THE DEVELOPMENT OF A BEST-PRACTICES OUTDOOR SKILLS CURRICULUM FOR UWSP-TREEHAVEN

A Project Report

Submitted in Partial Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE

IN

NATURAL RESOURCES

College of Natural Resources

UNIVERSITY OF WISCONSIN-STEVENS POINT

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May 2013

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ABSTRACT

This project focuses on developing a Best-Practices Outdoor Skills Curriculum for UWSP-Treehaven, located in Tomahawk, WI. Treehaven has been offering outdoor skills programs to people of all ages for several years, but they do not have a documented curriculum guide. Non-structured interviews were conducted with Treehaven's executive director and program staff to determine which outdoor skills programs were desired at Treehaven. Semi-structured interviews were conducted with ten Outdoor Skill (OS), Outdoor Education (OE), and Environmental Education (EE) centers, to discover which OS programs are currently being taught throughout the country and in what ways they are being implemented. Over twenty OS programs were found to be taught throughout the nation. Twelve themes emerged from conducting these interviews. The twelve themes discuss the importance of addressing stakeholders' needs, correlating academic standards into OS programs, different factors that contribute to successful OS programs, and proper OS instructor trainings. These themes provide the basis for developing the Best-Practices Outdoor Skills Curriculum for Treehaven. Research results also guided the development of lesson plans for five of the most highly-requested OS programs, as identified by the ten OS, OE, and EE centers. In addition, recommendations regarding how to properly train OS program instructors are included.

ACKNOWLEDGEMENTS

My graduate school experience has been an amazing roller coaster ride. Depending on the day, I would either feel a sense of accomplishment, pride, happiness, excitement, fear, sorrow, nervousness, frustration, or fatigue. However, looking back at it, I wouldn't change a thing. I gained numerous wonderful personal and professional experiences at Conserve School and Treehaven. My graduate assistantship position has prepared me well for a future in environmental education. I want to thank the following people, because without them, I wouldn't have been able to succeed.

To my family; Nancy, Orv, Kevin, Michelle, and Lia, thanks for sharing your wisdom and emotional support throughout my journey. Whenever grad school was getting the better of me, you always calmed me down and made me feel like myself again. Michelle, thanks for helping me edit so many assignments throughout my journey. I can't begin to express to you how grateful I am.

To the 2011-2013 Graduate Fellow Cohort at Conserve School, thanks for making graduate school so much fun for me. Graduate school at Conserve School wasn't my journey, it was *our* journey. I feel like I've made fourteen life-long friends; thanks for all of the great memories.

Finally, I'd like to thank my graduate advisor Corky McReynolds, my graduate fellowship coordinator Fran McReynolds, Phil Delong, and John Heusinkveld. Your wealth of knowledge, professional experiences, and positive attitudes were both amazing and inspiring to me. I will take your teachings with me wherever I go in my professional career. You have helped me grow in so many ways, both personally and professionally.

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What parameters are needed at an Environmental Learning Center to develop an outdoor skills curriculum that is beneficial for people of all ages?

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2. To investigate how selected outdoor skills centers incorporate environmental education into outdoor skills programs.
3. To discover if outdoor skills centers align their outdoor skills programs and curricula with the *NAAEE Nonformal EE Programs: Guidelines to Excellence,* state academic standards, and/or national academic standards.
4. To investigate what trainings and certifications outdoor skills centers require their staff to have prior to teaching outdoor skills programs.
5. To develop an outdoor skills curriculum for Treehaven that has five outdoor skills program lesson plans included in it.

III. Limitations/Delimitations:

1. Treehaven's funds, if we need to purchase extra materials for programs. Also, Treehaven's outdoor skills-related equipment. How much do they have? How much do we need?

2. Limit the target audience(s) for the outdoor skills curriculum to K-12 students.
3. Partner groups in the area that Treehaven could borrow materials from for their outdoor skills-related programs.
4. Treehaven's property. If there isn't required structures/habitat (e.g. lakes or rivers) then we may not be able to provide programs on certain skills.

IV. Background

Treehaven is an extension campus of the University of Wisconsin-Stevens Point (UWSP), College of Natural Resources. It is located ten miles east of Tomahawk, WI. The majority of Treehaven's property was deeded to UWSP in 1979 from Dorothy Vallier and her second husband Jacque Vallier (Burns, 2009). The Vallier's donated the land to UWSP in the hopes that the land would be protected and used to promote environmental stewardship and environmental education for many years to come. The original parcel of land was about 850 acres in size; however, with land purchases and donations, Treehaven has increased their property size to 1,400 acres.

Over the years, Treehaven's landscape has been through some significant changes. In the pre-logging years, Treehaven was dominated by old growth red and white pine forests (Burns, 2009). During the logging years, 1840-1920, Treehaven was clear cut twice (Burns, 2009). The slash from these cuts was left on the ground as the loggers moved through the area searching for more trees to harvest. In 1934, a fire swept through Treehaven burning all of the slash and all of the young vegetation left by the loggers. This fire set the succession of the forest back to its beginning. Now Treehaven's property is primarily dominated by aspen and birch stands; with small pockets of red and white pine stands, hemlock stands, spruce and tamarack stands (Burns,

2009). This forest structure is extremely different from the historical records. However, Treehaven initiated a Land Management Plan in 2009 to start managing the forest and promote red and white pine forests. Selective tree thinnings, clear cuts, tree plantings, and controlled prescribed burns are all planned management practices that will be used in the present and future years to promote the growth of red and white pines.

Treehaven's landscape was influenced by the glaciers thousands of years ago (Burns, 2009). There are multiple rolling hills and numerous large boulders scattered throughout the land, which are key characteristics of glacial activity in an area. The lowlands of the property are primarily boggy conditions with wetland vegetation and soils comprised of silt and clay particles. Upland areas are dominated by aspen stands, white birch stands, and red pine stands. The soil is well-drained and made up of sand and gravel. Big Pine Creek and Pickerel Creek flow through the property. Both streams are classified as trout streams and in the spring time trout fry are often caught in the streams during the routine aquatic habitat sampling surveys (Burns, 2009). There is a twelve-acre pond in the northeast section of the property that is home to several waterfowl and wading birds during the spring and summer months. Sandhill cranes, American bitterns, great blue herons, mallard ducks, wood ducks, and red-hooded mergansers are among the list of birds spotted in and around the pond.

