions (e.g., license fees, duck stamps), management assistance, habitat conservation ethic, and general advocacy support that hunters

provide for natural resource conservation (Heffelfinger, Geist & Wishart, 2013, Gammonley, Naylor, & Raedeke, 2013).

The MUCC program specifically focuses on teaching the North American Model of Wildlife Conservation; this model was developed on seven principles and each principle is highly stressed during the week at camp (see Appendix I). The seven principles are:

1. In the Public Trust – Wildlife belongs to the people and is managed in trust for the people by government agencies.
2. Prohibition on Commerce of Dead Wildlife – It is illegal to sell the meat of any wild animal in North America.
3. Allocation of Wildlife is by Law – Laws developed by the people and enforced by government agencies regulate the proper use of wildlife resources.
4. Opportunity for All – Every citizen has the freedom to hunt and fish.
5. Non-frivolous Use – In North America we can legally kill certain wildlife for legitimate purposes under strict guidelines for food and fur, in self-defense, or property protection. Laws are in place to restrict casual killing, killing for commercial purposes, wasting of game, and mistreating wildlife.
6. International Resources – Because wildlife and fish freely migrate across boundaries between states, provinces, and countries they are considered an international resource.
7. Managed by Science – The best science available will be used as a base for informed decision making in wildlife management. (Boone and Crockett, 2015).

The conservation ethic designed and championed by these agencies emphasizes that human benefits be derived in a sustainable manner and recognizes that human uses need to be reconciled with intrinsic and necessary eco systemic functions and structures (Olver, Shuter, & Minns, 1995).

More recently, the American Fisheries and Wildlife Association has developed a model for teaching conservation education through core concepts. These core concepts reflect the knowledge, actions and values that further the North American Model and were developed as part of the conservation education strategy (AFWA, 2015). According to the strategy,

conservation education becomes an effective and dynamic means through an informed and involved citizenry that:

- “I. Appreciates that conservation and management of terrestrial and water resources are essential to sustaining fish and wildlife, the outdoor landscape, and the quality of our lives.
- II. Understands and actively participates in the stewardship and support of our natural resources
- III. Understand the value of our fish and wildlife resources as a public trust
- IV. Understands and accepts and/or lawfully participates in hunting, fishing, trapping, boating, wildlife watching, shooting sports, and other types of resource-related outdoor recreation
- V. Understands and actively supports funding for fish and wildlife conservation (AFWA, 2011).”

With a focus on conservation and environmental education, the MUCC camp program was established to educate the campers on conservation and the importance of natural resources specifically in the state of Michigan. From the environmental education viewpoint, youth are exposed to a philosophy designed to foster development of an individual who is aware of and concerned about the environment and its associated problems. An individual who is environmentally educated has the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward solutions of current environmental problems and the prevention of new problems (UNESCO-UNEP, 1976). The focus on conservation and the wise use of natural resources is strongly encouraged through the camp experience.

Nature Connectedness

In the social sciences, researchers have developed the concept of “connectedness with nature” to mean a sense of one between self and the natural world; nature connectedness often

involves feelings of affinity, compassion, and oneness (Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009). Many camp programs are designed to develop a connectedness between the campers and nature. This emphasis is designed to create a link between the campers and the environment that surrounds them, to shape a love of the natural world (Schultz, 2002). The construct of nature connectedness is supported by significant literature, and researchers have observed that exposure to the outdoors leads to a development of a sense of oneness with the environment (Mayer & Frantz, 2004).

The concept of connectedness with nature has garnered considerable attention by social and behavioral scientists (Clayton, 2003). In addition, conservation thinkers such as Rachel Carson, whose writing led to the foundation of the environmental movement, cared passionately about how to maintain in children a sense of wonder about the natural environment; she believed that the battle to protect the environment was won or lost in childhood (Carson, 1956). This research was conducted to learn more about the connection youth form with nature during their time at camp, and whether this connectedness has any bearing on heritage sport participation. The emotional bond between a person and nature encompasses various positive emotions like intimacy, familiarity, affection and also a feeling of oneness with nature (Hinds & Sparks, 2008). Furthermore, outdoor experiences allow kids to connect meaningfully with nature, which in turn may form a foundation for pro-environmental behaviors later in life (Kals, Schumacher, & Montada, 1999).

Camp Behavior Change

The environmental behavior of an individual is, in a narrow sense, a behavior that has a significant impact on the environment (Krajhanzl, 2010). Youth engagement in general is critical to positive youth development (Gambone, Yu, Lewis-Charp, Sipe, & Lacoe, 2004). More

specifically, findings suggest that camp-based programs designed to foster environmental stewardship may be a promising strategy for engaging youth (Browne, Garst & Bialeschki, 2011). For example, youth who participate in environmental education programs often serve as advocates for behaviors such as recycling and using alternative transportation in their homes and in school (Volk & Cheak, 2003).

Summer camps present an intentionally designed experience where campers visit a locale for a set time period (one week or more) to participate in activities that are planned and led by trained staff in a group setting (Hickerson, 2014). Non-formal programs such as camps provide children with unique opportunities to experience substantial outdoor immersion and often influence affective development (Larsen, Castleberry, & Green, 2010). Outdoor programs, in general, provide a variety of unique elements known to promote positive outcomes, including contact with nature, skills for small-group living, and opportunities for hands-on learning (McKenzie, 2000). Children benefit from educational approaches that use the natural environment as an integrated context for learning, and a greater emphasis could be placed on programming that integrates ecological concepts into educational structures (Kellert, 2005; Lieberman & Hoody, 1998). Even participants, who begin a learning program with a lack of outdoor exposure, can be introduced to new activities that are designed to help them gain a set of experiences (Stern, Powell, & Ardoin, 2008). The American Camp Association Directions study (2005) surveyed over 5,000 families at over 80 camps across the United States to measure outcomes of the camp experience. The study, which surveyed children and their parents before, after, and after a three month period of time, found that kids who attended overnight camps and rated their experience as positive, had developed civic development skills such as leadership.

Providing youth with meaningful decision making and leadership opportunities are critical for their development as active engaged citizens in their communities (White, 2009).

A longitudinal study conducted by Simpkins, Davis-Kean, and Eccles (2006) concluded that activity participation in middle school aged children predicts youth's subsequent values and self-concepts of abilities. The middle-school period is essential to maintaining students' interest in science and the environment (Sheridan, Szczepankiewicz, Mekelburg, & Schwabel, 2011). Therefore, middle-school students' participation in activities can play an important role in their self-development and formation of values (Kong, Dabney, & Tai, 2014). An individual's decisions can be shaped by experiences they have had in life. If these experiences are positive, a person is likely to have a positive outlook from that experience, and if the experiences are negative the individual is more likely to have a negative outlook (Ewert, Place, & Sibthorp, 2005). "Research has shown that outdoor recreational experiences in early childhood are instrumental to shaping environmental attitudes" (Ewert, Place & Sibthorp, pg. 228, 2005). Other research has shown that positive attitudes towards an experience, bundled with ownership in a specific cause can lead to positive behavior changes.

Theory of Reasoned Action

The theory of reasoned action is based on the principle that "an individual's behavior is driven by behavioral intentions" (Fishbein, 1979). Fishbein and Ajzen (1975) developed the theory of reasoned action, to link attitudes and behavior. According to this theory, if one wants to know whether or not an individual will perform a given behavior, the simplest and probably most revealing thing that one can do is to ask the individual whether he or she intends to perform that behavior (Zhao, 1992).

Another important aspect of the Theory of Reasoned Action is that the strength of an attitude-behavior relationship largely depends on the degree of correspondence between attitudinal and behavioral measurement (Fishbein & Ajzen, 1975) (Figure 1). This means attitude and behavior would show a strong relationship when both are measured at an equivalent level of generality or specificity. Crespi (1971) and Weigel, Vernon, and Tognacci (1974) concluded from their research that when both attitude and behavior are measured at a very specific level, a strong consistency between attitude and behavior can be demonstrated.

In the case of this camp study, the connection to the theory of reasoned action is based on the knowledge the camp participants have when they enter the program and what their behaviors are in regards to heritage sports. This knowledge is the basis of the attitudes they have towards heritage sports and conservation. The possibility of the change in knowledge over the course of the camp program could coincide with a change in the intended behaviors when they depart from camp.

As an example, in the camp setting the attitude towards a behavior could be a camper's attitude towards hunting. The subjective norm is the social pressure to hunt the camper learns about during a hunter safety course. When the attitude towards hunting and the norm that is reinforced in class are combined they can lead to a behavioral intention. In this case the behavioral intention is to go hunting. Finally, this theory states if there is a behavioral intention, this can then lead to the actual behavior which in this case would be the camper going hunting.



(Fishbein, 1979)

Figure 1: Theory of Reasoned Action

Responsible Citizenship Behavior

The second theory which helps to show how intentions can be developed is the Responsible Citizenship Behavior model (figure 2), that was developed in the early 1990s by Hungerford and Volk.

Hungerford and Volk (1990) claim that under the right conditions, several variables combined will lead to an intention to act. If an individual has an intention to act and the situational factors are right this will lead to citizenship behavior change by the individual. This model divides the precursors to citizenship behavior into three categories: entry-level variables, ownership variables, and empowerment variables (Hungerford & Volk, 1990). According to the National Environmental Education Training Foundation (NEETF), entry-level variables are considered foundational to environmentally responsible citizenship behavior. Ownership variables are critical to environmental behavior because they make environmental issues personal to the decision maker. Empowerment variables give individuals a sense that they can help resolve environmental issues (NEETF, 2001).

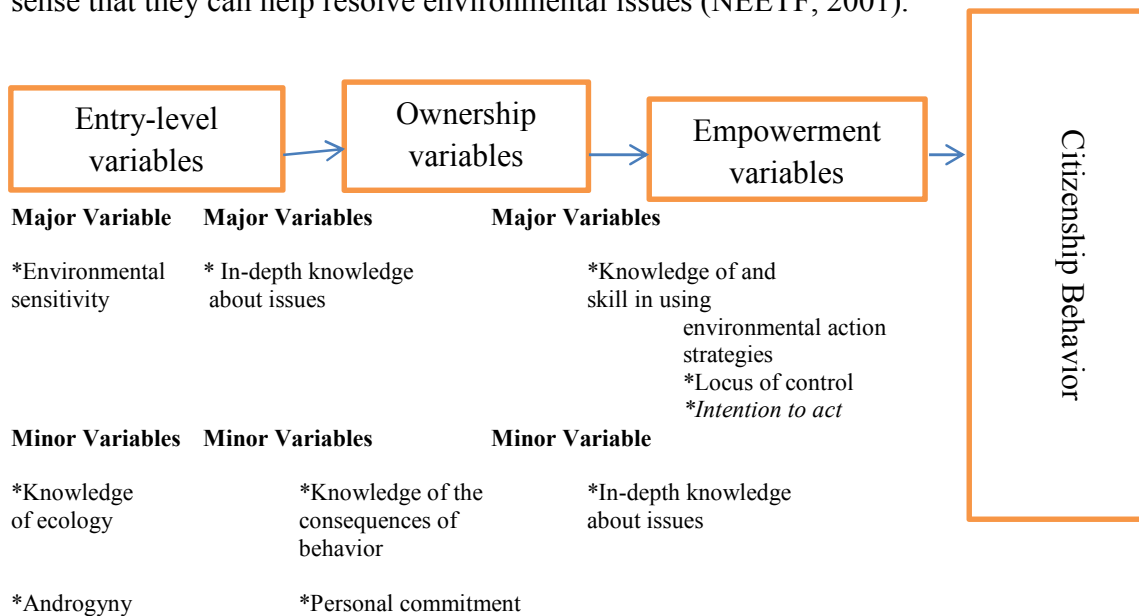


Figure 2: Major and Minor Variables Involved in Environmental Citizenship Behavior

The youth at camp are able to experience the various elements of the behavior model shown in figure 2. Participation in heritage sports would be defined as the responsible environmental/citizenship behavior in regards to this study. In the camp setting, to foster environmental sensitivity campers have the freedom of choice regarding activities to participate in. While the youth are at camp they are surrounded by positive role models who model responsible citizenship behavior and work to foster in-depth knowledge about issues, and skills for action as well as outdoor recreation participation. As part of the camp curriculum (see appendix I), the youth have the chance to learn about the North American Model of Wildlife Management through stewardship activities. On top of the learning opportunities, the camp also focuses on providing the youth with the chance to learn technical skills in the heritage sports, which aligns with the locus of control the individuals experience and can lead to their intentions to act. Each camper who comes to camp has the chance to learn how to paddle a canoe, tie a fishing line, and shoot a rifle. These opportunities are provided at camp to set the foundation for long term interest in the heritage sports, which MUCC regards as “citizenship behavior”. As the model shows the combination of situational factors (the camp experience), and an intention to act can lead to an increase in environmental behaviors such as participating in heritage sports.

Rationale

Today the United States population is growing increasingly disconnected from the natural resources that support human existence (Rockstrom, Steffen, Noone, Persson, Chapin, Lambin, & Foley, 2009). As concerns over the health of the planet escalate, educators are asked to contribute to awareness of the problems humanity is facing to enable citizens to participate in solutions (Secretariat of the Convention on Biological Diversity, 2011). With the decline in overall hunter numbers across the nation and the increase in people spending more time engaging

with technology, it is extremely important to create interest in conservation and heritage sports (Dorell, 2007). MUCC is dedicated to educating the citizens of Michigan about conservation.

This study was conducted to evaluate a program designed to facilitate increased youth participation in heritage sports through a residential camp experience. The main question of the research was: Does participation in a heritage sport youth camp program have an impact on increased participation in hunting? In other words, are the organizational goals of MUCC being met through camp?

The results of this will help the collaborating organization, Michigan United Conservation Clubs, by providing baseline data about heritage sports participants. For example, this study provides data about the backgrounds of youth participants, whether they gained knowledge and skills from participating in the program, and whether they intended to change their behaviors, based on their experiences in the program.

From a scholarly perspective, this study contributes to the expanding literature/research about conservation and environmental behavior change in youth ages 12-16. The specific age group of 12-16 year olds is often overlooked. Much of the current literature focuses on youth ages 15-19 and ages 5-8 (Torquati, Cutler, Gilkerson, & Carter, 2013); these populations have been heavily studied.

The 12-16 year old age group is most likely to have the ability to participate in outdoor activities post-camp, through direct immersion in the natural environment. The residential setting allows for a unique research venue for outdoor recreational behaviors, and follows in the footsteps of Stern, Powell, and Ardoin (2008), who worked in a residential setting with an older population of young adults who ranged in age from 16-19 years old.

Conceptual Model for Study

With this in mind, a conceptual model was developed to guide this research. The model shown in figure three, helps to illustrate the potential journey the youth will experience by participating in camp.