All of Treehaven's buildings rest on a 40-acre area of land in the northeast section of the property. The Vallier Classroom Center serves as the main office and conference area for the site. Treehaven has two living centers that can accommodate fifty guests each. They also have two cottages, the White Pine Lodge and the Fern Young Cottage. White Pine can accommodate eight guests, and Fern Young can accommodate ten guests.

Fern Young Cottage is also home to one or two residential UWSP graduate students, depending on the semester. There is another living area that has been selected to be the house for the residential program coordinator. Treehaven also has one maintenance building and two storage garages in the main complex area.

Treehaven has roughly seventeen miles of hiking trails and logging roads throughout the property. Each trail and road is open to the public to use year-round. In the winter time, the trails on the eastern part of the property are designated for cross-country ski use only. Patrons wearing snow shoes are encouraged to snow shoe in the central and western parts of the property. The general public is prohibited to use ATV and snowmobiles anywhere on the property.

Treehaven has six full-time staff members that operate the site: Executive Director Corky McReynolds, Assistant Director and Program Coordinator John Heusinkveld, Forester Kevin Burns, Office Manager Audrey Gaedtke, Head Chef Ken Kulhzek, and Ray Emerson Maintenance. Treehaven also has part-time kitchen staff, a financial consultant, and a marketing/gift shop manager, along with two full-time graduate students from UWSP during the spring and fall semesters.

During the summer months, Treehaven serves as a field station for UWSP's College of Natural Resources. Treehaven hosts two six-week academic summer sessions that undergraduate students attend. Most undergraduate students pursuing a degree in UWSP's College of Natural Resources (CNR) must attend the Treehaven summer session as a requirement to graduate. During the fall, winter, and spring months, Treehaven welcomes K-12 school groups and adult conference groups to their facility for

environmental education and land stewardship opportunities. Schools throughout Wisconsin and Illinois, mostly from urban settings, visit Treehaven annually to learn about the natural world, hike or ski around the property, and to feel connected to nature. Adult conference groups that attend Treehaven include, but are not limited to, Wisconsin's Department of Natural Resources, Becoming an Outdoors Woman (BOW) programs, Wisconsin Association for Environmental Education, and Road Scholar programs. Throughout the spring and fall semesters at UWSP, one-credit weekend long courses are offered at Treehaven as well. Weekend classes teaching leadership skills, Leave No Trace principles, and health and wellness topics are among those offered throughout the school year to UWSP undergraduate and graduate students at Treehaven.

V. Importance of Study

People that participate in outdoor skills programs benefit greatly from the skills they learn and the interactions they have during the programs. Treehaven's target audience for this curriculum guide is primarily K-12 students. Studies have shown that outdoor skills build self-confidence, increase physical fitness, reduce stress, lead to positive environmental stewardship actions, and develop leadership skills in children and adolescents (Wagstaff & Attarian, 2009). Since outdoor skills have such a positive effect on children and adolescents, Treehaven wants to provide more opportunities for citizens in this demographic to participate in outdoor skills programs. It has been found that people need to learn outdoor skills early in life because they are less likely to learn them as they get older. People that don't learn these skills are not likely to be interested in participating in outdoor skills activities. People that do not participate in these activities will not receive any of the benefits they provide.

Treehaven has been offering some outdoor skills programs in the past to school groups and adult groups; however, they do not have an outdoor skills curriculum developed. Treehaven has very few notes or lesson plans written out regarding outdoor skills programs. They are mostly conducted by the assistant director of Treehaven, John Heusinkveld. John conducts these programs and relies on his experience and memory to offer great programming year-after-year. This project will provide Treehaven with a reliable document that education staff members can reference before teaching a class. This will help new staff members and experienced staff members feel more comfortable with teaching an outdoor skills program that they may have never taught before. By having more comfortable educators teaching the outdoor skills programs, the students will have a greater chance of having success learning a new skill and having an overall positive experience participating in the program.

By offering more opportunities for groups to participate in outdoor skills, Treehaven can build partnerships with organizations throughout Wisconsin. Treehaven will be able to market their outdoor skills programs to school groups, 4-H groups, the YMCA, fishing clubs, hunting clubs, and many others. Increasing the size of Treehaven's target audience will ensure the organization's sustainability over time. This project is also important to Treehaven financially. Since Treehaven has limited fiscal resources, they don't have any funds available to hire a company to develop an outdoor skills curriculum for them. By having a graduate student at UWSP develop a best-practices outdoor skills curriculum for them, Treehaven doesn't have to designate any funds for the project.

VI. Assumptions:

1. Environmental Education and Outdoor Education centers throughout Wisconsin require some trainings for their staff to complete before teaching outdoor skills programming.
2. Each Environmental Education facility offers multiple outdoor skills programs to the public.
3. Outdoor Education and Environmental Education Centers throughout the country will be willing to share their information with the researcher for this project.

VII. Abbreviations:

1. ACA-American Canoe Association
2. EE-Environmental Education
3. ELC-Environmental Learning Center
4. NAAEE-North American Association for Environmental Education
5. NOLS-National Outdoor Leadership School
6. OE-Outdoor Education
7. OS-Outdoor Skills
8. UWSP-University of Wisconsin-Stevens Point

VIII. Definitions:

1. Adventure Education-education that is conducted in a wilderness-like setting or through nature and physical skills development to promote interpersonal growth or enhance physical skills in outdoor pursuits (Gilbertson, Bates, McLaughlin, & Ewert, 2006).
2. Environmental Education-a learning process that increases peoples' knowledge and awareness about the environment and associated challenges; develops the necessary

skills and expertise to address these challenges, including critical thinking skills; and fosters attitudes, motivation, and commitment to make informed decisions and take responsible actions (Alberta Council for Environmental Education, 2012)

3. Outdoor Education-education in and for the outdoors; it includes education about the relationships within the natural environment and between the environment and human societies (Bunting, 2006).
4. Outdoor Skill-a skill that takes place in the out-of-doors that is directly connected to the land, its wildlife, or its resources in a way that promotes adventure and interaction upon the landscape.