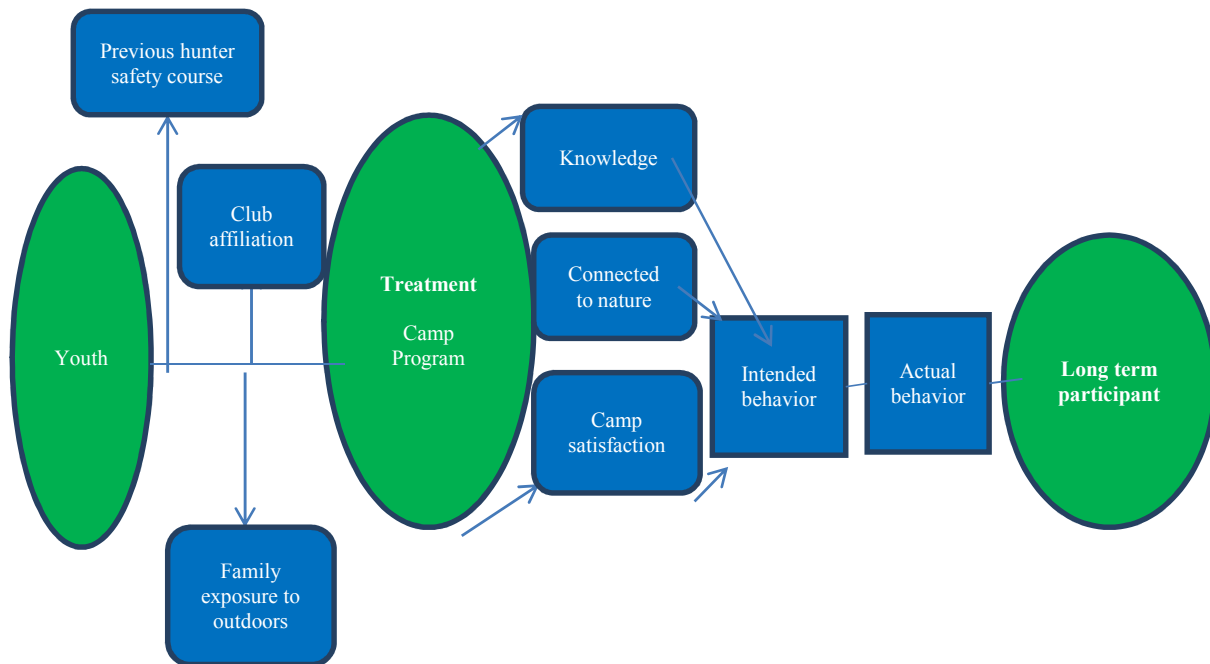


Figure 3: Conceptual Model

Operational Key-

Knowledge-cognition questions- Pre, post, and follow-up

Emotional- Connectedness to Nature Scale- Pre, post, and follow-up

Camp Satisfaction-General question post-test and follow-up

Intended behaviors- Post test

Actual Behaviors- Pretest and follow-up

At the beginning of the camp experience, each of the campers enters the program with varying personal background experience, and each of these could impact post-camp behavioral intentions.

For this specific research, key background factors include the following constructs as shown in on the left of figure 3. Family exposure to the outdoors was measured by the number of trips families take together outside, and whether the family allows allow the youth to spend time outdoors on their own. The second background variable is whether or not the youth or his/her family is connected to or a member of a local rod and gun club, sportsmen's organization or conservation group. Finally, the third background variable is whether or not the youth has taken the Michigan Hunter Safety Course prior to coming to camp. In Michigan, The Department of Natural Resources and Hunter Education certify approximately 25,000 individuals annually. Of those 25,000, 12 to 16 year old youth make up about 41% of Michigan Hunter Education graduates each year. Michigan Hunter Education (MHE) provides opportunities for individuals to understand aspects of safe hunting, firearm mechanics and understanding, firearm safety, hunting ethics, and wildlife conservation and management. MHE instructors educate people both young and old in an effort to foster successful and safe hunting experiences (Everett, 2013). These three background variables describe the pre-camp experiences the youth may have had. These pre-camp experiences are hypothesized to have an impact on post-camp participant behaviors.

As shown in Figure 3, the "treatment" in this study is the camp program. Although specific camp experiences are likely different for each individual, the overarching camp curriculum they are exposed to is the same. The camp is a six day and five night experience, and it features roughly 50 hours of conservation education focused programming. The programming is developed around the concepts of conservation based on the North American Model of Wildlife Management. The program also teaches youth the technical skills required to participate

in heritage sports activities such as target shooting, hunter safety, canoeing/kayaking, fishing, and wilderness survival.

The study specifically focused on the three variables shown in the middle of Figure 3. The survey instruments were developed to measure the camper's connectedness to nature prior to camp, after camp, and six months after camp; and the camper's overall satisfaction with the camp program itself. The survey questions about satisfaction provide insights into whether their experience was positive or negative, and will guide programmatic decisions for future camp seasons.

The dependent variables in this study are shown in Figure 3. The behavioral intentions regarding heritage sports were measured at the end of the camp week to identify any changes in intentions or preferred activities in which the youth would like to participate once they return home to their families. Finally, the six month follow-up survey was designed to measure the actual recreational behaviors of the respondents during the months of July 2014-Jaunary 2015.

To investigate whether participation in the conservation-focused camp program has an impact on increased participation in heritage sports, several specific hypotheses were tested.

Hypotheses

H1: Participants who indicate higher satisfaction with their camp experience will have an in actual participation levels in heritage sports.

Hypothesis one is a reflection of the impact on the camp program itself. If this hypothesis is proven, the data will show those campers who enjoyed their time at camp will spend more time participating in heritage sports.

H2: Participants who completed the Michigan Hunter Safety Course while attending camp will have an increase in their emotional connectedness to nature from the pre-survey to the follow-up survey.

The Michigan Hunter Safety Course is designed to teach safe and responsible handling of firearms and ethical hunting practices. There is also a portion of the course that focuses on conservation appreciation and knowledge. By learning how safe and responsible hunters contribute to conservation, youth will gain an appreciation for the outdoors and their connectedness will reflect that in the follow-up surveys.

H3: Participants who are members of a sportsmen's club or conservation organization are more likely to have higher participation in heritage sports prior to coming to camp, than participants who are not part of any outdoor organizations.

Those campers who come to camp who are already participating in heritage sports and are connected to an outdoor-oriented social network, and will be coming to camp with higher recreation participation levels than those campers who have had little exposure through a club.

H4: Participants who have little prior heritage sport experience before coming to camp will have an increase in their participation in the six months following the completion of the camp program.

This hypothesis was designed to investigate the impact the treatment may have on the least experienced campers. Campers who have had little exposure in the outdoors prior to having a camp experience will want to continue to participate in the heritage sport activities they learned about while they were at camp.

H5: Participants who feel a very strong sense of connectedness to nature will have an increase in their intentions and actual heritage sport behaviors following their time spent at camp.

Campers who are exposed to nature and are able to form a stronger bond with the environment during their time at camp, will want to continue that bond and will want to spend more time in the outdoors.

This research was designed to learn more about the behaviors of the youth and whether the camp experience can have an impact on recreation intentions, which then leads to lasting change in outdoor recreation behaviors. By investigating participation levels before participants attended camp, and then asking what they intend to do after leaving camp, the impact of the treatment may be determined. The actual behaviors of the campers during the six month span from July 2014-January 2015 also provides insight into which heritage sport activities the youth choose to do post-camp, and perhaps for a lifetime.

CHAPTER 3

Method

For this research, quantitative methods were used. The quantitative approach allowed for collection of information from a relatively large number of people in a limited time period. It also allowed for the quantitative analysis of changes by participants over the designated period of time. Three surveys were administered over the course of this research (See Appendices C, D, and H). The first survey was a pre-camp survey, covering participant's heritage sport activity in the six month span of July 2013 through January 2014 prior to youth arrival at summer camp.

The six month window was selected for the seasonal opportunities that are offered during that time frame. The selected time frame of July through January offers the most opportunities to participate in heritage sports in Michigan. This time frame encompasses time spent outdoors in the summer as well as the opportunity to fish in the summer, fall, and early winter. It also covers a large majority of the hunting seasons in Michigan. This six month span covers hunting seasons that include: fall turkey, archery and firearm deer season, bear, waterfowl, and a portion of small game.

The pre-survey collected baseline information on heritage sports participation, nature connectedness, and knowledge of conservation principles. Other questions used on the pre-survey were designed to obtain demographic data including; organizations campers belong to, family composition, gender, age, and previous outdoor experiences. A post-survey administered on the final evening of camp measured campers' intended heritage sports activities, and a final follow-up post survey administered six months after the campers departed from the program measured campers' actual heritage sports behaviors.

The surveys were designed to gather information on the knowledge, attitudes, behavioral intentions and actual behaviors of the respondents regarding their participation in heritage sports.

By using this survey format, I was able to collect data on three different time periods in the participants' lives. The data collected during the three time frames helped measure whether the camp curriculum made an impact. This survey format also allowed for direct reporting by respondents, themselves.

All surveys were designed to be administered using the traditional paper and pencil format. The six-month follow-up survey was first mailed to the participants' home addresses. When the initial response rate was low, additional means (emails, phone calls, etc.) were used to contact camp alumni.

The survey was designed for and distributed to campers only. The campers were comprised of both males and females whose ages ranged from 12-16 years old at the time of camp, and who were attending the MUCC overnight summer camp experience that lasted for six days and five nights. The campers who participated in this program came from diverse backgrounds and different walks of life. Some were already familiar with the outdoors, and others were having their first experiences. Most campers came from the Lower Peninsula of Michigan, but a small number came from Northern Indiana and Ohio. At maximum camp capacity, the program works with 360 youth ages 9-16. For this research, the target population was 12-16 year olds creating the possibility for 160 respondents. During the two weeks at camp, data were collected on the 12-16 year olds; the overall camp attendance was 150 campers, with camp operating at roughly 94% capacity.

The respondents' surveys were confidential and no names were linked to any of the campers in the analysis. The parents were notified of the research upon registering their teens for camp, and were asked to sign an informed consent form in order for their child to partake in the

study. The youth signed an assent form confirming they were aware they would be participating in the research (See Appendix B for this form).

The surveys were administered by a trained staff that had completed the Michigan State University Institutional Review Board training, under the guidance of the Camp Director who was the primary researcher for this study. The Camp Director and the assisting staff were given the same specific instructions in regards to the administration of the survey and what their role was with the data collection. The survey process was facilitated by the Camp Director with other staff assisting in a technical administrative role.

The time frame for the survey was a key component for the research. The pre-survey was administered to the campers shortly after their arrival on a Sunday evening: Sunday July 13, 2014 and Sunday July 27, 2014. The pre-survey asked the campers to reflect on the months of July 2013 through January 2014 prior to their arrival at camp. This six month timeframe was designed to gather data regarding previous behaviors in the environment before campers could be influenced by any other experiences during their time at camp.

The core camp programming took place between the hours of 9:00AM and 6:00PM Monday through Thursday. During the core programming hours, campers spent time learning in groups and individually about environmental and conservation concepts. They also had the opportunity to learn and develop the technical skills necessary to participate in heritage sports.

The post-survey for the participants took place during the evening on Thursdays both weeks; Thursday administration dates were July 17, 2014 and July 31, 2014. This post-survey was designed to gather information on the intentions of campers to engage in activities they learned about while at camp.

The follow-up surveys were administered after a six month span, July of 2014 through the end of January 2015. Participants were mailed the follow-up survey during January 2015. Respondents were given a three-week time frame to complete and return the survey. The follow-up survey focused heavily on the actual behaviors of the campers. It also included questions regarding connectedness to nature and conservation knowledge retention.

Survey Instrument

The surveys (see appendices C, D, and H) were comprised of three main sections; each section was designed to gather a specific set of information pertaining to the overall research question. The largest section in each of the surveys was the behavioral section. For each survey the behavioral section measured heritage sport participation. The scale used for this section was adapted from a previous study (Gotch and Hall, 2004).

The second portion of the survey focused on conservation knowledge. These items measured knowledge of conservation learned during the program and whether that knowledge was retained after leaving the camp setting. For this portion, questions were gleaned from topics that are covered from the camp curriculum (Appendix I). These questions were selected for their emphasis on conservation, stewardship, habitat, threats to wildlife, and Leave No Trace ethics that constitute the overall objectives and message of the camp curriculum.

The third portion of the survey focused on the affective domain of the participant's experience, before and after attending camp. These questions were designed to measure the connectedness to nature of each respondent and were also taken from the Gotch and Hall survey (2004).

An additional section of survey was only included on the post- and follow-up surveys. These were general camp program evaluation questions focusing on the confidence of the

campers in any abilities learned, their comfort level while participating in the program, and their overall satisfaction with the camp program.

Finally, the pre-survey concluded with demographic questions. Information gleaned from the demographics helped to understand the participants. There are many factors that can influence program outcomes for participants, especially in youth of this age group. This study was designed to investigate only a few of the several factors that could impact youth participation in heritage sports.

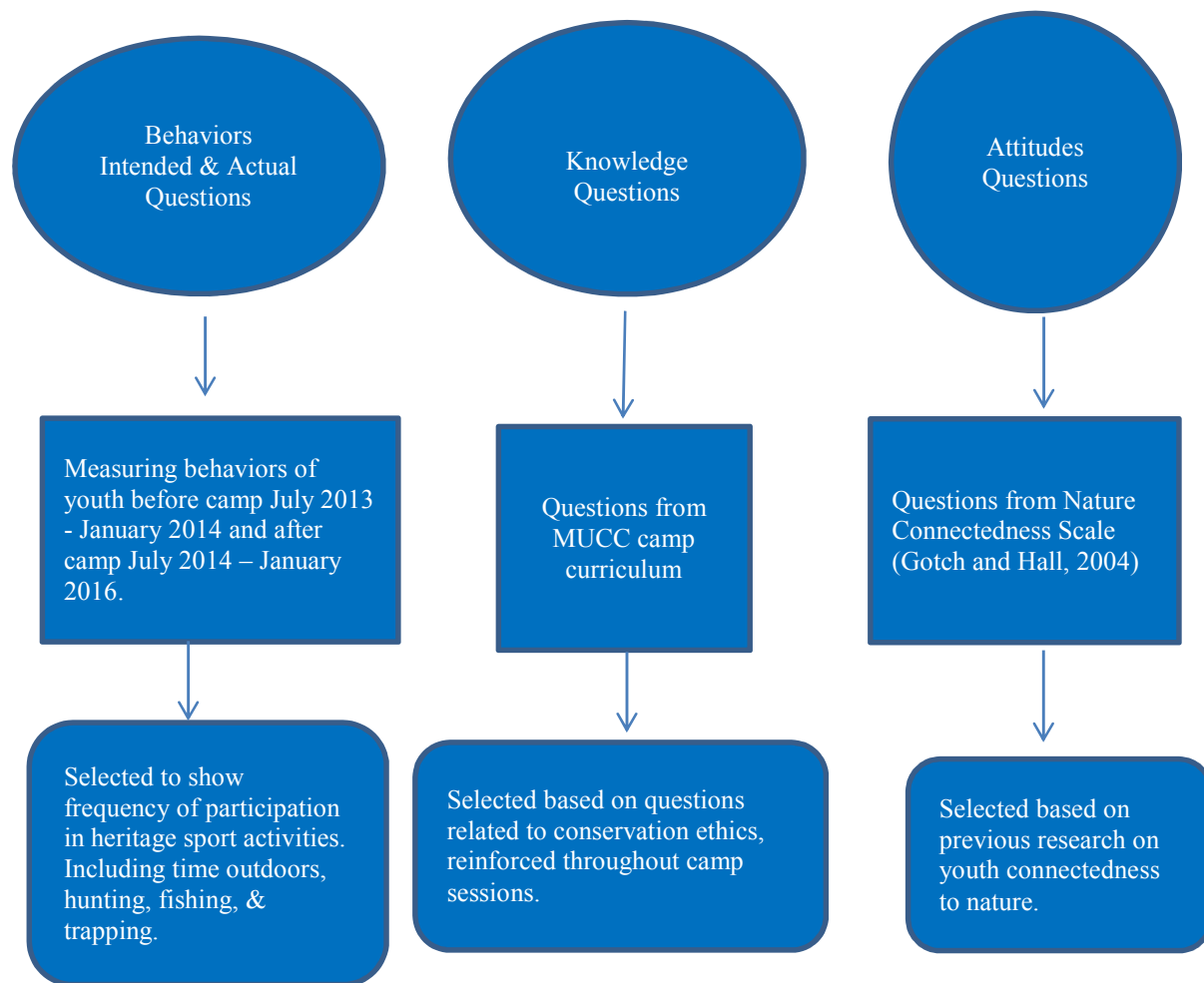


Figure 4: Main Components of Survey Design

The surveys were designed with differing format choices for answers and respondents were asked to select the answer that best represents them personally. Each camper responded to each question by filling in a blank, recording a number, or circling the best answer. There was no time limit to complete each survey.

Procedure

The field research activities took place during a two week window in July. The pre-survey was administered to the campers on Sunday July 13, 2014 and to the next set of campers on Sunday July 27. Each participant received one survey to complete each night. The surveys used names for identification. Confidentiality of participants was maintained at all times, and only the researcher had access to the list once the surveys were completed. Names were used in order to match the surveys to the respondents to track their progress during the pre-, post-, and follow-up surveys.

The surveys were administered on a cabin by cabin basis. Each cabin had up to 14 participants taking part in the survey at a time. The surveys for each cabin group were conducted separately and occurred after the end of the daily activities and before lights out for the night. The cabins were selected as the research area, due to the director's ability to supervise the survey distribution. This cabin setting allowed the campers to take the survey in a comfortable setting to avoid the feeling of a school assignment or test.

Pre-Survey

For the pre-survey on Sunday evening, the survey consisted of 46 items that were to be answered by the campers. Time was given for each question to be reviewed by the campers before answering. The question and corresponding answers were then read aloud by the researcher. The reading aloud format was consistent with how camp staff members administered

the Hunter Safety exam during the camp week. The researcher moved to read the next question after all of the respondents had completed an answer.

Post-Survey

The post-survey was administered using the same procedures. Thus, comparisons could be made for each individual, and the consistency in methodology was designed to help the participants focus on their answers rather than introducing a new method.

The post-survey was given on the final night of the camp experience. By giving the survey at this time it allowed the campers to have experienced the entirety of the camp program, except for final closing ceremonies on Friday. The post-survey contained 46 questions.

Follow-Up Survey

After the campers completed their week long experience at camp a follow-up survey was administered six months after the conclusion of the camp season, in the winter of 2015. This survey was mailed directly to the campers at the address listed in their camp records. The camper follow-up survey consisted of 46 questions and asked participants about their outdoor behaviors during the six months following their participation in the camp program.

Following the Dillman (2011) method, the mail survey was preceded by an initial postcard (see Appendix F) to give the youth a reminder that they were participating in the study and that the last survey would be coming soon. The initial postcard mailing took place during the week of February 2, 2015. A paper follow-up survey was sent via mail to each participant's residence. All of the mailings were addressed specifically to the campers. The option to complete the survey online was also given, to offer participants greater choice and to increase response rates.

One week after the informational postcard was mailed, the online survey was activated. The online survey was created using Qualtrics software and was a mirror image of the paper and pencil format. The link to the online survey was advertised on the main homepage for Michigan United Conservation Clubs. The direct link to the survey was also e-mailed to the parents of all of the survey participants. Parents' email addresses were used due to the fact that many youth don't have traditional e-mail accounts. The online study netted a total of one response. Looking back, it seems that youth had limited access to the online survey.

The first copy of the follow-up paper survey was mailed to the participant's house the week of February 9, 2015. The survey was mailed to all of the participants who signed the consent form while attending camp. Inside the mail packet was a cover letter (see appendix E) explaining what was expected from the campers as well as the survey and a postage paid envelope for the youth to return the survey to MUCC headquarters. In the cover letter it was explained the respondents would have three weeks to complete the survey and mail it back. The initial deadline for the surveys to be returned was March 9, 2015.

After receiving a low response rate from the initial mailing, several steps were taken in an attempt to increase responses. First, I sent a direct reminder email to the parents of the campers with a link to the online survey. This was done in hopes the parents would provide access to the online survey, thus making it easier and more convenient for the campers to complete. One week after the direct email to parents promoting the online option for survey completion, personal phone calls were made. Over the course of four days, each household that had not responded to the initial mailing was called to remind them that they should have received a survey in the mail and that the deadline for returning it was approaching.

Once follow-up emails and phone calls were completed, I sent a second postal mailing of the survey. This second mailing was designed to serve as another reminder to the participants that they had volunteered to be part of the research. It was also able to serve as a replacement in case the previous survey had gotten lost, or damaged. The second mailing asked for a turnaround time of two weeks, taking into account the time it would take to travel in the mail to the campers and then return back to MUCC headquarters.

While the second survey was on its way to the participant's households, the researcher spent two evenings making phone calls to several sportsmen's clubs who are members of MUCC's network. This was another attempt to improve response rates. The summer camp has many of its campers sent through the sponsorships of member clubs. Over 300 clubs throughout the state of Michigan are represented by MUCC, and many of these clubs sponsor youth to attend camp each year. The intention of calling the clubs was to use them as another point of contact to remind the campers to fill out and return the survey. Four clubs who sponsored between eight and fifteen kids were contacted.

Along with the direct contact of clubs, parents, and the campers themselves, there was also an incentive to complete the survey. In the initial mailing, the youth were informed that if they completed the survey, they would be entered in a drawing to win a \$50 gift card to Cabela's. After the low response rate of the first round of surveys this incentive was changed from a gift card to Cabela's to a \$50 gift card of the winner's choosing. Examples of possible gift cards were given including Gander Mountain, Bass Pro Shops, Amazon, or iTunes.

Analysis

Once the surveys were returned the data were then entered, organized and cleaned. The surveys were entered manually and coded into an Excel database to match the pre- and post-test

information. Once the data were compiled and coded, it was then analyzed. All data were de-identified during the data entry process to protect camper's confidentiality. From Excel, the information was then analyzed using the Statistical Package for Social Sciences (SPSS) version 22.

Next, descriptive statistics were analyzed and t-tests were conducted comparing mean scores between pre-survey, and follow-up survey. The survey questions allowed for analysis of the magnitude of a participants' behavioral intensity (Gotch and Hall, 2004). The paired t-tests were used to compare the means of two different groups of respondents to each other. An example of such comparisons was campers who took Hunter Safety prior to the camp experience and camp participants who took the Hunters Safety course as part of their camp experience. Another example comparison was between of groups, are those who are members of a conservation organization prior to coming to camp vs. non-members. Comparing the mean scores of such groups provided insight as to the possible differences and changes in behavior among participants.

CHAPTER 4

Results

This chapter begins with the baseline demographics of the campers. After the demographics, the chapter focuses on the comparisons between surveys. The comparison section follows the order of questions on the surveys. First, the tables represent comparisons with behavior and participation in heritage sports, followed by knowledge of conservation. Next, results concerning nature connectedness are reported. Finally, the chapter concludes with camp satisfaction, and responses to questions about enjoyment of outdoor experiences.

Demographics

The population of campers for this study consisted of 150 youth who attended the program in 2014. Of the 150 campers in attendance during the study, 145 completed the pre-survey and post-survey. These numbers resulted in an at-camp survey response rate of 97%. However, only 55 campers completed the six-month follow-up survey, a response rate of 38% who completed all three surveys. Of the surveys issued at camp, 101 respondents were male and 42 were female. Of the youth who completed surveys, 96 were first time campers, and 47 had some level of previous summer camp experience. Only 39 campers had ties to conservation clubs or sporting organizations. There were a total of 62 campers who had taken the Hunter Safety Course before coming to camp, and 69 campers had previously had a hunting license (Table 1).

Table 1: Demographics

	Male/ Female	Mean Age	Previous Camp Experience ¹	Club Member	Completed Hunter Safety	Previous Hunting license
Pre-Camp	101 Male	14	35	28	44	49
Survey	42 Female	13	14	11	18	20
Post-Camp	101 Male	14	35	28	44	49
Survey	42 Female	13	14	11	18	20

Table 1 (cont'd)

Follow-Up	36 Male	14	16	11	21	20
Survey	19 Female	13	13	6	12	11

¹ The numbers in this table represent each camper response

Findings Regarding Survey Respondents

Only 55 respondents completed all three surveys including the follow-up survey. Within these respondents, there were 19 girls and 36 boys. The percentage of respondents with previous camp experience was 29%, while 31% belonged to or had some connection with a sportsman's organization. Of the campers in this group, 56% had completed Hunter Safety prior to coming to camp. Finally, 61% had hunted prior to coming to camp.

Table 2: Number of Heritage Sport Participants before Camp and 6-months After Camp

	Pre-Camp Participants	Follow-Up Participants ¹	% Change
Campers who were outside	54	48	-11.1%
Campers outside with family	54	54	0.0%
Campers who fished	46	34	- 26.1%
Campers who hunted	34	38	+ 11.8%
Campers who trapped	12	3	- 75.0%
Campers who did target archery	37	38	+ 2.7%
Campers who used firearms	43	44	+ 2.3%

¹ n=55

There were slight changes in the number of heritage sport participants between the pre-camp survey and the follow-up survey. With an increase of one participant in the target shooting sports, and no change at all for participants spending time outside with family. The largest change was a decrease in fishing participants which saw a 26.1% decrease, while trapping saw a

75% decrease in the number of participants, though the number of those who had trapped before the camp was much lower (12) than for other activities.

Table 3: Average Number of Trips for Outdoor Heritage Sport Participants 6-months After Camp

	Pre-Camp # of Trips		Follow-Up # of Trips ¹		
	M	SD	M	SD	P
Solo trips outside	42.27	45.55	28.6	38.98	.0938
Family trips outside	44.05	48.75	32.67	39.4	.1811
Trips fishing	25.15	48.78	12.36	28.05	.0955
Trips hunting	12.75	34.9	8.38	12.55	.3853
Trips trapping	3.04	14.04	1.49	7.04	.4664
Trips target shooting archery	10.18	18.55	8.36	15.88	.5816
Trips target shooting firearms	10.64	18.325	10.11	16.42	.8734

¹ n=55

The data from Table 3 (trips made by participants) is consistent with the decrease in overall participants, in heritage sport activities from Table 2. There was a decrease in participation by campers for all of the outdoor heritage activities. However, paired t-tests showed that none of these differences were statistically significant.

Along with the general behavior and intention questions the survey measured with whom the campers participated while they were hunting, fishing, and trapping after camp. As Table 4 shows, the majority of campers participated in heritage sports with an adult mentor, and in all three sports, the father was the most frequent companion. When surveyed only 4 of the 55

campers stated they did not have a mentor in their life who they could participate in heritage sports with. This shows that 93% of the campers have a positive adult role model in their life.

Table 4: Type of Mentor Each Camper Participated in Each Activity With

If you participated in a heritage sport activity who did you go with?

Activity Partner ¹	Fishing ²	Hunting	Trapping
Mother	11	3	0
Father	18	25	4
Brother	0	0	1
Sister	0	0	0
Grandparent	5	2	0
Aunt	0	0	0
Uncle	0	0	0
Cousin	0	2	0
Friend	2	0	2
Neighbor	0	0	0
Myself	0	2	0
Didn't go	19	23	48

¹ n=55

² number of people who went with each type of mentor

Table 5 shows the change in number of participants who hunted for each animal species. This data represents whether the campers hunted for the animals prior to camp, and the number of campers who hunted for that species during the follow-up period. Prior to camp 37% of campers (54 out of 145) went hunting. When asked about their intentions to hunt after camp, 65% (94 out of 145) of the campers indicated they wanted to hunt after camp. Six months after camp 65% of campers (36 out of 55) had gone hunting. There was a 35% decrease in campers who hunted for small game. However, there was a 28% increase in deer hunters. The rest of the categories had minimal or no change.

Table 5: Number of Campers Who Hunted for Each Species, Pre-Camp, Post-Camp Intentions, and Follow-up

Species Hunted	Pre-Camp Participants ¹	Intended Post- Camp Participants ²	Follow-Up Participants ³	% Change Pre-survey to Follow-up
Small Game	54	75	36	-35%
Waterfowl	18	35	18	0%
Bear	1	15	0	-1%
Coyote	5	5	5	0%
Turkey	4	45	4	0%
Deer	20	94	36	+28%
Total	102	269	99	

¹ n=54

² n=94

³ n=36

Table 6 shows the species that campers have hunted, intended to hunt, or actually hunted. Small game (squirrel, rabbit, and pheasant) and deer were the two most popular species to be hunted prior to arriving at camp, and campers also expressed strong intention to hunt these species after leaving the camp. There was a decrease by 87 in the amount of trips taken to hunt for small game. However, there was an increase by 153 trips in campers who were hunting deer. With this increase in hunting deer, there was an overall increase in hunting trips taken by the campers in the amount of 78 total trips.

Table 6: Number of Trips by Campers, Pre-Camp, Post-Camp Intentions, and 6-Month Actual Trips

Species Hunted	Pre-Camp Trips	Intended Trips Post-Camp	Follow-Up Actual Trips	Change Pre-survey to Follow-up
Small Game	182	339	95	-87 trips
Waterfowl	29	114	31	+2 trips
Bear	1	18	0	-1 trip
Coyote	25	67	8	-17 trips
Turkey	10	10	11	+1 trip
Deer	38	131	191	+153 trips
Totals	258	544	336	+78 trips

Table 7: Type of Game Species Actually Harvested by Youth Pre and 6-Month Follow-up

Species Hunted	Pre-Camp Harvest	Follow-up Harvests	Change Pre-survey to Follow-up
Small Game	116	73	-43 animals harvested
Waterfowl	22	23	+1 animal harvested
Bear	1	0	-1 animal harvested
Coyote	7	1	-6 animals harvested
Turkey	5	3	-2 animals harvested
Deer	38	31	-7 animals harvested
Total	189	131	-58 animals harvested

As Table 7 shows, the most common animals harvested by youth were small game animals, with squirrel being the most prevalent. The second most harvested species group was waterfowl (goose and duck). Overall, there was a drop in harvest rate. The campers harvested 58 fewer game animals' 6-months after camp, than the previous year.

Data were also collected on the type of equipment the campers owned. Lack of access to proper equipment can be a barrier to participation in heritage sports. It was important to collect data on what types of equipment, if any, campers have or are interested in obtaining. Prior to arriving at camp a sleeping bag was the most owned item, followed by a fishing rod. A kayak was the least owned item by the campers (Table 8). Six months after leaving camp the sleeping bag was still the most owned item, again followed by the fishing rod. The least owned item in the follow-up survey was the canoe.

Table 8: Type of Equipment Owned by Campers Prior to Camp and 6-Months Following Camp

Equipment Type	Own Prior to Camp	Intend To Own	Owned Six Months After Camp	% Change Pre-Survey to Follow-up
Shotgun	33	45	36	+5%
Rifle	36	50	33	-5%
Archery Equipment	37	45	37	0%
Fishing Rod	41	40	39	-4%
Animal Traps	13	21	11	-4%
Canoe	10	20	7	-5%
Kayak	8	25	8	0%
Sleeping Bag	48	50	45	-5%
Tent	37	37	37	0%

Along with measuring the actual participation in heritage sports we also took a look at some behaviors that can be linked to an interest in heritage sports. Each camper was asked if they read books about hunting or fishing, watched television shows or played video games that involved either of the activities (see Table 9). There was a 27% increase in campers who read more books about hunting and fishing. While there was a 16% decrease in the amount of campers who played video games. These are all activities that the youth themselves have control over.