CHAPTER TWO: LITERATURE REVIEW

To gain a better understanding of the significance of this project, this chapter provides literature that supports why an outdoor skills curriculum is needed at Treehaven. Topics discussed include: 1) Defining an outdoor skill; 2) How learning outdoor skills benefits people; 3) Defining curriculum and relating it to outdoor skills programming; 4) Aligning outdoor skills curricula with the *North American Association for Environmental Educators (NAAEE) Nonformal Environmental Education: Guidelines for Excellence*; 5) The trainings and certifications that are required for outdoor skills educators.

I. Defining an outdoor skill and the benefits gained by participants.

Outdoor education is taught throughout the entire world. Each outdoor education center and environmental education center has their own unique twist on what they teach and how they teach it. Organizations typically offer outdoor skills programs that are aligned with their mission and programs that can be successfully taught given the organization's property and resources. For this reason, it's a good idea to define what outdoor education is and what qualifies as an outdoor skill.

Admittedly, the term outdoor education has many definitions and each environmental and outdoor organization will define it differently to best match their mission statement and organizational needs. However, for this study, outdoor education will be defined as such: Outdoor education is education in and for the outdoors; it includes education about the relationships within the natural environment and between the environment and human societies (Bunting, 2006). Studies conducted on adolescents have shown that outdoor education: 1) enhanced psychological well-being, 2) had

positive impacts on leadership competencies, 3) enhanced decision-making skills and general problem-solving skills, and 4) increased personality dimensions such as assertiveness, emotional stability, achievement motivation, and maturity levels (McLeod & Allen-Craig, 2007).

Outdoor education is closely related to adventure education and the two terms combined paint a good picture of what outdoor skills are. Adventure education is education that is conducted in a wilderness-like setting or through nature and physical skills development to promote interpersonal growth or enhance physical skills in outdoor pursuits (Gilbertson, Bates, McLaughlin, & Ewert, 2006). For the purpose of this study, the definitions of outdoor education and adventure education will be joined together to create a new definition for outdoor skills. An outdoor skill is a skill that takes place in the out-of-doors that is directly connected to the land, its wildlife, or its resources in a way that promotes adventure and interaction upon the landscape. Using this definition, the term outdoor skill encompasses a wide variety of skills. Outdoor skills include, but are not limited to the following: hunting, shooting sports, archery, canoeing, kayaking, sailing, fishing, fly fishing, animal trapping, animal tracking, birding, compass and map skills, GPS use and geocaching, snow shoeing, cross country skiing, outdoor survival skills, identification of plants and wild edibles, backpacking, camping, outdoor cooking, biking, horseback riding, gardening, and rock climbing.

Learning these new skills have many benefits to people of all ages. Among youth and adolescents, outdoor skills have been proven to help sharpen their interpersonal and intrapersonal skills. From an intrapersonal perspective, learning outdoor skills enhances self-confidence, self-reliance, self-efficacy, individual wellness, and a host of other

personal attributes. They also enhance interpersonal skills such as teamwork, communication, and leadership skills (Wagstaff & Attarian, 2009). Since people benefit greatly from participating in outdoor skills programs, ELC's, OE Centers, and Summer Camps throughout the country have been incorporating outdoor skills into their curricula in recent years. Because outdoor skills programming aligns well with Treehaven's mission statement, *Treehaven, a campus of UWSP-College of Natural Resources is the Wisconsin center for integrating natural resources education, management, research and recreation* (UWSP Treehaven, 2013), it is recommended that UWSP-Treehaven develops an outdoor skills curriculum.

II. Defining the term *curriculum* and relating it to outdoor skills.

The term *curriculum* is ambiguous at best. There are curricula for every subject in the academic world and many environmental education and outdoor skills organizations have their own unique curricula. Many people ask for a straight forward definition for the term *curriculum*. However, this may be impossible to do because the word *curriculum* might, in fact, be the 'sum total' of everything (Gibbons, 2011).

Webster's New World College Dictionary defines *curriculum* as "a fixed series of studies" or "all of the courses offered, collectively, in a school, college, etc., or in a particular subject." In terms of an outdoor skills curriculum, a fixed series of studies could be multiple lesson plans offered on the same outdoor skill. For example, an outdoor skills center could have a curriculum guide on canoeing. They could offer multiple classes on multiple days, and program participants' knowledge and skills on canoeing would build during each lesson. However, another outdoor skills center could

have a curriculum guide that includes all of the courses offered, collectively. If this is the case then the curriculum guide could include multiple outdoor skills in the same curriculum. For example, an outdoor skills center could teach canoeing, archery, mountain biking, snow shoeing, and cross country skiing, and compile all of their lesson plans into one outdoor skills curriculum. For the purpose of this study, the best-practices outdoor skills curriculum that will be created is going to include all of the outdoor skills courses, programs, and lesson plans that Treehaven will offer to its guests.

It has been found that an effective curriculum is one that reflects a myriad of alternatives rather than prescribing just one (Mee, 2010). To accomplish this, the outdoor skills curriculum that will be created is going to include multiple activities and strategies to adapt each outdoor skills lesson plan to meet the needs of several target audiences. There will be alternative activities included in the curriculum guide that lets the instructor decide which activities are best suited to their audiences' knowledge and skill level.

III. The importance of aligning outdoor skills curricula with the *North American Association for Environmental Educators (NAAEE) Nonformal Environmental Education: Guidelines for Excellence*.

Outdoor skills, outdoor education, and environmental education are all interrelated due to the fact that they all take place in the out-of-doors and they aim to better program participants physically and mentally. Since outdoor education is so intricately tied into the learning process in the natural world, it is imperative that outdoor education addresses sustainability issues and environmental education in their programs (Hill, 2012). Environmental education can be difficult for an instructor to address if they

are not familiar with the natural world. The more knowledge somebody has regarding the environment, the more likely they are to talk about it during an outdoor skills program. A thorough overview of the *NAAEE Nonformal Environmental Education: Guidelines for Excellence* was conducted to see if aligning an outdoor skills curriculum with their standards would be appropriate. I also wanted to find out if these standards could prepare an outdoor skills instructor to teach environmental education.