Table 9 Media Consumption of Hunting and Fishing (books, video games, and television)

Type of media utilized by campers	Pre-Camp Consumption ¹	Intended Consumption Post- Camp	Follow-Up Consumption	% Change Pre-Survey to Follow-up
Read books	24	31	39	+27%
Video games	36	31	27	-16%
Television	39	44	40	+2%

¹ n=55

Conservation Knowledge

Conservation knowledge questions were designed to help the program evaluate if its goals were being met. The objective was to measure if the information campers learned about conservation at camp was retained after leaving the program. Analysis using t-tests, showed that there was a significant gain in conservation knowledge between the pre-survey and the follow-up survey for every question except the habitat question, which was scored highest on all three surveys (Table 10).

Table 10: Change in Conservation Knowledge of Program Participants

Knowledge is reported as total score of each participant based on total possible points

Item ¹	Pre-Survey ²	Follow-Up Survey ³	P
Conservation	3.43	5.04	0.017*
Stewardship	2.52	5.95	0.0001**
Habitat	6.23	6.65	0.023*
Threat to Wildlife	4.06	6.86	0.0001**
Leave No Trace	2.38	5.04	0.0001**
Ecosystems	2.87	5.60	0.0001**
Wildlife Management	2.38	5.18	0.0001**

¹ For actual item wording please see appendices,

² Average knowledge score based on overall participant scores

³ Highest score possible is 7 (1 point for each correct answer)

**P<0.01 *P<0.05

Connectedness to Nature

The emotional connection to nature perceived by the campers was measured using questions adapted from the nature connectedness scale from Gotch and Hall. This scale ranked the connectedness to nature on a 1-5 Likert type scale. Five was strongly agree and one was strongly disagree. T-tests were used to compare means between pre-camp experience and the six month follow-up. Due to positive trends in the data there is an indication that after coming to camp the campers felt more connected to nature than they had before attending the program. Specifically, the last question, “do you enjoy spending time outside showed positive significance. However, the results of the other four nature connectedness questions were not statistically significant.

Table 11: Nature Connectedness Felt by Participants in the Program

Item ¹	Pre Camp Survey		Follow-Up Survey		P
	M ²	SD	M	SD	
Time spent in nature is important	4.36	.890	4.60	.710	.1209
Learning about nature is important	4.24	.881	4.33	.862	.05893
I enjoy learning about nature	4.15	1.061	4.33	.904	0.3404
Nature makes me happy	4.24	1.053	4.56	.764	0.0709
I enjoy being outside	4.31	1.025	4.65	.775	0.0516*

¹ For actual item wording please see appendices

² Mean response on 5-point scale with “strongly disagree” coded as 1 and “strongly agree” coded as 5.

*p<0.05

From a program evaluation standpoint, on the post- and follow-up survey, campers were asked about future learning interests. There were ten options, and the most common topic campers wanted to continue to learn about was hunting, followed by wild edibles (Table 12). Campers were least interested in learning more about canoeing and camping after their camp experience.

Table 12: Topics of Program Participants Future Learning Interests

Topics to learn more about	Number of campers interested
Hunting	16
Wild Edibles	11
Trapping	9
Fishing	5
Firearms Target Shooting	5
Conservation	5
Archery	3
Survival Skills	1
Camping	0
Canoeing	0
N=55	

Camp Satisfaction

The camp satisfaction portion of the survey focused on general camp questions and campers' overall experience at camp. These questions were only asked on the post-survey and the follow-up surveys. Once again, the results were not statistically significant, but there was a slight increase in satisfaction during the six months after camp, perhaps indicating that, as campers reflected on their experience overtime, satisfaction grew somewhat.

Table 13: Measure of the Overall Satisfaction of Participants with Camp Program

Satisfaction ¹	Post ³ Camp Survey		Follow-Up ⁴ Survey		
	M ²	SD	M	SD	P
Learned new things at camp	4.20	.970	4.33	.904	0.4687
Felt safe	4.36	.868	4.62	.782	0.10
Counselors instructed well	4.53	.858	4.58	.786	0.5665
Made new friends	4.65	.726	4.67	.668	0.8808
Feel confident in new skills	4.49	.791	4.49	.900	0.9999
Positive overall experience	4.49	.900	4.58	.786	0.5776

¹ For actual item wording please see appendices

² Mean response on 5-point scale with "strongly disagree" coded as 1 and "strongly agree" coded as 5

³ Questions were only asked on post and follow-up survey

⁴ n=55

The main research question was: did camp participation have an impact on connection to heritage sports after leaving camp? The follow-up survey asked the campers if camp had an impact on their post camp behaviors in participating in the heritage sports. According to self-reports by the campers, 71% said camp did have an effect on their behaviors after camp (Table 14).

Table 14: Influence of Camp on Participation in Heritage Sports

	Frequency	Percentage	N
Yes	39	71%	55
No	13	24%	55
Remained the same	3	5%	55

Findings Regarding Research Hypotheses

H1: Participants who indicate higher satisfaction with their camp experience will have an increase in their actual participation levels in heritage sports.

Those campers who considered themselves highly satisfied with camp spent more time participating in heritage sports than those less satisfied (Table 15). However, there was not a statistically significant difference in participation in most activities between those highly satisfied and those who were not. The mean score difference in archery between those who were satisfied with their camp experience versus those who were not was the only item that indicated significance, with the highly satisfied campers participating more. See table 15.

Table 15: Hypothesis 1: Camp Satisfaction (Follow-Up)

	Highly Satisfied with Camp	Not Highly Satisfied with Camp	Difference in Participation Scores	P
Outside Alone	30.2	27.1	3.1	0.6815
Outside w/ family	26.2	36.8	-10.6	0.1501
Fishing	18	8.1	9.9	0.0845
Hunting	10.1	6.3	3.8	0.1118
Trapping	1.3	1.6	-.3	0.8144
Firearms	10	6.8	3.2	0.3175
Archery	13.9	7.1	6.8	0.0423*

*p<0.05

H2: Participants who completed the hunter safety course while attending camp will have an increase in their emotional connectedness to nature from the pre-survey to the follow-up survey.

The second hypothesis focused on participants who completed the hunter safety course while attending camp. The 22 campers who took hunter safety during camp had higher post camp scores on the Gotch and Hall (2004) nature connectedness scale, than they did prior to coming to camp (Table 16). This hypothesis was strongly supported.

Table 16: Hypothesis 2: Hunter Safety (Pre-Camp, Follow-up)

Hunter Safety ¹	Pre-Camp Survey		Follow-Up Survey		P ³
	M ²	SD	M	SD	
Time spent in nature is important	4.35	.86	4.95	.21	0.004*
Learning about nature is important	4.35	.78	4.95	.21	0.002*
I enjoy learning about nature	4.11	.99	5	.99	0.005*
Nature makes me happy	4.47	.87	4.95	.21	0.019*
I enjoy being outside	4.29	1.21	5	.99	0.039*

¹ For actual item wording please see appendices

² Mean response on 5-point scale with “strongly disagree” coded as 1 and “strongly agree” coded as 5

³ n=55

*p<0.05

H3: Participants who are members of a sportsman's club or conservation organization are more likely to have higher participation in heritage sports prior to coming to camp, than participants who are not part of any outdoor organizations.

Analysis showed there was a significant difference between club members and non-club members in every pre-camp outdoor activity except time spent outside alone and with family (Table 17). The club members participated significantly more in each activity except time spent outside with family and time spent outdoors alone. Based on the demographic data, the 17 campers who previously had a connection to a sportsmen's club or conservation organization group made up roughly 60% of the heritage sport participation prior to coming to camp (see table 17).

Table 17: Hypothesis 3: Conservation Club Membership (Pre-Camp)

	Member of a Conservation Organization ¹	Not a Member of a Conservation Organization	Difference	p ²
Outside Alone	44.3	36.2	8.1	0.4394
Outside w/ family	32.5	41.5	-9	0.271
Fishing	48.3	12.3	36	0.0029*
Hunting	27.5	4.9	22.6	0.0084*
Trapping	9	.63	8.37	0.0303*
Firearms	16.7	7.7	9	0.0346*
Archery	16.9	6.6	10.3	0.017*

¹ Mean of trips taken by program participants

² n=55

*p<0.05

H4: Participants who have little prior heritage sport experience before coming to camp will have an increase in their participation in the six months following the completion of the camp program.

For this analysis, it was noted that 37 of the 55 campers were considered to have little heritage sport experience prior to coming to camp. Based on the camper's answers to the heritage sport behavior portion of the survey a score was created to divide the campers into two separate categories. Those campers who scored 25 or higher were placed in the high heritage sport experiences category. While those campers who scored 24 or below were placed in the other category (low experience in heritage sport activities). The data from the campers showed that, even though there were high intentions to participate in heritage sports at the end of camp, there was no significant increase in 6-month follow-up participation in heritage sports. In fact, there was a significant decrease between intentions to spend more time outside alone and actual time outside alone (Table 18).

Table 18: Hypothesis 4: Low Prior Experience (Pre-Camp, Follow-Up)

	Pre-Survey Low Experience in Nature ¹	Follow-up Low Experience in Nature ²	Difference	p ³
Outside Alone	19.3	11.6	-7.7	0.0126*
Outside w/ family	19	17.2	-1.8	0.5656
Fishing	11.3	5.4	-5.9	0.0523
Hunting	3.6	4.6	+1	0.3052
Trapping	.97	.37	-.6	0.1525
Firearms	4.3	6.2	+1.9	0.0657
Archery	3.6	4	+.4	0.7533

¹ Mean of trips taken by program participants, 2 n=55, *P<0.05

H5: Participants who feel a greater sense of connectedness to nature will have an increase in actual heritage sport behaviors following their time spent at camp.

Based on mean scores, the campers who were highly connected to nature participated more in heritage sports than those who had a low connection to nature (Table 19). However the differences in participation were not statistically significant

Table 19: Hypothesis 5: Impact of Connectedness (Pre-Camp, Follow-Up)

	Highly Connected to Nature ¹	Not Highly Connected to Nature	Difference	P
Outside Alone	40.82	35.33	5.49	0.511
Outside w/ family	41.09	34.90	6.19	0.4698
Fishing	26.38	18.8	7.58	0.3883
Hunting	10.4	14.33	-3.93	0.5471
Trapping	4.29	1.14	3.15	0.1974
Firearms	13.57	8.59	4.98	0.155
Archery	12.04	8.41	3.64	0.3125

¹ Mean of trips taken by program participants

Along with the quantitative data collected for this research the surveys also included open-ended questions. For each behavior the campers participated in, they were asked to give a numerical ranking as to their enjoyment level (Table 20).

Table 20: Participation Enjoyment Level

If you participated in a heritage sport activity how would you rate your experience?

Activity ¹	Very Bad ²	Bad	Not Bad or Good	Good	Very Good	Did Not Go
Fishing	1	0	4	19	14	17
Hunting	1	1	5	10	17	21
Trapping	2	0	6	8	2	37

¹ n=55

² The scale was a five point scale with one being a very bad experience and five being a very good experience

After responding to the scale, campers were then asked why they rated the activity with the score they did. Common answers for responses that were positive reasons for enjoyment in heritage sports included: spending time with family members and being successful in the activity (catching fish or harvesting an animal). Negative responses were often followed with explanations of boredom, poor weather, and lack of success. These results are consistent with other studies including Everett, 2013.

CHAPTER 5

Discussion, Limitations, and Recommendations

Discussion

The purpose of this research study was to evaluate the camp program's impact on behaviors, intentions, and connection to heritage sports. After reflecting on the data, there are a few insights that this study provided.

Based on the demographics of the campers there are many similarities between the respondents of the surveys. With similar ages, school grades and many with primarily the same backgrounds coming from similar school systems this leads us to believe the non-respondents and respondents may have had similar answers on the 6-month follow-up survey.

For the first insight, there was significant retention of conservation knowledge by the campers. This result shows that the curriculum-based teachings of the program are having an impact on the campers. The fact that conservation knowledge increased on both the post-survey and the follow-up survey shows the campers not only learned the topics, they also retained the information six months later. Not only did the campers retain their conservation knowledge, it also increased during the 6-months they were away from camp. This increase could be attributed to increased reading on heritage sport topics that was shown in Table 9. It could also be a reflection of the high intentions for the campers to continue their connection to heritage sports and the knowledge piece was easier for them to practice than the actual behaviors. This is a good sign that the current curriculum is having a positive impact on the campers during their time at camp and beyond.

The second insight was the impact club membership had on campers. Kids who belonged to a sportsmen club or conservation group prior to coming to camp are more likely to already

participate in heritage sports. This shows that early heritage sport introduction to youth can make a difference on the intention and behavior levels of kids. This also shows that the campers who are members of clubs are coming to camp to continue to learn more about heritage sports, which is a positive result for the camp program.

The third interesting result from this survey is that there was a significant increase in the connectedness to nature experienced by the campers who took the Hunter Safety course at camp. The 22 campers who took the hunter safety course at camp all had significant increases in their nature connectedness after the end of camp. The hunter safety program at camp is the same curriculum that is delivered across the state of Michigan. However, the structure to the course at camp is very different than most traditional classes. The first difference that could contribute to the higher connectedness level is the way the time for the course is used. The camp course is broken into two 1 hour sessions each day and continues over a 4 day time span for the major topics. Then the camp program covers 8 hours of range time and field learning throughout the week. The traditional course is typically a full 8 hour day of classroom course work followed by a full 6-8 hour day of field learning and range time. Another difference between the camp and traditional course is the opportunity to be surrounded by nature while taking the class. In the traditional course, lessons are usually taught in a classroom setting and then the youth are in the field and on the range. With the camp program, the coursework is taught at different spots on the camp property, classes are held among the trees, near the waterfront and in fields. The only actual classroom time is during the testing portion of the class. These different locations are used on the property to immerse the campers in the natural world. Having the classes in the fields and on the water where campers would actually be hunting, also allows for a very hands on approach to the learning. At the camp, the campers have the opportunity to participate and practice

activities they are learning about in the course book. This is another difference from the traditional classroom setting that could have had an impact.

A fourth finding from the study shows youth who are participating in heritage sports are most commonly going out with their fathers. This finding is consistent with previous demographic studies done in Michigan. According to Frawley (2006), the Michigan DNR regularly conducts hunter surveys that show male role models are the most prominent heritage sport participants, with the father being the most frequent companion. This camp study also revealed the game most commonly pursued by the campers. Prior to their experience at camp small game hunting was the most popular form of hunting. However, after their camp experience there was a steep increase in the amount of youth hunting deer. Consistent with hunter data for Michigan, hunting for white-tailed deer was the most popular activity (Frawley & Coon, 2014). Given that white-tailed deer is the most popular game animal in Michigan, it is unsurprising that campers would indicate they pursued it the most frequently. The next most common game species pursued were small game and waterfowl.

An interesting result that the youth are able to control themselves is the amount of media they consumed. According to Table 9, there was a 27% increase in campers who read more books about hunting and fishing. This is an encouraging result and may help to explain the significant increase in conservation knowledge for the campers. Also of note, one of the camps objectives is to unplug kids from technology (iPods, Xboxes, and cell phones). As the data indicates there was a 16% decrease in the amount of campers who played video games during the 6-months after returning from camp. This is a positive result in regards to one of the camp objectives.

A final finding was that 39 campers (71%) said camp had an impact on their heritage sport participation. Consistent with this recorded change in behavior there was an increase in actual number of reported hunting trips post-camp. Although there was an overall decrease of participants in all of the heritage sport categories, those who did participate did it more frequently than they had prior to camp. This overall decrease in heritage sport participation was experienced by all 55 campers who completed the three surveys. One possible explanation is that on the pre-test, the youth struggled to accurately record the amount of times they participated in heritage sports. Asking the youth to recall a period of time that was 6-12 months in the past may have led to over estimations on their part. The follow-up survey asked about the six months directly in the past and may have been easier for the campers to remember. The campers were also aware they would be asked to complete the follow-up survey and could possibly have kept track of their outings after camp, unlike when they took the pre-survey on the first night of camp.

Another possible explanation for the difference in pre-survey and follow-up behaviors could be attributed to the impact of taking the pre-survey surrounded by peers, versus taking the follow-up survey in their own homes. Campers may have exaggerated their pre-camp experiences to impress bunkmates as a way to fit in and make new friends on the first night of camp.

Qualitative Results

This study not only asked campers about activities they participated in but they also asked them to rank the enjoyment level of participating in the activities as displayed in Table 20 in Chapter Four. These rankings were then followed by a simple question of why? Campers who rated the activities highly had three main reasons for doing so. The first reason campers

ranked the activities as highly enjoyable were success. If campers had what they viewed as a successful hunting or fishing season, they often gave the activity a five on the enjoyment scale. Campers, who cited successful trips, indicated they had harvested animals or fish. The second most popular reason campers rated an activity as enjoyable was spending time with family members. The campers placed a high priority on spending time with their companions and mentors hunting, fishing, or trapping. These findings are consistent with previous research that suggests there is a direct relationship between positive youth-mentor relationships during the experience and intention to continue hunting in the future (Everett, 2013). Finally, a third pattern that was reflected in the responses was the connection to nature. Many campers stated they enjoyed the activity because it was “neat to be outside” or “it was cool to see the woods come alive.” This connection to nature and experience feeling like they were part of the natural world was prevalent for several campers who rated heritage sports enjoyable.

There were three main reasons why campers rated their activities as not enjoyable. Campers who rated activities as one or two on the scale were classified as not enjoying the heritage sport activity. The most prominent reason for campers to rate an activity as not enjoyable was lack of success. Campers mentioned not having a successful harvest due to either no animals/fish, or animals/fish that were too small as being their main reason for not enjoying the activity. The second reason campers stated was poor weather. Wind, rain, and cold all played a factor in an activity being rated as not enjoyable. Finally, boredom with an activity was the third reason most frequently given. Heritage sport activities, especially hunting and fishing can be long in duration, and if there isn’t much for the youth to do, it is easy to see how youth would become uninterested and bored.

According to the campers 41 participants wanted to participate in a heritage sport activity or event during their six months after camp but were unable to for many reasons. Some of these reasons are: no mentors available to take them or to continue to build on the lessons learned at camp; the youth or their families didn't have the proper equipment; the weather was uncooperative; and time conflicts. It is important to note the high level of intentions by the campers did not turn into a high level of participation. On top of some of the barriers listed above, it is hard for many youth of this age to be able to hunt or fish by themselves. In many cases, the youth must rely on their parents for transportation and support when it comes to hobbies. If youth were from a household with limited heritage sport experience they may have had high intentions to go hunting after camp, but their parents may not have allowed them, or provided them with the opportunity. Another factor is the time constraints 21st century youth face. Between school, extra-curricular activities, and personal or family hobbies, camp participants may not have had much time to dedicate to continuing their interest in hunting or fishing.

Limitations

This study had several limitations in its design. First, youth who attended this summer camp program showed at least some prior interest in an outdoor focused program. By merely attending the camp, the youth were signaling their interests and willingness to learn about conservation. This limits the generalizability of these results to all youth. Another challenge with the follow-up study was the low response rate. With only 55 campers completing all three surveys, the useable consistent information collected was drastically reduced. One possibility for the lack of responses could have been the interest level of the campers. Another possibility could have been the activity level of youth ages 12-16. During this stage in their life extra-curricular

activities such as sports, academics, and social engagements make it hard for youth to focus on individual tasks, especially during the school year. After already completing two surveys at camp, capturing their interest six months later and having them complete another survey was not highly effective.

Another limitation was recall bias. Studies have shown dramatic differences in the ability of youth to remember details accurately (Tasimi & Johnson, 2015; Watts & Weems, 2006), especially when reflecting over extended periods of time. The six month study window was also a limitation. Ideally this survey would have been conducted over a one year reflection period. However, funding for this project was limited. Also there was concern about an even lower response rate one year later compared to six months. The time frame for conducting the follow up study would have coincided with the 2015 camp season, making it extremely difficult for the researcher to run the camp and conduct the follow-up survey.

Implications for Policy Makers

With a growing emphasis on getting kids active, this research helps to expand the knowledge base on activity interests for youth. By learning more about what interests youth, policy makers in school districts and at the legislative level can take action to create opportunities and access for youth to engage in activities like heritage sports.

For the MUCC Board, this study helps to highlight the conservation education component of the MUCC mission. This study highlights the importance of teaching youth about conservation, and that the youth can not only understand the concepts, but they retain the information and believe it is important months after participating in the program.

Continuing to learn more about conservation was something the youth indicated interested them. Policy makers can help continue to encourage youth to participate in heritage

sports. The survey data show campers were interested in learning more about conservation. By having policy makers promote opportunities for youth to learn and engage in conservation, policy makers can help to further these interests. Tailoring school curricula or outreach events to connect to conservation would help kids continue to learn more and to extend the benefits of their camp experience.

The study also showed youth had an increase in their nature connectedness after spending time in the outdoors. Continuing initiatives such as No Child Left Inside, that encourage youth to get outside and into natural settings, would be another way policy makers could help. Finally, increased funding for equipment at local parks and for the DNR to distribute may help increase access and opportunity to the youth. The campers indicated their need for new equipment at the personal level; perhaps the creation of a program with funding that would allow youth to rent equipment would allow them to increase their heritage sport participation.

Implications for Researchers

This research contributes to the literature by adding activity preferences of youth in the outdoors specifically the youth ages 12-16. It also continues to expand on the understanding of behaviors and interest preferences. The study helps to provide a foundation for getting youth interested in heritage sports and conservation and also contributes to the large body of research on residential camp experiences. As a foundation for behavior change and participation in heritage sports, it opens the door to further research as to the types of barriers the youth encountered that limited their opportunities to participate in heritage sports. Also focusing on the behaviors of the youth, this study seems to show a lack of support for the theory of reasoned action. The theory states the intentions of an individual will lead to behaviors. In this study, although campers expressed intentions to participate in heritage sports, there was a decrease in

their actual behaviors. The final contribution to the literature from this study is the challenge that goes along with staying in contact with a youth population once they complete the program. Limitations in access to get the participants to complete the follow-up survey and return them in months after their camp experience was a major barrier during this research.

Implications for Camp Program

Based on internal camp statistics, over the last three years the camp program has seen an increase in attendance and a higher return rate of repeat campers for this age group. This study shows kids have high intentions to be in the outdoors learning about hunting, fishing, and other heritage sports. This study was designed to serve as a program evaluation as well as to gather data on youth participation levels. As an evaluation tool, the data show campers are retaining key points from the conservation education curriculum beyond their camp experience. With the campers spending time immersed in the outdoor environment and disconnected from technology, they have the opportunity to focus on conservation. With over 50 hours of hands on programming related to the conservation curriculum each week, the campers have a chance to connect with the resources in a tangible way. However, the data indicate campers were participating less than they were prior to camp. It also helped to reveal what campers are interested in for future years.

Knowing what campers want to learn more about can be beneficial when designing programs and curriculum. Youth wanted to continue to learn more about the technical skills of heritage sports. Building their confidence and skill set was important to the campers, based on findings from the follow-up study. Hunting, wild edibles, and trapping were all activities in which the campers indicated that they would like to expand their skills.

By matching these interests with future programs, this can help MUCC continue its tradition of successful conservation education programs. The demographic data from the campers also helped to provide baseline data for grant applications and represents the organizations desire to continue to improve its camp program. Lastly, this research helped to create a picture of our typical youth camper and highlight the needs the youth have in regards to learning more about conservation and participating in heritage sports. Based on the 55 responses to all three surveys, the typical camper profile for this age group is as follows: The typical camper is a male who is 14 years old with no previous camp experience. They don't have a connection to a sportsmen's club or conservation organization and they haven't taken hunter safety prior to coming to camp. This information can help the camp develop marketing techniques to recruit campers and develop programs based around the typical camper.

The needs of the campers the surveys revealed are consistent with what one would expect would be barriers for youth in this age group. A major need for the campers to continue to participate in heritage sports was learning more about accessible places to participate in heritage sports. Beyond learning about access opportunities, the lack of equipment was another barrier to the campers. The participants expressed interest in obtaining new equipment to help them participate in heritage sports. High-cost items like shotguns, rifles and archery equipment were all selected as equipment the campers would like to own. Finally, the campers expressed a need to continue to build their technical skills. Many of the heritage sports require skills that require repetition and lots of practice. Activities like archery and firearms target shooting require many hours on the range to become proficient. While sports like hunting and fishing can take years to develop competency, many of the opportunities for the campers to improve their skills beyond

camp are limited. The campers' desired and actual participation in heritage sports can be impacted by their technical abilities.

Recommendations for Future Studies

The next step in regard to future research should be to find out more information about the barriers that campers experience after they leave the program. Gathering information about challenges to their continued participation in heritage sports is important to help close the gap between the camp experience and regular participation at home.

Another avenue for continued research is getting the parents perspective on their child's participation in heritage sports. It would be very interesting to see how the views of the camper match or differentiate from the views of the adults in their life. It would also be interesting to measure the parent's opinions on how the camp impacted the kids in general and in relation to heritage sports.

Significance

By conducting this analysis and discovering the effects of the camp program on participation in youth heritage sports, the research served as a measuring tool for the camp program itself. It appears time spent at camp has had some impacts, especially in conservation knowledge retention and connectedness to nature. However, in regards to heritage sport participation, the results indicate a decrease in the number of behaviors participated in by the youth. Further research should be conducted with a larger sample size to determine if camp attendance can also lead to the possibility of an expanded user base for the heritage sports which is the ultimate goal for the camp program.

By expanding the knowledge base of user behaviors in the environment especially from the youth perspective, this study has served as a snapshot of the youth who attended this camp.

The study also contributed to furthering the literature for engaging youth in the environment and, understanding how teens perceive their behaviors with outdoor experiences.

This research has benefited MUCC by providing it with valuable information that can be used for future program critiques and developments in both the camp environment and other youth outreach opportunities of the organization. MUCC and the Michigan OutofDoors Youth Camp will use this research to build on its programs and continue to grow as a front runner in conservation education and heritage sport opportunities for the youth of Michigan.

APPENDICES

APPENDIX A: Michigan State University IRB Approval Letter

MICHIGAN STATE UNIVERSITY

June 26, 2014

Initial IRB Application Approval

To: Daniel McCole
Natural Resources Building
480 Wilson Rd. Room 131

Re: **IRB# 14-589** Category: EXPEDITED 7
Approval Date: June 18, 2014
Expiration Date: June 17, 2015

Title: The Effects of a Conservation Summer Camp Program on Youth Participation in Heritage Sports

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been approved.**

The committee has found that your research project is appropriate in design, protects the rights and welfare of human subjects, and meets the requirements of MSU's Federal Wide Assurance and the Federal Guidelines (45 CFR 46 and 21 CFR Part 50). The protection of human subjects in research is a partnership between the IRB and the investigators. We look forward to working with you as we both fulfill our responsibilities.

Renewals: IRB approval is valid until the expiration date listed above. If you are continuing your project, you must submit an *Application for Renewal* application at least one month before expiration. If the project is completed, please submit an *Application for Permanent Closure*.

Revisions: The IRB must review any changes in the project, prior to initiation of the change. Please submit an *Application for Revision* to have your changes reviewed. If changes are made at the time of renewal, please include an *Application for Revision* with the renewal application.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects, notify the IRB office promptly. Forms are available to report these issues.



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East Lansing, MI 48824
(517) 355-2180
Fax: (517) 432-4503
Email: irb@msu.edu
www.humanresearch.msu.edu

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read "H. McGee".

Harry McGee, MPH
SIRB Chair

c: Shaun McKeon

MSU is an affirmative-action,
equal-opportunity employer.

APPENDIX B: Parental Consent and Camper Assent Form
The Effects of a Conservation Summer Camp Program on Youth Participation in Heritage Sports
Parental Consent and Youth Assent Form

Study's Purpose

The goal of the Michigan OutofDoors Youth Camp for Kids is to expose youth to hands-on outdoor recreational opportunities specifically focusing on heritage sports (hunting, fishing, trapping, camping, and canoeing). Because of their attendance at camp, your child has been selected to participate in a survey study to measure the impact of the camp program on youth behaviors. Participants in this study will complete a short survey at the beginning and end of camp and again six months later. The purpose of this research is to measure the impact of the camp program on youth behaviors prior to camp, intended behaviors upon leaving camp, and actual behaviors six months later. The goal of collecting this information is to provide better insight to the outdoor recreational behaviors of youth ages 12-16 years old, and the activities they intend to pursue after exposure to educational and hands-on learning opportunities in the camp setting.

What Will Your Son or Daughter Do

You are being asked to give permission for your son or daughter to participate in this study, during which we will ask your son or daughter to fill out two survey questionnaires while attending camp and one survey six months after they have finished their camp experience. The on-site surveys will be administered the first night of camp and the final night of camp. The six month follow-up survey will be sent to your house from Michigan United Conservation Clubs (MUCC) and Michigan State University. Each survey should take approximately 30 minutes to complete for a total participation time of 1.5 hours. By signing this form you are giving permission (consent) for your child (assent) to participate in this research during their time at the MOOD Youth Camp and the six month follow-up.

Risks and Benefits

As the guardian this study does not entail any additional effort or time on your part. For the youth they will participate in two 30 minute survey sessions while they are at camp, as well as the time for completion of the follow-up survey. There are no known or perceived risks to participating in this study. You will not directly benefit from your participation in this study. However, participation will contribute to improving the camp program for future campers, as well as shed light on youth behaviors regarding their heritage sport activity preferences. You will not receive money or any other form of compensation for participating in this study.

Privacy and Confidentiality

All data collected from the surveys, will be kept confidential. A coding system will be used when distributing the surveys at camp, and again when administering the follow-up survey. Your child's specific code will only be used to match their pretest with the follow-up tests. This information will be destroyed at the end of the research. All of the data collected will be de-identified and no individuals will be identified in the final research reports or articles. We will also be sure that contextual descriptions do not reveal your son or daughters identity. The researchers will be the only ones that have access to the research material. The research data will be stored in a locked and secured closet at camp and the paper surveys from the six month follow-up will be stored in a locked file cabinet for three years. The data will only be made available to the researchers associated with this study. The privacy of your child's information will be fully protected by both MUCC and MSU.

Your Permission

Participation in this study is completely voluntary. You are under no pressure or obligation to agree to have your son or daughter take part in this study. You may withdraw at any time without any penalties. If you agree to the terms of participation, please 1) sign your name at the bottom of this form and have your son or daughter sign their name and, 2) return this form to the registration table at camp check in.