By taking a closer look at the *NAAEE Nonformal Environmental Education: Guidelines for Excellence*, I have found that it is not a list of academic standards for environmental education, but instead a list of recommendations on how to make EE programs successful. The document describes six key characteristics that should be addressed while developing, implementing, and evaluating EE programs and curricula. The six key characteristics are: 1) Needs Assessment, 2) Organizational Needs and Capacities, 3) Program Scope and Structure, 4) Program Delivery Resources, 5) Program Quality and Appropriateness, and 6) Evaluation. Because EE programs, like outdoor skills programs OS program, can cover a wide spectrum of topics and the timeframe for each program can vary minutes, to hours, to days, it is likely that specific indicators of one or more of the key characteristics may not apply to a particular program (North American Association for Environmental Education, 2009).

Even though this document doesn't contain academic standards that could be used to align OS programs with EE standards, the key characteristics outlined by the document can still be incorporated into the development of an outdoor skills curriculum. An outdoor skills curriculum writer should consider all of the key characteristics presented in this document when developing program lesson plans and curricula. Below are

suggested ways that the six key characteristics can be incorporated into the development of an outdoor skills curriculum.

1. Needs Assessment: Before an OS center decides to develop a program, they should assess the needs of their target audience. Is there a need for this particular program in this area? Does the intended audience have an interest in this particular outdoor skill? Outdoor skills centers should also inventory their program materials before developing an outdoor skills program. Does the OS center have the equipment needed to successfully teach a particular program?
2. Organizational Needs and Capacities: OS centers should ask themselves before developing a new program, "does this program align with our organization's mission statement, goals, and objectives?" If the answer is no, then the program shouldn't be developed.
3. Program Scope and Structure: When developing OS programs, a list of *SMART Objectives* should be identified. *SMART Objectives* are objectives that are Specific, Measurable, Achievable, Relevant, and has a Timeframe stated. Program goals should be aligned with state or federal academic standards. The format of the program should also be taken into consideration when developing the program. How much time is needed to successfully teach a specific outdoor skill to an audience? Do we need a two hour block of time, or an entire weekend? Program lesson plans will vary in length and depth depending on the answer to this question.
4. Program Delivery Resources: An OS center should answer the following questions before offering an OS program to the public: What trainings and knowledge do OS staff members need to have prior to teaching specific OS programs? How can we

teach these hard and soft skills to our staff members? Do we have a safe area on our property to conduct these outdoor skills programs in a safe and friendly environment? What procedures do we have in place in case of an emergency?

5. Program Quality and Appropriateness: Any OS programs or curricula that are developed should be field tested by a small sample of the target audience. Materials should be reviewed by people outside the agency to determine if the materials are appropriate to the target audience, and if academic standards are being addressed. The sequence of activities involved in each program should be evaluated and determined to be appropriate to enhancing the knowledge of the target audience.
6. Evaluation: When developing OS programs and curricula, summative and formative evaluation techniques should be included to evaluate the overall program effectiveness. OS program evaluation results should be shared with OS center staff and audience members (i.e. school districts). The evaluation results should also be used by the OS center to improve on their programs and make them stronger in the future.

It is important to align outdoor skills programs and curricula with academic standards. Susan James, who is the operations coordinator at the Mohican School in the Out-of-Doors, admits that if their outdoor skills programs are not aligned with state academic standards, then school groups won't visit their center (James, Coleman, & James, 2012). Since Treehaven wishes to use the outdoor skills curriculum guide that is developed from this project on school groups, it is imperative that the curriculum guide is aligned with the academic standards that the State of Wisconsin uses, which are the Department of Public Instruction (DPI) academic standards. Demonstrating alignment of

outdoor skills programs with state standards does not guarantee that the programs will be adopted by schools. However, there's strong evidence that if a center doesn't align their programs with academic standards, then schools won't adopt their programs (Association of Fish and Wildlife Agencies, 2011). It is up to the outdoor skills center to convince school districts that it is in the school's and students' best interest that they visit their center to learn outdoor skills.

IV. What trainings are required for staff members to teach outdoor skills programs?

There are several different training organizations for every outdoor skills activity. Gaining information on which trainings other OS centers or EE centers believe that staff members should complete before they can teach any OS programs is important to this study. Sheridan believes that there are four good qualifications that every wilderness trip leader should have: 1) hard skills, 2) soft skills, 3) judgment, and 4) certifications. "Hard skills" are the general knowledge a person has to complete an outdoor skill, such as canoeing. "Soft skills" are interpersonal communication skills and group management skills. "Judgment" is the ability to think critically and make good decisions to keep the group safe. "Certifications" are the classes that people take and the cards they get that document their abilities to complete certain skills (Sheridan, 2004). Many organizations hire trip leaders based on the number of certifications they have, but soft skills are actually the most important (but hardest to measure) qualification to have. "Certifications are important, but the question of which should be required of summer camp trip leaders is far from resolved" (Sheridan, 2004). Certifications that should be

considered by all organizations for their outdoor education staff to have include, but aren't limited to: 1) Wilderness First Aid through the National Outdoor Leadership School (NOLS), 2) Canoe and Kayak instruction through the American Canoe Association (ACA), 3) American Red Cross Lifeguard Training, and 4) CPR Training,

One suggestion in lieu of having OS staff members obtain certain certifications, is that we could require them to have certain outdoor experiences instead. Some possible guidelines to their personal experiences include; being well-rounded on how to live sustainably, having at least one year of prior experience participating in outdoor education activities (i.e. backpacking, camping, sea kayaking, etc.), and being well-versed in environmental ethics, such as the "Leave No Trace" principles (Martin, 2008). This may be a better alternative because "whether or not certifications provide an effective means for trip leader candidate evaluation is a subject of much debate" (Sheridan, 2004). While mastering a skill is helpful, OS staff members need instructional resources to be able to teach a skill (Association of Fish and Wildlife Agencies, 2011)