Contact Information:

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an inquiry please contact, Shaun McKeon (MUCC 2101 Wood St. Lansing, MI 48912 or smckeon@mucc.org, or 517-346-6466) or Dr. Dan McCole Ph.D. (Michigan State University 137 Natural Resources Building, 480 Wilson Rd. East Lansing, MI 48824, or mccoled@msu.edu or 517-432-0295).

If you have question or concerns about your role and rights as a research participant, would like to obtain information, offer input, or register a complaint about this study, you may contact anonymously if you wish, the Michigan State University Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at Olds Hall, 408 West Circle Drive #207, MSU, East Lansing, MI 48824.

Your signature below means that you voluntarily agree to participate in this research study.

Assenting Youth Name (Age 12-16)	Date	Signature
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Parent or Guardian Name	Date	Signature
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You will be given a copy of this form to keep.

APPENDIX C: Pre- Camp Survey Materials



Camp Survey Youth Pre-Camp Michigan OutofDoors Youth Camp Youth Survey 2014



MUCC and MSU are working to ensure we have the highest quality programming available to our youth. We would like your help in answering a few questions. Your answers will be private and confidential. You are welcome to stop the survey at any time. By taking part in this survey you understand that participation in this study is strictly voluntary.

Please write your name, MUCC and MSU will keep your name and answers confidential.

Name _____

Please respond to the following questions based on your behavior during July 2013 through January 2014 before arriving at camp. Please fill in each box with a number.

Behavioral Questions:

4. During July 2013 through January 2014, how many times were you outside in nature by yourself?

5. During July 2013 through January 2014, how many times were you outdoors in nature with one or more members of your family?

6. During July 2013 through January 2014, how many times did you go fishing with someone but not actually fish yourself?

7. During July 2013 through January 2014, how many times did you actually fish?

8. If you actually went fishing, who did you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor

By myself **Other (please specify)** _____

9. If you went fishing during July 2013 through January 2014 how would you rate your fishing experiences?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating?

10. During July 2013 through January 2014, how many times did you go hunting with someone but not actually hunt yourself?

(If you didn't go hunting please skip to question 16)

11. During July 2013 through January 2014, how many times did you actually hunt?

12. If you went hunting, who did you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor

By myself **Other (please specify)** _____

13. If you went hunting, how many times did you go hunting for each species during July 2013 through January 2014?

___ **Small game (rabbit, squirrel, grouse, pheasant, woodcock, etc.)**

___ **Waterfowl** ___ **Bear** ___ **Coyote** ___ **Deer**

14. During July 2013 through January 2014, how many of each animal did you successfully harvest while hunting?

_____ **Small Game (rabbit, squirrel, grouse, pheasant, woodcock, etc.)**

___ **Waterfowl** ___ **Bear** ___ **Coyote** ___ **Deer**

15. If you went hunting during July 2013 through January 2014 how would you rate the experience?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating? _____

16. Did you have a Michigan Fur Harvester (trapping) License during July 2013 through January 2014?

Yes **No**

17. During July 2013 through January 2014, how many times did you go trapping with someone but not actually trap yourself?

18. During July 2013 through January 2014, how many times did you actually trap?

19. If you went trapping during July 2013 through January 2014 how would you rate the experience?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating? _____

20. During July 2013 through January 2014, how many times did you participate in archery target shooting? Firearms target shooting? Archery Firearms

21. During July 2013 through January 2014, how many times did you want to go hunting, fishing, or trapping and weren't able to go?

22. During July 2013 through January 2014, how many times did you eat fish or game that you or someone in your family harvested?

23. What is one thing you would most like to learn more about in regards to the outdoors?

Hunting-Fishing-Trapping –Archery-Firearms Target Shooting-Canoeing-Wild Edibles - Survival Skills-Camping-Conservation

Cognitive Questions: Please select the best answer

24. Wildlife conservation ensures through wise use that _____?

- A. hunting seasons and bag limits never change
- B. renewable natural resources can replenish themselves forever
- C. no animals are ever harvested
- D. natural resources can be used without thinking
- E. Don't Know

25. Land Stewardship is?

- A. Preserving the land intact with no changes
- B. Caring for the land and resources to pass on healthy ecosystems to future generations

- C. Banning all hunting on a property
- D. Converting land to urban areas
- E. Don't Know

26. All animals need habitat to survive, the four main resources necessary for habitat are space, food, water, and _____?

- A. shelter
- B. minerals
- C. soil
- D. predators
- E. Don't Know

27. The biggest threat to wildlife is?

- A. Air pollution
- B. Legal hunting
- C. Predators
- D. Loss of habitat
- E. Don't Know

28. Which of these is not an ethical principle of Leave No Trace?

- A. Dispose of Waste Properly
- B. Respect Wildlife
- C. Collecting plants to study them in the classroom
- D. Leave what you find
- E. Don't Know

29. Which of the following terms is used to describe all of the living and non-living interacting features of a given area?

- A. Habitat

- B. Ecosystem
- C. Community
- D. Biodiversity
- E. Don't Know

30. Which of these is not an effective wildlife management strategy?

- A. Habitat Improvement
- B. Hunting
- C. Disease
- D. Stocking
- E. Don't Know

Emotional Questions: <i>Please answer these questions in terms of the way you feel generally.</i> 1=Strongly Disagree 3=Neither Disagree or Agree 5= Strongly Agree					
	1 Strongly Disagree	2	3 Neither Disagree or Agree	4	5 Strongly Agree
29. Spending time in nature is important to me	☐	☐	☐	☐	☐
30. Learning about nature is important to me.	☐	☐	☐	☐	☐
31. I like learning about nature.	☐	☐	☐	☐	☐
32. Nature makes me happy	☐	☐	☐	☐	☐
33. I like to be outside.	☐	☐	☐	☐	☐

Demographics:

34. What is your gender?

Male

Female

35. What is your age while attending the 2014 Michigan OutofDoors Youth Camp?

12

13

14

15

16

36. Is this the first time you have attended a program with a conservation focus?

Yes

No (If no, what other conservation program have you attended)?

37. Did you have your Hunter Safety Certificate prior to coming to camp?

Yes

No

38. Have you ever had a hunting license?

Yes

No

39. Are you or another in your family a member of a conservation club or organization? If yes what organization?

Yes _____

No

40. How many brothers and sisters do you have? (Please include those not attending camp).

0

1

2

3

4

5+

41. Do you have an impairment that seriously limits your participation in outdoor recreation?

Yes

No

42. Please circle each type of recreational equipment you own.

Shotgun-Rifle-Bow/Arrows-Fishing Rod-Animal traps-Canoe-Kayak-Sleeping Bag-Tent

43. Do you spend time reading about hunting, fishing, or trapping?

Yes No

44. Do you play video games about hunting or fishing?

Yes No

45. Do you watch TV or movies about hunting or fishing?

Yes No

46. Do you have someone in your life who could continue teaching you how to hunt or fish?

Yes No

Thank you for participating in the Survey!

You are awesome!

Please return your pencil and place the survey into the envelope

APPENDIX D: Post Camp Survey Materials



Michigan OutofDoors Youth Camp Youth Survey 2014
Camp Survey Youth Post Camp



MUCC and MSU are working to ensure we have the highest quality programming available to our youth. We would like your help in answering a few questions. Your answers will be private and confidential. You are welcome to stop the survey at any time. By taking part in this survey you understand that participation in this study is strictly voluntary.

Please write your name, MUCC and MSU will keep your name and answers confidential.

Name _____

Please respond to the following questions based on what you plan to do between July 2014 and January 2015 when you leave camp, and fill in each box with a number.

Behavioral Questions:

4. Between July 2014 and January 2015, how many times do you plan to be outside in nature by yourself?

5. Between July 2014 and January 2015, how many times do you plan to be outdoors in nature with one or more members of your family?

6. Between July 2014 and January 2015., how many times do you plan to go fishing with someone but not actually fish yourself?

7. Between July 2014 and January 2015, how many times do you plan to actually fish?

8. If you actually go fishing, who will you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor
By myself Other (please specify) _____

9. Between July 2014 and January 2015, how many times do you plan to go hunting with someone but not actually hunt yourself? (If you don't plan to go hunting please skip to question 13)

10. Between July 2014 and January 2015, how many times do you plan to actually hunt?

11. If you go hunting, who will you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor
By myself Other (please specify) _____

12. Between July 2014 and January 2015, how many times will you go hunting for each species?

___ **Small game (rabbit, squirrel, grouse, pheasant, woodcock, etc.)**

___ **Waterfowl** ___ **Bear** ___ **Coyote** ___ **Deer**

13. Will you have a Michigan Fur Harvester (trapping) License between July 2014 and January 2015?

Yes **No**

14. Between July 2014 and January 2015, how many times do you plan to go trapping with someone but not actually trap yourself?

15. How many times do you plan to actually trap, between July 2014 and January 2015?

16. Between July 2014 and January 2015, how many times will you participate in archery target shooting? Firearms target shooting? Archery Firearms

17. Between July 2014 and January 2015, how many times will you want to go hunting, fishing, or trapping and won't be able to go?

18. Between July 2014 and January 2015, how many times do you plan to eat fish or game that you or someone in your family harvested?

19. If you learned something new at camp please circle?

Hunting **Fishing** **Trapping** **Archery** **Firearms Target Shooting**
Canoeing **Wild Edibles** **Survival Skills** **Camping** **Conservation**
Other _____ **Nothing**

Cognitive Questions:

20. Wildlife conservation ensures through wise use that _____?

- A. hunting seasons and bag limits never change
- B. renewable natural resources can replenish themselves forever
- C. no animals are ever harvested
- D. natural resources can be used without thinking
- E. Don't know

21. Land Stewardship is?

- A. Preserving the land intact with no changes
- B. Caring for the land and resources to pass on healthy ecosystems to future generations
- C. Banning all hunting on a property
- D. Converting land to urban areas

E. Don't know

22. All animals need habitat to survive, the four main resources necessary for habitat are space, food, water, and _____?

- A. shelter
- B. minerals
- C. soil
- D. predators
- E. Don't know

23. The biggest threat to wildlife is?

- A. Air pollution
- B. Legal hunting
- C. Predators
- D. Loss of habitat
- E. Don't know

24. Which of these is not an ethical principle of Leave No Trace?

- A. Dispose of Waste Properly
- B. Respect Wildlife
- C. Collecting plants to study them in the classroom
- D. Leave what you find

E. Don't know

25. Which of the following terms is used to describe all of the living and non-living interacting features of a given area?

A. Habitat

B. Ecosystem

C. Community

D. Biodiversity

E. Don't Know

26. Which of these is not an effective wildlife management strategy?

A. Habitat Improvement

B. Hunting

C. Disease

D. Stocking

E. Don't Know

Emotional Questions: *Please answer these questions in terms of the way you feel*
1=Strongly Disagree 3=Neither Disagree or Agree 5= Strongly Agree

	1 Strongly Disagree	2	3 Neither Disagree or Agree	4	5 Strongly Agree
27. Spending time in nature is important to me	☐	☐	☐	☐	☐

28. Learning about nature is important to me.	☐	☐	☐	☐	☐
29. I like learning about nature.	☐	☐	☐	☐	☐
30. Nature makes me happy	☐	☐	☐	☐	☐
31. I like to be outside.	☐	☐	☐	☐	☐

General Camp Questions: <i>Please answer these questions in terms of the way you feel</i> 1=Strongly Disagree 3=Neither Disagree or Agree 5= Strongly Agree					
	1 Strongly Disagree	2	3 Neither Disagr ee or Agree	4	5 Strongl y Agree
32. I learned new things while I was at camp.	☐	☐	☐	☐	☐
33. I felt safe while I was at camp.	☐	☐	☐	☐	☐
34. The counselors did a good job of teaching and instructing.	☐	☐	☐	☐	☐
35. I made new friends at camp.	☐	☐	☐	☐	☐
36. I felt confident in doing the new skills I learned at camp.	☐	☐	☐	☐	☐
37. My overall experience at camp was positive.	☐	☐	☐	☐	☐

Demographics:

38. Was this the first time you have attended a program with a conservation focus?

Yes

No (If no, what other conservation program have you attended?)

39. Do you plan to get a hunting license?

Yes No Maybe

40. Do you have an impairment that seriously limits your participation in outdoor recreation?

Yes No

41. Please circle each type of recreational equipment you plan to own.

Shotgun Rifle Bow/Arrows Fishing Rod Animal traps

Canoe Kayak Sleeping Bag Tent

42. Will you spend time reading about hunting, fishing, or trapping?

Yes No

43. Will you play video games about hunting and fishing?

Yes No

44. Will you spend time watching TV or movies about hunting and fishing?

Yes No

45. Do you have someone in your life who could continue teaching you how to hunt or fish?

Yes No

Thank you for participating in the Survey!

You are awesome!

Please return your pencil and place the survey into the envelope

APPENDIX E: Follow-Up Camp Survey Letter



Michigan OutofDoors Youth Camp Youth Survey 2014
Camp Survey Follow up Letter



1-19-15

Dear Camper,

Hopefully your 2015 year is off to a good start and you are staying warm this winter. You are receiving this letter as a reminder about the surveys you participated in at camp this summer. Enclosed in this envelope you will find the third and final portion of the surveys. It would be a **huge** help to camp and myself if you could take a few minutes to complete the survey and mail it back to us.

All you have to do is complete the survey and mail it back to the camp headquarters. We have provided an envelope for you to mail it and the postage has been taken care of so you don't have to worry about finding a stamp. You can fill it out in pencil or pen.

If you would rather help save a tree and do the survey electronically, you can do the survey online. Please visit <http://tinyurl.com/na5ja3w> and it will take you to the survey. You only need to do one of the surveys, either the paper or online it is up to you.

Please do your best to return the survey by March 9th, 2015. Once you return your completed survey, you will be entered into a drawing for a \$50 gift card to Cabela's. The winner will be announced at the end of March.

Thank you for all of your help filling out these three surveys. They have been very important for me as a director, and they have also been a big help to make the 2015 camp season even better than last year.

Your voice as a camper matters!

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an inquiry please contact, Shaun McKeon (MUCC 2101 Wood St. Lansing, MI 48912 or smckeon@mucc.org, or 517-346-6466) or Dr. Dan McCole Ph.D. (Michigan State University 137 Natural Resources Building, 480 Wilson Rd. East Lansing, MI 48824, or mccoled@msu.edu or 517-432-0295).

Sincerely,

Shaun McKeon

Shaun McKeon

Camp Director

APPENDIX F: Post Card to Campers

Post Card to Campers

Dear Camper,

I hope you are having a good winter! You are receiving this post card as a reminder that you participated in two surveys while you were at the Michigan OutofDoors Youth Camp for Kids. The final portion of the data collection (a third survey) will be coming in the mail to your house in about one week. Please keep an eye on your mailbox for the packet.

Once the packet arrives please take some time to complete the survey with you activities reflecting what you have been doing for the past 6 months. The survey should only take you 15-20 minutes to complete and is similar to the ones you completed at camp.

After you finish the survey you can place it in the envelope we provided for you and mail it back to MUCC. We have already paid the postage on the envelope so you don't need a stamp. If you don't want to mail the survey you can fil it out online. The link to the online survey is

<http://tinyurl.com/na5ja3w>.

Completing this survey and returning it to MUCC will enter you in a drawing for a chance to win a \$50 gift card to Cabela's. If you are the winner I will call you and mail the gift card to you.

Once again, this survey is really important to me for my school work and to make camp better so I would really appreciate your help!