V. Summary

The articles cited above clearly define key terms that will be used throughout this study, such as outdoor education, adventure education, outdoor skills, and curriculum. As the curriculum is being developed, information obtained from reviewing the *NAAEE Nonformal Environmental Education: Guidelines for Excellence* will be incorporated. This document, along with so many others, stresses the importance of aligning curricula with state standards. The curriculum that is developed will be aligned with the Wisconsin Department of Instruction Academic Standards. Knowledge gained from

researching outdoor skills trainings and certifications will be remembered moving forward as data is collected on which trainings are most valuable for OS instructors to obtain. Warnings on the importance of trainings, or lack thereof, will also be taken into consideration as the research process continues. Some of the literature recommends that OS centers do not base the level of competency of their OS instructors solely on OS trainings and certifications (Sheridan, 2004; Association of Fish and Wildlife Agencies, 2011).

CHAPTER THREE: METHODS

I. Research Methods

A. Introduction

For this research project, qualitative research will be performed. Semi-structured telephone interviews and non-structured in-person interviews will be conducted to collect the needed data to successfully develop a Best-Practices Outdoor Skills Curriculum. Selected outdoor skills centers will be interviewed over the telephone to discover what outdoor skills programs they offer, what programs are highest and lowest in demand, how each program is adapted to be taught to different age and skill levels, if their outdoor skills lesson plans and curricula are correlated with the *NAAEE Nonformal EE Programs: Guidelines to Excellence*, state academic standards, and/or national academic standards, and what trainings and certifications they require their staff members to complete prior to teaching outdoor skills programs. Semi-structured telephone interviews will be recorded using a digital recorder. They will be transcribed into a Microsoft Word document and coded into propositions, categories, and themes using a Microsoft Excel spreadsheet.

Non-structured interviews will be conducted in person with Treehaven program staff and the executive director to become more knowledgeable on Treehaven's background and what Treehaven hopes to get out of this project.

Outdoor skills curricula and lesson plan outlines will be collected from willing organizations that were interviewed for the project. These lesson plans and curriculum guides will be referenced when the Best-Practices Outdoor Skills Curriculum is being

developed. They will provide much needed information that will help demonstrate how certain outdoor skills programs can be adapted to target specific ages and skill levels.

B. Participant Selection

Outdoor skills centers that were selected to be interviewed for this research project were selected very carefully. With the assistance of Treehaven program staff and the executive director, a list of possible organizations to be interviewed was generated. Outdoor skills centers that met one or both of the following criteria were included on the generated list of possible organizations to interview: 1) outdoor skills centers found within Northern and Central Wisconsin, and 2) outdoor skills centers that are nationally recognized for their great programs.

Outdoor skills centers that were located in Northern and Central Wisconsin were given priority to be included in the research project because it was believed that their targeted audience(s) held similar beliefs, values, and attitudes to the audience(s) Treehaven hoped to target with this curriculum. We wanted to discover which outdoor skills programs were being offered in our local area, which programs were in highest and lowest demand, and what age levels were most targeted for each of these programs. By gaining this information, the curriculum guide could include outdoor skills programs that are already recognized as being strong in the area. By including these programs in the Best-Practices Outdoor Skills Curriculum, Treehaven can increase their chances that community members and school groups will be interested in visiting their center to attend an outdoor skills program.

Outdoor skills centers that were nationally recognized were also selected to be interviewed. We wanted to learn what outdoor skills programs were being taught throughout the country and how they were being implemented. If it is possible, strong outdoor skills programs that are taught nationally but not locally will be included into Treehaven's Best-Practices Outdoor Skills Curriculum. Since many programs depend on natural features on landscape, such as fast flowing water for white-water rafting, some nationally-known and strong programs will not be able to be implemented at Treehaven because of their landscape limitations.

C. The Interview Process

Semi-structured telephone interviews will be conducted with ten selected OE, OS, and EE centers. Semi-structured interviews were chosen over structured and non-structured interviews because they granted both consistency to each interview and the option of exploring areas deeper wherever it is necessary. Each interviewee was asked the same eleven questions: 1) What outdoor skills programs do you offer at your facility? 2) If you had to pick your strongest top three outdoor skills programs, which ones would they be? 3) What makes these outdoor skills programs so strong? 4) Do you follow the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* when developing your outdoor skills programs? 5) To what extent do you tie environmental education into your outdoor skills curriculum? 6) How do you adapt each outdoor skills program to account for the different age and skill levels of your audience? 7) What two outdoor skills programs do you consider to be your weakest? How do you think you could make them stronger? 8) What trainings and certifications does your organization require your staff members to have prior to teaching an outdoor skills program? 9) What

trainings and certifications do you feel would be ideal for all outdoor education staff members to have before teaching an outdoor skills program? 10) Does your organization have an Outdoor Skills Curriculum Guide in place for your staff members to use? 11) Can I get a copy of your organization's Outdoor Skills Curriculum Guide?

Each interview was scheduled at the interviewee's convenience. They were conducted between March 2012 and May 2012. The selected ten interviewees were given a list of dates in February 2012 that the researcher had available between March and June 2012. Each interviewee selected their own interview date from the list of dates available for the researcher. Each interview varied in length. The average length was 35 minutes; however, the shortest interview went 25 minutes and the longest interview lasted 70 minutes.

Notes were taken throughout the interview and these notes were kept on file. All interviews were recorded using a digital recorder so they could be transcribed later on and analyzed more thoroughly. Transcribed interviews were printed off and used for coding. The electronic recordings of the interviews were stored on the researcher's computer.

D. Non-Structured Interviews

Non-structured interviews were conducted in person with Treehaven program staff and the executive director to become more knowledgeable on Treehaven's background and what Treehaven hopes to get out of this project. Information regarding Treehaven's outdoor skills program materials, and which programs are most desirable to be included in the Best-Practices Outdoor Skills Curriculum, was obtained by interviewing Treehaven staff. Questions regarding the affiliations that Treehaven were

also asked in hopes of discovering if other organizations can contribute outdoor skills equipment and materials to Treehaven so they can offer certain programs at their site without purchasing additional equipment.

E. Documents

Documents were obtained throughout this research project in the form of outdoor skills lesson plans and curriculum guides from the selected interviewed outdoor skills centers. However, not all of the selected organizations were expected to provide their outdoor skills lesson plans and curricula. If groups were not willing to share their lesson plans and curricula, then these materials were not collected. Additionally, some of the selected outdoor skills centers did not have lesson plans or curricula documented in writing. Obviously, program lesson plans and curricula were not obtained from OS, OE, and EE centers that did not have any materials documented in writing. Lesson plans and curricula from non-selected nationally recognized sources were researched to provide more data towards developing the Best-Practices Outdoor Skills Curriculum.

II. Data Collection and Analysis

A. Developing Interview Questions

Interview questions were developed with the help of Dr. Corky McReynolds. Interview questions were designed to reveal information regarding the selected organizations outdoor skills programs and curriculum guides. We wanted to discover: 1) which outdoor skills programs each selected organization offered at their facility, 2) which programs were in highest and lowest demand, 3) which programs were viewed as

the strongest and weakest, 4) what academic standards, if any, are correlated with outdoor skills programs and curricula, 5) if organizations tied environmental education into their outdoor skills programs, and 6) how certain OS programs were adapted to address the needs of different ages and skill levels. To make Treehaven program staff stronger and more comfortable at teaching OS programs, we also asked questions regarding the specific trainings each selected organization required their OS staff to have prior to teaching OS programs. Interview questions were edited and reviewed four times by Dr. McReynolds. When the eleven interview questions were finalized, an IRB form (Appendix F) was submitted to the University of Wisconsin-Stevens Point. After the interview questions were approved by the IRB board, the interview questions were ready to be pilot tested.

B. Pilot Test Interview Questions

The interview questions were piloted once with the help of Jeremy Lloyd of the Great Smoky Mountains Institute in Townsend, TN. Jeremy was the first of the ten interviewees selected for the project. He agreed to pilot the eleven interview questions and offer suggestions to improve on the interview questions after he had completed his interview. He felt that the eleven questions were appropriate for the interviewing process. However, he suggested that the order of the questions should be changed to make the interview process run smoother, and that a probing question should be added to discover which academic standards are used in the development of outdoor skills programs and curricula in lieu of the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence.*

C. Interview Selected Outdoor Skills Centers

Selected outdoor skills centers were interviewed using a semi-structured format. All interviews were conducted over the telephone. Each interviewee was asked the same eleven questions. Depending on the interviewees' responses to the eleven research questions, however, different probing questions were asked during each interview. All interviews were recorded using a digital recorder and were later transcribed. A Microsoft Excel spreadsheet was used to code the transcribed interviews. Data collected from these transcribed interviews were coded into propositions. These propositions were then coded into categories. Finally, these categories were grouped into themes. The themes found throughout the research are the major findings of the research. These themes provide best-practices information in regards to the followings topics: 1) What outdoor skills programs are offered throughout the country? 2) How are strong and highly demanded OS programs implemented? 3) What characteristics can lead to weak OS programs? 4) How is environmental education incorporated into OS programs? 5) Are academic standards and/or the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* taken into consideration when developing OS programs and curricula? 6) What trainings and certifications are required for OS staff to complete prior to teaching OS programs?

D. Interview Primary Stakeholders (Treehaven)

Informal non-structured interviews were conducted with Treehaven's executive director and program staff. These interviews were conducted face-to-face and were recorded using a digital recorder. The interviews were not transcribed; however, they

were referenced when deciding on which outdoor skills programs would be included into the Best-Practices Outdoor Skills Curriculum. Information regarding Treehaven's OS programs preferences was obtained during these non-structured interviews, along with background information regarding Treehaven's physical characteristics of their property, OS program materials and equipment, and their affiliated organizations OS program equipment.

III. Projected Treatment of Objectives

A. Objective 1: To investigate selected outdoor skills centers to discover which outdoor skills programs are being taught and how they are being implemented throughout the country; and to determine which outdoor skills programs can be implemented at UWSP-Treehaven.

To discover what kinds of outdoor skills programs are being taught and how they are being implemented throughout the country, ten OS, OE, and EE centers were handpicked and interviewed using a semi-structured interview format.

To determine which outdoor skills could be implemented at Treehaven, two approaches were used. First, site visits were conducted on Treehaven's property. The researcher walked the property, looked at maps, and inventoried OS program materials that Treehaven possessed. Any OS equipment already owned by Treehaven, automatically gave that OS program a higher priority than programs that required equipment but was not owned as of yet, by Treehaven. Second, non-structured face-to-face interviews were conducted with Treehaven's executive director and program staff to

determine which outdoor skills programs they felt were most desirable for them to offer at their site.

B. Objective 2: To investigate how selected outdoor skills centers incorporate environmental education into outdoor skills programs.

To discover how outdoor skills centers throughout the country incorporate environmental education into OS programs, ten OS, OE, and EE centers were handpicked and interviewed using a semi-structured interview format.

C. Objective 3: To discover if outdoor skills centers align their outdoor skills programs and curricula with the *NAAEE Nonformal EE Programs: Guidelines to Excellence,* state academic standards, and/or national academic standards.

To discover if outdoor skills centers throughout the country align their OS programs and curricula with the *NAAEE Nonformal EE Program: Guidelines to Excellence,* or any other academic standards, ten OS, OE, and EE centers were handpicked and interviewed using a semi-structured interview format. Information regarding their OS programs and their alignment with academic standards was obtained. This information was later coded and analyzed.

D. Objective 4: To investigate what trainings and certifications selected outdoor skills centers require their staff to have prior to teaching outdoor skills programs.

To find out what trainings and certifications staff were required to complete prior to teaching OS programs by OS, OE, and EE centers throughout the country, ten OS, OE, and EE centers were handpicked and interviewed using a semi-structured interview format. Information regarding the trainings and certifications that are required for staff members to complete in the selected organizations was obtained. Information regarding what trainings and certifications are viewed as most valuable and desired by all interviewees was also obtained during the interview process.