Thanks

Shaun McKeon- Camp Director

Post Card to Campers

Dear Camper,

I hope you are having a good winter! You are receiving this post card as a reminder that you participated in two surveys while you were at the Michigan OutofDoors Youth Camp for Kids. The final portion of the data collection (a third survey) will be coming in the mail to your house in about one week. Please keep an eye on your mailbox for the packet.

Once the packet arrives please take some time to complete the survey with you activities reflecting what you have been doing for the past 6 months. The survey should only take you 15-20 minutes to complete and is similar to the ones you completed at camp.

After you finish the survey you can place it in the envelope we provided for you and mail it back to MUCC. We have already paid the postage on the envelope so you don't need a stamp. If you don't want to mail the survey you can fil it out online. The link to the online survey is

<http://tinyurl.com/na5ja3w>.

Completing this survey and returning it to MUCC will enter you in a drawing for a chance to win a \$50 gift card to Cabela's. If you are the winner I will call you and mail the gift card to you.

Once again, this survey is really important to me for my school work and to make camp better so I would really appreciate your help!

Thanks

Shaun McKeon- Camp Director

APPENDIX G: Template for Parent Phone Call



Michigan OutofDoors Youth Camp Youth Survey 2014

Follow up Phone Call to Parents

Week of February 23rd-28th



Hello ____ *insert parent name* ____,

My name is Shaun McKeon and I am the camp director at the Michigan OutofDoors Youth Camp. Your child attended camp last summer 2014. While you were registering your camper you signed a consent form giving MUCC and MSU permission to issue a survey to your child during their time at camp and then again 6 months down the road.

Your camper should have received the 6 month follow up survey at the beginning of the month. I am calling to ask for your help in having your child complete the survey. The survey should only take about 15 minutes to complete and will enter your camper in a giveaway for a \$50 gift card to a store of their choice if they are selected.

By completing the survey your child is helping MUCC to improve their camp programming and make adjustments to the curriculum for future summer seasons. It is also a great help to me personally as this research is connected to the completion of my Masters Degree. I would really really appreciate it if you and your child could find the time to complete the form and mail it back to me or you can go online and complete the survey.

The link for the online survey was e-mailed directly to your account and I would be happy to send it again if that makes it easier for you.

Also if you intended to complete the survey but lost it or never received it initially I would be happy to send it out again to your current address. The mailing also includes a postage paid envelope that is addressed to MUCC saving you the hassle of finding a stamp.

Once again, thank you for your time and your assistance in encouraging your child to fill out the survey and return it to me.

I hope to see you back at camp for 2015.

If you have any questions please feel free to give me a call at 517-346-6466.

Thanks and have a good evening

Shaun

APPENDIX H: Follow-Up Survey Materials



Michigan OutofDoors Youth Camp Youth Survey 2014
Camp Survey Youth Post Camp 6 Month Follow Up



MUCC and MSU are working to ensure we have the highest quality programming available to our youth. We would like your help in answering a few questions. Your answers will be private and confidential. You are welcome to stop the survey at any time. By taking part in this survey you understand that participation in this study is strictly voluntary. Please return this survey once completed in the postage paid envelope

Please write your name, MUCC and MSU will keep your name and answers confidential.

Name _____

Please respond to the following questions based on your behavior in the **last 6 months** since you have left camp and fill in each blank with a number.

Behavioral Questions:

4. In the last 6 months, how many times have you been outside in nature by yourself?

5 In the last 6 months, how many times have you been outdoors in nature with one or more members of your family?

6. In the last 6 months, how many times have you gone fishing with someone but not actually fished yourself?

7. In the last 6 months, how many times have you actually fished?

8. If you actually went fishing, who did you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor
By myself Other (please specify) _____

9. If you went fishing in the last 6 months how would you rate your fishing experiences?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating?

10. In the last 6 months, how many times have you gone hunting with someone but not actually hunted yourself?

(If you didn't go hunting please skip to question 16)

11. In the last 6 months, how many times have you actually hunted?

12. If you went hunting, who did you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor
By myself Other (please specify) _____

13. If you went hunting, how many times did you go hunting for each species in the last 6 months?

___ Small game (rabbit, squirrel, grouse, pheasant, woodcock, etc.)

___ Waterfowl ___ Bear ___ Coyote ___ Deer

14. In the last 6 months, how many of each animal did you successfully harvest while hunting?

___Rabbit ___Squirrel ___Grouse ___Pheasant ___Woodcock

___ Duck ___Goose ___Bear ___Coyote ___Deer

15. If you went hunting in the last 6 months how would you rate the experience?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating? _____

16. Did you have a Michigan Fur Harvester (trapping) License in the last 6 months?

Yes

No

17. In the last 6 months, how many times have did you go trapping with someone but not actually trap yourself?

18. In the last 6 months, how many times have you actually trapped?

19. If you went trapping, who did you go with? (Circle all those that apply)

Mom Dad Brother Sister Grandparent Aunt Uncle Cousin Friend Neighbor
By myself Other (please specify) _____

20. If you went trapping in the last 6 months how would you rate the experience?

1= Very bad 2=Bad 3=Not Bad or Good 4=Good 5=Very Good

What is the one most important reason for your rating? _____

21. In the last 6 months, how many times have you participated in archery target shooting?

Firearms target shooting?

Archery

Firearms

22. In the last 6 months, how many times have you wanted to go hunting, fishing, or trapping and weren't able to go?

23. In the last 6 months, how many times did you eat fish or game that you or someone in your family harvested?

24. What is one thing you would like to learn more about in regards to the outdoors?

**Hunting
Canoeing**

**Fishing
Wild Edibles**

**Trapping
Survival Skills**

**Archery
Camping**

**Firearms Target Shooting
Conservation**

25. Did your experiences at camp influence you to participate more in heritage sports (hunting, fishing or trapping)?

Yes

No

Why? _____

Cognitive Questions:

26. Wildlife conservation ensures through wise use that _____?

A. hunting seasons and bag limits never change

B. renewable natural resources can replenish themselves forever

C. no animals are ever harvested

D. natural resources can be used without thinking

E. Don't know

27. Land Stewardship is?

A. Preserving the land intact with no changes

B. Caring for the land and resources to pass on healthy ecosystems to future generations

C. Banning all hunting on a property

D. Converting land to urban areas

E. Don't know

28. All animals need habitat to survive, the four main resources necessary for habitat are space, food, water, and _____?

A. shelter

B. minerals

C. soil

D. predators

E. Don't know

29. The biggest threat to wildlife is?

A. Air pollution

B. Legal hunting

C. Predators

D. Loss of habitat

E. Don't know

30. Which of these is not an ethical principle of Leave No Trace?

A. Dispose of Waste Properly

B. Respect Wildlife

C. Collecting plants to study them in the classroom

D. Leave what you find

E. Don't know

31. Which of the following terms is used to describe all of the living and non-living interacting features of a given area?

A. Habitat

B. Ecosystem

C. Community

D. Biodiversity

E. Don't Know

32. Which of these is not an effective wildlife management strategy?

A. Habitat Improvement

B. Hunting

C. Disease

D. Stocking

E. Don't Know

Emotional Questions: *Please answer these questions in terms of the way you feel*
1=Strongly Disagree 3=Neither Disagree or Agree 5= Strongly Agree

	1 Strongly Disagree	2	3 Neither Disagree or Agree	4	5 Strongly Agree
33. Spending time in nature is important to me	☐	☐	☐	☐	☐
34. Learning about nature is important to	☐	☐	☐	☐	☐

me.					
35. I like learning about nature.	☐	☐	☐	☐	☐
36. Nature makes me happy	☐	☐	☐	☐	☐
37. I like to be outside.	☐	☐	☐	☐	☐

General Camp Questions: <i>Please answer these questions in terms of the way you feel</i> 1=Strongly Disagree 3=Neither Disagree or Agree 5= Strongly Agree					
	1 Strongly Disagree	2	3 Neither Disagree or Agree	4	5 Strongl y Agree
38. I learned new things while I was at camp.	☐	☐	☐	☐	☐
39. I felt safe while I was at camp.	☐	☐	☐	☐	☐
40. The counselors did a good job of teaching and instructing.	☐	☐	☐	☐	☐
41. I made new friends at camp.	☐	☐	☐	☐	☐
42. I felt confident in doing the new skills I learned at camp.	☐	☐	☐	☐	☐
43. My overall experience at camp was positive.	☐	☐	☐	☐	☐

Demographics:

44. Did you purchase a hunting license?

Yes

No

44. Do you have an impairment that seriously limits your participation in outdoor recreation?

Yes No

45. Please circle each type of recreational equipment you own.

Shotgun Rifle Bow/Arrows Fishing Rod Animal traps

Canoe Kayak Sleeping Bag Tent

46. Do you spend time reading about hunting, fishing, or trapping?

Yes No

47. Do you play video games about hunting or fishing?

Yes No

48. Do you have someone in your life who could continue teaching you how to hunt or fish?

Yes No

Thank you for participating in the Survey!

You are awesome!

Please return your completed survey in the enclosed postage paid envelope

Michigan United Conservation Clubs
Camp Director
PO Box 30235
Lansing, MI 48909

APPENDIX I: Survey Frequency Tables

Frequency Tables for Pre-Survey vs. Post Survey Responses

Nature Connectedness Questions:

Table 21: Time Spent in Nature

Time in nature is important to me ¹	Pre-Survey ²	Post Survey ³	Frequency % Pre	Frequency % Post
1- Strongly Disagree	1	6	<1%	4%
2- Disagree	6	3	4%	2%
3- Neither Agree or Disagree	32	16	22%	11%
4- Agree	39	40	27%	28%
5- Strongly Agree	67	80	46%	55%

¹ Question on Survey

² Number of camper responses

³ Total possible responses pre survey 145, total responses on post 145

Table 22: Learning About Nature

Learning about nature is important to me ¹	Pre-Survey ²	Post Survey ³	Frequency % Pre	Frequency % Post
1- Strongly Disagree	3	4	2%	2%
2- Disagree	9	12	6%	8%
3- Neither Agree or Disagree	31	22	21%	15%
4- Agree	45	44	31%	30%
5- Strongly Agree	57	63	39%	43%

¹ Question on Survey

² Number of camper responses

³ Total possible responses pre survey 145, total responses on post 145

Table 23: I Like Learning about Nature

I like learning about nature ¹	Pre-Survey ²	Post Survey ³	Frequency % Pre	Frequency % Post
1- Strongly Disagree	5	6	3%	4%
2- Disagree	12	5	8%	3%
3- Neither Agree or Disagree	26	22	18%	15%
4- Agree	37	37	26%	26%
5- Strongly Agree	65	75	45%	52%

¹ Question on Survey

² Number of camper responses

3 Total possible responses pre survey 145, total responses on post 145

Table 24: Spending Time in Nature Makes Me Happy

Spending time in nature makes me happy ¹	Pre-Survey ²	Post Survey ³	Frequency % Pre	Frequency % Post
1- Strongly Disagree	4	6	2%	4%
2- Disagree	7	5	5%	3%
3- Neither Agree or Disagree	28	17	19%	12%
4- Agree	41	39	28%	27%
5- Strongly Agree	65	78	45%	54%

¹ Question on Survey

² Number of camper responses

³Total possible responses pre survey 145, total responses on post 145

Table 25: I Like to be Outside

I like to be outside ¹	Pre-Survey ²	Post Survey ³	Frequency % Pre	Frequency % Post
1- Strongly Disagree	4	5	2%	3%
2- Disagree	3	4	2%	2%
3- Neither Agree or Disagree	21	14	14%	9%
4- Agree	37	32	2%	22%
5- Strongly Agree	80	90	55%	62%

¹ Question on Survey

² Number of camper responses

³Total possible responses pre survey 145, total responses on post 145

Frequency Table for Post-Survey vs. Follow-up Survey

Camp Satisfaction:

Table 26: Learned New Things at Camp

I learned new things while I was at camp ¹	Post-Survey ²	Follow-up Survey ³	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	1	0	1%	0
2- Disagree	3	4	5%	7%
3- Neither Agree or Disagree	5	3	9%	5%
4- Agree	19	20	35%	36%
5- Strongly Agree	27	28	49%	51%

¹ Question on Survey

² Number of camper responses

³ Total possible responses post-survey 55, total responses on follow-up 55

Table 27: Felt Safe at Camp

I felt safe while I was at camp ¹	Post-Survey ²	Follow-up Survey ³	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	1	1	1%	1%
2- Disagree	1	1	1%	1%
3- Neither Agree or Disagree	3	0	5%	0
4- Agree	12	15	22%	27%
5- Strongly Agree	38	38	69%	69%

¹ Question on Survey

² Number of camper responses

³ Total possible responses post-survey 55, total responses on follow-up 55

Table 28: The Counselors Did a Good Job

The counselors did a good job of teaching and instructing ¹	Post-Survey ²	Follow-up Survey	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	1	1	1%	1%
2- Disagree	2	1	3%	1%
3- Neither Agree or Disagree	1	3	1%	5%
4- Agree	13	8	24%	15%
5- Strongly Agree	38	42	69%	76%

¹ Question on Survey

² Number of camper responses

Table 29: Made New Friends at Camp

I made new friends at camp ¹	Post-Survey ²	Follow-up Survey ³	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	1	2	1%	3%
2- Disagree	1	0	1%	0
3- Neither Agree or Disagree	1	2	1%	3%
4- Agree	13	10	24%	18%
5- Strongly Agree	39	41	71%	75%

¹ Question on Survey² Number of camper responses³Total possible responses post-survey 55, total responses on follow-up 55**Table 30: Confident in New Skills Learned at Camp**

I felt confident in doing new skills I learned at camp ¹	Post-Survey ²	Follow-up Survey ³	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	2	0	3%	0
2- Disagree	1	2	1%	3%
3- Neither Agree or Disagree	4	5	7%	9%
4- Agree	14	12	25%	22%
5- Strongly Agree	34	36	62%	65%

¹ Question on Survey² Number of camper responses³Total possible responses post-survey 55, total responses on follow-up 55**Table 31: Overall Positive Camp Experience**

My overall experience at camp was positive ¹	Post-Survey ²	Follow-up Survey ³	Frequency % Post	Frequency % Follow-up
1- Strongly Disagree	1	1	1%	1%
2- Disagree	1	3	1%	5%
3- Neither Agree or Disagree	2	3	3%	5%
4- Agree	14	10	25%	18%
5- Strongly Agree	37	38	67%	69%

¹ Question on Survey² Number of camper responses³Total possible responses post-survey 55, total responses on follow-up 55

APPENDIX J: MUCC Camp Curriculum

Hunting Heritage Camp

This one week program offers campers an opportunity to develop as ethical and knowledgeable big Game hunters. Throughout the week, campers will refine their game identification skills, while learning valuable hunting techniques and strategies. In addition to earning their hunter safety card, campers will be taught the importance of equipment selection and spend time identifying their role as stewards of the land.

Objectives:

Campers will at the end of their one week camp experience be able to:

- Identify mechanical features and proper use of a firearm for the purpose of hunting
- Gain hands on experience with Archery (compound/Recurve)
- Gain hands on experience with .22, 20 g shotgun and muzzleloader
- Have the opportunity to work with dogs for the purpose of hunting
- Utilize basic map and compass skills for the purpose of field navigation
- Practice wilderness survival including but not limited to shelter building, water acquisition, fire starting, and Wild Edibles

General Outline of Camp:

Day 1- Team Building & Getting Settled at Camp-Sunday

Sunday Evening:

6:45- All campers will line up at the dining hall for intro to camp and dinner

Manners at meals, clean up, Infirmary, Lost/Found, Cabin Inspections, Safety, Fire Drills

7:30-Counselors take your campers on a tour of camp grounds, introduce one another and engage in team building The focus of team building is to allow campers to develop their communication and problem resolution skills: Suggested team building activities appropriate for this group* you may use any others

- Team on a T-shirt
- Magic Stick
- “Just One Word”
- Blind Bear
- Trust web

8:00- All report to main camp fire circle for staff introduction

9:00- Cabin night. Counselors it is your responsibility to plan a cabin activity for this night such as a scavenger hunt.