E. Objective 5: To develop a Best-Practices Outdoor Skills Curriculum for Treehaven that has five outdoor skills program lesson plans included in it.

To develop a Best-Practices Outdoor Skills Curriculum for Treehaven, information gathered by the semi-structured interview process will have to be analyzed qualitatively. Each selected outdoor skills center will be sharing information about the techniques they use to effectively implement their outdoor skills programs. When similar techniques between selected OS centers are discovered, they will be classified as best-practices. Information regarding what makes OS programs strong or weak, how EE is incorporated into OS programs, what academic standards, if any, are correlated with OS programs and curriculum, and what trainings are required for OS staff to complete will also be gathered. If it's found that multiple selected OS centers yield similar information, that information will be considered the best-practices used by organizations in the field.

The data yielded by the semi-structured, coded interviews will be compared to the information gathered from the Treehaven program staff and executive director. Programs that are viewed as most desirable or most needed at Treehaven by Treehaven staff were

given higher priority over other programs. The five programs selected for the Best-Practices Outdoor Skills Curriculum will be programs that are viewed as most needed by Treehaven program staff and viewed collectively as some of the strongest OS programs by the selected and interviewed OS centers.

IV. Summary

By using the above research techniques and data collection tools, information that is crucial to discovering what the best-practices of implementing outdoor skills programs will be revealed. The research project and curriculum guide will provide Treehaven great benefits now and in the future when they develop even more OS and EE programs. In the present, this project will provide Treehaven with five outdoor skills program lesson plans, which will be ready to be implemented as soon as the project is completed. Information regarding the necessary trainings and certifications that will make OS staff members more confident and comfortable teaching the programs will also be provided. In the future, Treehaven will be able to reference this project to help the organization create new OS programs that better address the needs of their target audience members. It will serve as a reminder to the program staff about how important it is to incorporate environmental education and academic standards into each OS program. Program staff will also be able to reference the project to find out what trainings are available locally and nationwide to help them gain the competencies needed to effectively teach selected outdoor skills programs to their target audience(s).

CHAPTER FOUR: RESULTS

I. Introduction

This chapter provides the results collected from the ten semi-structured interviews. All ten interviewees were hand selected by the researcher to yield the most effective and impactful results for the primary stakeholder, UWSP-Treehaven.

Results were analyzed quantitatively. Each interview was recorded using a digital recorder. They were later transcribed. The transcribed interviews were read and important keywords and phrases were classified into propositions, categories, and then themes. This process was completed using Microsoft Excel.

After analyzing the interviews, twelve themes emerged. Those themes are stated below. Below each theme are the letter coded categories that support that particular theme. Under each supporting category, there is an explanation of how the category relates to the theme, and there is also supporting raw data from a select few propositions. These twelve themes provide critical data that helps the research accomplish all five of the project objectives stated in Chapter 1:

1. To investigate selected outdoor skills centers to discover which outdoor skills programs are being taught and how they are being implemented throughout the country; and to determine which outdoor skills programs can be implemented at Treehaven.
2. To investigate how selected outdoor skills centers incorporate environmental education into outdoor skills programs.

3. To discover if outdoor skills centers align their outdoor skills programs and curricula with the *NAAEE Nonformal EE Programs: Guidelines to Excellence*, state academic standards, and/or national academic standards.
4. To investigate what trainings and certifications outdoor skills centers require their staff to have prior to teaching outdoor skills programs.
5. To develop an outdoor skills curriculum for Treehaven that has five outdoor skills program lesson plans included in it.

II. Themes and Supporting Categories

Theme 1: The OS programs that OS centers offer are based on the landscape of their property, their OS equipment, and their mission statement.

A. Shooting skills.

Archery (bow and arrows) and recreational shooting (guns) have been identified as shooting skills taught throughout the nation at OS centers. Depending on the target audiences for each program, the equipment used for the program will differ. Compound bows, recurve bows, longbows, and crossbows can all be used in archery programs. BB guns, 22 rifles, and high power rifles for hunting can be used for recreational shooting. The size of an OS center's property may also dictate the availability of archery and recreational shooting sports programs. For example, large forest properties can offer learn to hunt deer and turkey programs, while large marshy properties can teach learn to hunt waterfowl programs. Smaller OS centers can build shooting/archery ranges and offer basic shooting programs.

OS centers want to accomplish their organization's mission. In the case of OS centers that are partnered with state or federal agencies, that mission includes the recruitment of more hunters and the sale of hunting licenses. "Our job is to get people outdoors and eventually, hopefully, they'll buy hunting and fishing licenses" (Klawitter, 2012).

B. Water skills.

Canoeing, kayaking, sailing, fishing, and fly fishing were identified as water skills that are taught throughout the nation at OS centers. Not every OS center offers water skills programs. Water skills are highly dependent on the physical characteristics of OS center's property. If there is no water present, or an OS center doesn't have the ability to transport their audience to a body of water, then no water skills will be offered. Water skills also vary greatly depending on the type of water that an OS center has access to. Lakes and slow moving rivers allow OS centers to offer water skills such as canoeing, sailing, and kayaking to beginner level people. Mountainous terrains with fast flowing or whitewater conditions typically offer programs to more physically developed audience members. Generally speaking, "canoeing is very accessible to everybody" (Fyksen, 2012). So, it's taught at the majority of OS centers that have access to water. Fishing can also be taught easily to people of all ages. "It's probably the easiest one to adapt for the younger kids" (Klawitter, 2012).

C. Survival skills.

Wilderness survival skills (fire building and shelter building), animal trapping, animal tracking, and identifying wild edibles have been identified as survival skills taught

by OS centers nationwide. Survival skill programs are easily taught in most weather conditions and seasons. This makes survival skills programs incredibly popular at OS centers. 70% of the interviewed OS, OE, and EE centers were found to offer at least one survival skill program at their site.