9:30- When cabin activities finish Campers are directed to the main fire circle for the evening campfire

Day 2-Small Bore, Archery- Monday

The focus of spending a day at the range is to give campers the opportunity to safely handle and shoot both bow small bore firearm. Campers will begin at the range instructor and talking about safety and the parts of a firearm before they will then have the opportunity to shoot .22 caliber rifles.

Then will head over in the afternoon to focus on archery history and safety. Once campers have mastered 11 steps to archery success from the NAPS program they will then head out to the range to shoot.

Firearm

- Parts of a firearm
- Ammunition
- How firearm works
- Difference between a shotgun and rifle
- Safety and range instructions
- Range time

Bow

- Parts of a bow
- Parts of an arrow
- Eye dominance
- 11 steps to archery success
- Safety and range instructions
- Range time

Guest Speaker: Genesee County Conservation Officer (being an ethical hunter, hunter responsibility)

Day 3-Shotgun, Muzzleloader, Dogs-Tuesday

The morning for this group will be spent working with the Michigan Coon Hunters to learn about dog training and Coon Hunting. This unique hunting experience is fun for campers and they will gain hands on experience at training coon dogs. After lunch campers will be heading out to spend the afternoon at Chelsea Rod & Gun Club where they will learn more about shot gunning and muzzle loading. Campers will have the opportunity to shoot both as well as practice their draw on clay birds before returning to camp.

Guest Speaker: Michigan Coon Hunters Association

Day 4-Animal Identification, Tracking -Thursday

Animal identification is imperative to developing your skills as an ethical hunter. Knowing key characteristics of animals will assist young hunters in differentiating between similar species and between sexes of the same species. Mistakes in identification can mean an illegal harvest of game or non-game animals resulting in serious penalty. Campers will practice their animal

identification by examining key characteristics of large Mammals. Campers will also spend time looking at habitat management and its impact on populations.

Large Mammal Identification

- Horned animals
- Antlered animals
- Bears
- Large members of wild cat or wild dog families

Tracking

- Tracking strategy
- Using animal evidence as a means to track large game
 - Antler sheds
 - Cud
 - Scat
- Identifying large game tracks
 - Bear, coyote, bobcat, elk, deer,

Wildlife Management

- Carrying Capacity/Limiting Factors
 - Predators, Disease, Pollution, Old Age, Hunting
- Wildlife Management Practices
 - Habitat Improvement
 - Prevention of Disease
 - Hunting
 - Stocking

Guest Speaker: Michigan SCI mobile trailer

Day 5-Survival, Orienteering- Wednesday

Wilderness Survival:

- Shelter Building (Also can be used as Natural Blinds)
 - Lean to
 - Natural Materials
 - Site selection
- Wild Edibles
 - We do not encourage campers to EAT ANYTHING found in nature WHILE AT CAMP. However, it is ok to teach them some easily identified examples: Wintergreen, Wild Ginger, Wild Onion, Cat Tail Root, Walnuts, Clams, Fish, Sumac, Wild Raspberries, Wild Carrot, Wild Grape, & May Apple
- Water acquisition

- Dew gathering
- Building a water funnel
- Boiling and preparing water and why
- Fire building (bow and drill and flint)
 - Campers will often become discouraged with bow and drill...we say if it gets warm you are doing well ...if it smokes you have succeeded... if you get fire it is a miracle!

It is important that campers gain usable skills pertaining to Orienteering. For the context of this camp, campers will begin by first understanding map and compass then moving on to GPS navigation in the afternoon. Often campers do not see the need for both map/compass and GPS. Remind them that when they rely solely on GPS.....if the batteries die....they are STILL lost in the woods reinforcing the need for map/compass knowledge.

- Reading Topographic maps
- Setting a compass
- Charting and Plotting Progress
- Using a GPS for the purpose of navigation
 - o Setting/Tracking waypoints

Day 6-Wrap up and Departure-Friday

7:30am- Breakfast

8:00am-Morning Wrap Up with Group

11:30am- Lunch

12:00 All Camp Clean Up/ Camper Pack & Carry Down

1:00pm- Closing Ceremony (Waste-Away, Counselor Challenge, Clean Cabin Award)

1:30pm-2:30 pm-Campers Departure

3:00 Staff Meeting

Riflery:

The focus of spending a day at the range is to give campers the opportunity to safely handle and shoot both bow small bore firearm. Campers will begin in the morning focusing on archery history and safety. Once campers have mastered 11 steps to archery success from the NAPS program they will then head out to the range to shoot. The afternoon will be spent at the rifle range talking about safety and the parts of a firearm before they will then have the opportunity to shoot .22 caliber rifles.

A firearm by definition is a mechanical device that uses pressure from a burning powder to force a projectile through and out of a metal tube. To appreciate the importance of firearm safety campers must first understand how a firearm works. This includes the parts of a firearm, type of ammunition they will be using and of course safety. Counselors please DO NOT at any time

identify a fire arm as a weapon Both counselors and campers alike should identify the .22's as firearms or guns. Campers will be using single shot bolt action .22 caliber guns.

Firearm

- Parts of a firearm
- Ammunition
- How firearm works
- Difference between a shotgun and rifle
- Safety and range instructions
- Range time

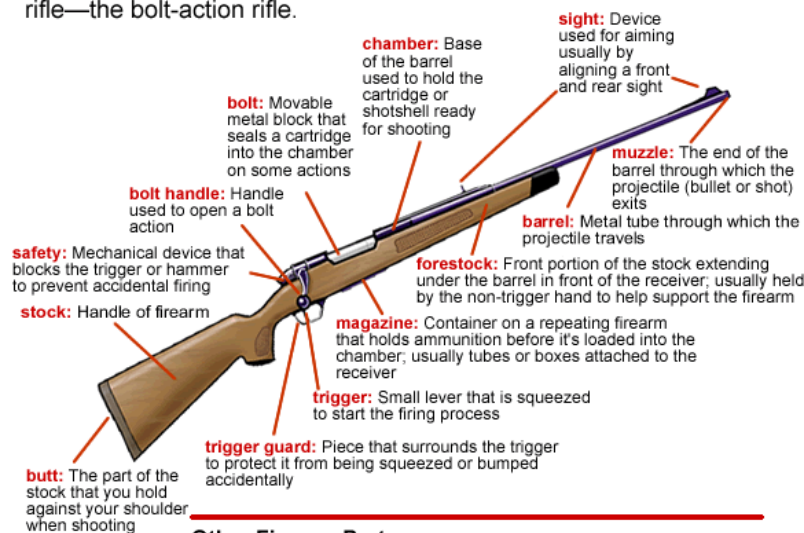
Parts of a firearm:

Although firearms have changed a great deal since they were first invented, the terms used for their parts have changed very little. All modern firearms have three basic groups of parts.

- 1) Action: the action is the heart of the firearm—the moving parts that load fire and eject the shells or cartridges. Several types of actions are used in modern firearms. As stated above you will be using a “bolt-action”
- 2) Stock: The stock serves as the handle of the firearm. It can be composed of one or two pieces and is usually made of wood or synthetic material.
- 3) Barrel: The barrel is the metal tube that the projectile travels through.

Parts of a Bolt-Action Rifle

Rifles, shotguns, and handguns have many similar parts. Shown here are the parts of a commonly used rifle—the bolt-action rifle.



Other Firearm Parts

bore:
Inside of the firearm barrel through which the projectile travels when fired
breech:
Rear end of the barrel
firing pin:
A pin that strikes the primer of the cartridge, causing ignition
receiver:
Metal housing for the working parts of the action

Figure 5: Parts of a Firearm

Ammunition:

Modern ammunition varies depending on the type of firearm. Rifles and handguns use a cartridge containing a single projectile also known as a bullet. Shotguns use a shell containing either a single slug or a large number of small hot pellets. The basic components of ammunition are the case, primer, powder and projectile. Shotgun shells have an additional component called “wad”

- 1) Case: the container that holds all the other ammunition components together. Usually made of brass, steel, copper, paper or plastic.
- 2) Primer: An explosive chemical compound that ignites the gunpowder when struck by a firing pin. Primer may be placed either in the rim of the case or in the center.
- 3) Gunpowder: a chemical mixture that burns rapidly and converts to an expanding gas when ignited. Modern smokeless powder will burn slowly when ignited in the open. Black powder is less stable and can be explosive when impacted or ignited.
- 4) Projectile: The object expelled from the barrel. A bullet is a projectile, usually containing lead, fired through a rifle or handgun barrel. A slug is a solid projectile, usually of lead, fired through a shotgun barrel. Shot is a group of lead, steel or alloy pellets fired through a shotgun barrel.
- 5) Wad: A seal and or shot container made of paper or plastic separating the powder from the slug or shot in a shotshell. The wad prevents gas from escaping through the shot that holds the shot together as it passes through the barrel.

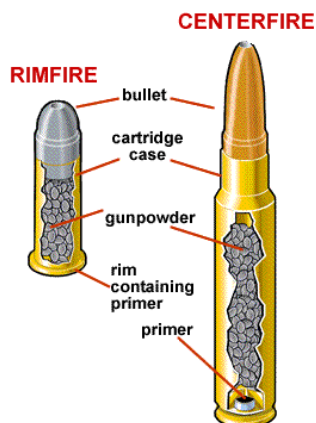


Figure 6: Parts of a Cartridge

A rifle's caliber:

Caliber is used to describe the size of the rifle or handgun bore and the size of cartridges designed for different bores. Caliber usually is measured as the diameter of the bore from land to

opposite land and expressed in hundredths of an inch, thousandths of an inch or millimeters. For example a .270-caliber rifle bore measures 270/1000th of an inch.

SAFETY! SAFETY! SAFETY! SAFETY! SAFETY!

Safety is our NUMBER ONE priority when out on the range. The range officer will go over safety commands and no fire. It is imperative that you drill campers on these firearm safety rules.

- 1) Treat EVERY firearm as if it is loaded ALL THE TIME
- 2) Keep finger OUTSIDE the trigger guard with SAFETY ON until ready to fire
- 3) ALWAYS keep your muzzle pointed in a safe direction down range
- 4) ALWAYS know your target and WHAT IS BEYOND (house, dog, people?)
- 5) Follow all instructions given by range officer immediately
- 6) NO horseplay or violations will be tolerated at ANYTIME.
- 7) If you SEE SOMETHING- SAY SOMETHING. If campers see anything that could pose a threat to any camper or property they are responsible to say something to an adult immediately

Large Game Identification

Animal identification is imperative to developing your skills as an ethical hunter. Knowing key characteristics of animals will assist young hunters in differentiating between similar species and between sexes of the same species. Mistakes in identification can mean an illegal harvest of game or non-game animals resulting in serious penalty. Campers will practice their animal identification by examining key characteristics of large Mammals. Campers will also spend time looking at habitat management and its impact on populations.

Large Mammal Identification

- Horned animals
- Antlered animals
- Bears
- Large members of wild cat or wild dog families

Tracking

- Tracking strategy
- Using animal evidence as a means to track large game
 - o Antler sheds
 - o Cud
 - o Scat
- Identifying large game tracks
 - o Bear, coyote, bobcat, elk, deer

Wildlife Management Practices

- **Monitoring Wildlife Populations:** Wildlife managers continuously monitor the birth rate and death rate of various species and the condition of their habitat. This provides the data needed to set hunting regulations and determine if other wildlife management practices are needed
- **Habitat Improvement:** As succession occurs, the change in habitat affects the type and number of wildlife the habitat can support. Wildlife managers may cut down or burn forested areas to promote new growth and slow down the process of succession. This practice enables them to increase the production of certain wildlife species.
- **Hunting Regulations:** Hunting regulations protect habitat and preserves animal populations. Regulations include setting daily and seasonal time limits, bag limits and legal methods for taking wildlife
- **Hunting:** Hunting is an effective wildlife management tool. Hunting practices help managers keep animal populations in balance with their habitat
- **Predator Control:** In rare instances, predators must be reduced to enable some wildlife populations to establish stable populations, particularly threatened or endangered species
- **Artificial stocking:** Restocking of game animals has been successful in many parts of the nation. Trapping animals in areas where they are abundant and releasing them in other areas of stable habitat can work.
- **Controlling or Preventing Disease and its spread:** Disease can have a devastating effect on wildlife. Avian cholera, for example poses a serious risk to ducks and geese

Orienteering:

There are many ways to teach campers orienteering. There is an orienteering module in the storage room that will help a great deal in setting up a course for campers to practice their newly learned skills. Before you head out to walk through the course with campers there are a few things you can do in a large group that will help them tremendously.

****Orienteering Lessons adapted from the United States Orienteering Federation

Reading a Topographic Map

Hand out orienteering maps to students. Explain how a topographic map shows the shape of the terrain and detailed features that are not commonly found on other maps. If possible, have different types of topo maps (USGS, military, etc.) for comparison.

- **Scale** – Have students find the 1:??,000 scale on the orienteering map. Explain that scale shows the size relationship of map to earth. Point out the bar scale and that it is used in conjunction with the compass' ruler to measure distance to be traveled.(CM p.50)
- **Contour interval** – Have students find the contour interval on the orienteering map. Explain that the contour interval is the elevation change between contour lines. If students are not familiar with contour lines, explain how elevation lines show the steepness and shape of the terrain. Visual models or drawings are helpful to illustrate the concepts or illustrate on the chalkboard. (CM p.50)
- **Legend** – Point out how the orienteering map legend shows which symbols are used on the map. Have student find several features on the map and identify them using the map legend. (CM p.49)

- **Magnetic north lines** – Point out the parallel lines with small arrows pointing toward magnetic North on the map. These lines are spaced on the map every 500 meters on a 1:15,000 map.
- **Colors** – Note and explain the colors on the orienteering map: (CM p.49)
 - o Blue – water features
 - o Black – rock features and man-made features
 - o White – normal, open woods
 - o Green – thick vegetation, shades & patterns denote type
 - o Yellow – non-wooded land, shades & patterns denote type
 - o Brown – natural non-rock features and contour lines

Wilderness Survival:

Objectives:

Campers by the end of their camp experience will:

- Develop a basic knowledge of the seven basic needs to survive
- Be able to identify types of shelter and have a working knowledge in constructing one with their team
- Identify various wild edibles
- Practice their fire making skills using bow and drill.
- Identify several animals based on their track and scat

Materials

- Bow and drill kits
- Survival Scenario Cards
- Materials from the Wild Edibles lesson
- Tracking materials/field guides/plaster molds or Tracking Module

Introduction:

What is the purpose of learning to survive outside? Because we humans have a tendency to put ourselves into potentially risky (survival) situations and even though we're not all campers it is still a good skill to learn. So what is a survival situation? It is a time when you are forced to rely on your own resources to live. It is usually a sudden and unplanned situation where there is little or no outside help and it could happen anywhere. There are usually four reasons why we get into survival situations.

1. Lack of skills – lost and don't know how to use a compass
2. Weather – can't control
3. Accidents – illness or injury
4. Under prepared

*Campers will need to identify the seven basic needs of survival before they move on to shelter building/wild edibles /fire etc...

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