"With the wilderness survival, media has to play a part in it. When you talk about *Man vs. Wild* and *Survivorman* and all of that…it provides less structure and kids just want to interact with nature" (Fyksen, 2012). "Shelter building and survival fires tie into literature, too. It ties into what they're doing in the classroom, so it's just excellent activities to do" (Meek, 2012). Shelter building and fire building can be taught year round and adapted to fit any ecosystem type. Most commonly, OS centers have audience members construct life size debris shelters that the program participants can play and sit in after it is complete. Although, depending on the mission of the OS center or its location, adaptations can be made to downscale the debris shelters. "Participants have to create a small shelter using only natural materials for the gelatin animal…we take the temperature of a gelatin animal (human) before and after. We minimize the amount of impact on the landscape by not having human sized shelters" (Workman, 2012).

Animal tracking is primarily taught in the winter months but it can be taught year-round if the conditions are right. "Tracking really only works if there's snow, theoretically, you can find tracks in mud but because we use different trails at different times of the year, if there's not snow, tracking becomes more difficult to do" (Workman, 2012). Wild edibles can also be taught year-round because different plants are edible during different seasons. Animal trapping programs are commonly taught shortly prior to the trapping season opening.

D. Tripping skills.

Orienteering (map and compass use), GPS use, outdoor cooking, backpacking, camping, and hiking were identified as tripping skills offered by OS centers throughout the U.S. Backpacking, camping, and outdoor cooking programs are almost offered exclusively at OS centers that have wilderness tripping (canoeing or backpacking) programs. Actual trip durations can vary from one night to twelve night adventures. Depending on the mission and goals of the organization, a specified age group will go on a trip or family groups will be invited to participate. When it comes to outdoor cooking, "everybody likes to eat food. When they go outside to cook everything, everyone has a job and everybody has to work together and be responsible for things" (Searles, 2012). It's a form of team building exercise.

Backpacking and camping programs allow participants to hone their outdoor skills. While participants are camping they have to build fires, read maps, use compasses or GPS's, plan routes, set up camp, and cook meals (Roloson, 2012; Stanley, 2012). Hiking programs can range from 30 minutes to 7-8 hours. Hiking programs are a great way to engage audiences with an OS center's property, the cultural history of the land, and the natural features it has.

Orienteering programs are slowly being transitioned out of upper middle school, high school, and adult audience settings. "Orienteering is primarily for grades five and six" (James, Coleman, & James, 2012). GPS and geocaching courses are quickly becoming popular programs at OS centers. "Geocaching is not suitable for grades less than 4th grade" (James, Coleman, & James, 2012). "Geocaching has a pretty strong

following for people, so we have permanent geocaching traps registered here, so tourists are always coming through town to do it" (Klawitter, 2012). Orienteering and GPS programs can easily be incorporated into multiple day hiking, backpacking, and camping programs.

E. Winter skills.

Cross country skiing and snow shoeing were identified as winter skills that OS centers teach. These skills can be taught to all age groups at the basic level. These winter skills provide a source of transportation and a way for audience members to enjoy the outdoors during winter. "Essentially, with cross country skiing, we're trying to get the kids exposed to the activity. We want to teach them that cross country skiing is a fun way to enjoy the outdoors during winter. We teach them how to pick out poles and skis that fit and we teach them how to get up after they fall down without taking off their skis. So it's very, very, very basic" (Workman, 2012). "With cross country skiing and snow shoeing, our goal is to introduce them to the activity, and to the equipment, and to give them the experience, but we want them to feel confident and enjoy it, and want to do it again" (Meek, 2012).

F. Other land recreational skills.

Birding, rock climbing, biking, horseback riding, and gardening are other land recreational skills that select OS, OE, and EE centers offer to the public depending on the equipment they own and the features they have on their property. Rock climbing, biking, and horseback riding can be very costly programs; a minority of OS centers offer these programs to the public. Birding programs can be offered at most OS, OE, and EE

centers. However, they attract a very select demographic and birding is extremely weather dependent. It's hard to get a birding program to be successful; many of ours end up being canceled (Searles, 2012).

Theme 2: For OS programs to be successful, the needs of all stakeholders must be met.

S. Audiences' needs must be met for them to enjoy OS programming.

Different audiences have different needs. An audience's needs must be met or they will not enjoy the program. Negative experiences gained from participating in OS programs can result in individuals never attempting that outdoor skill again. "People really have to have the skills down in order for them to have a successful experience. And quite frankly, if I don't think they are going to have a successful experience in a canoe, I won't even put them in. I truly believe that if a kid has a really negative experience in a canoe on the first time, that has the chance to turn them off to canoeing for life" (Fyksen, 2012). "Instructors should be good at adapting to make sure kids are comfortable and feel safe" (Rohe, 2012).

U. Schools' needs to attend an OS program.

Schools and teachers have needs in regards to what their students are learning while they are visiting an OS, OE, or EE center. OS programs must be appropriate for the age and skill level of their students and OS programs must address specific state and/or federal academic standards. It is a school's choice to visit or not to visit an OS, OE, or EE center. If a center does not address schools' needs, they can choose not to visit that center. For this reason, it's best to formally address all of a school's needs prior

to their visit. “If we aren’t meeting standards, schools aren’t coming to us” (James, Coleman, & James, 2012).

Schools may request fewer OS programs than a summer camp audience. Since specific academic standards must be met, only certain OS programs can address them. Also, some OS programs are avoided completely even if they are correlated with academic standards because of political reasons. “We don’t necessarily do all of the shooting sports with school groups” (Klawitter, 2012).

V. OS program instructors’ needs to be successful.

OS program instructors must feel comfortable and confident with the skills they are teaching to ensure that the OS programs are run successfully. Experience performing the outdoor skills they will be teaching and educational backgrounds in environmental sciences or environmental education can increase confidence within individuals. Organizations can also offer training sessions to OS instructors prior to them teaching OS programs to build confidence. They can allow new instructors to team teach with more experienced instructors, and they can provide feedback on instructors or evaluate them to help instructors improve over time. Before we actually send them to teach a class, we make sure they are 100% comfortable. “All of our outdoor skills classes, we always team teach. We’ve had some people that have never fished before and have said they are not comfortable teaching a fishing class. I always tell them, speak with confidence and people won’t know if it’s your first class or thousandth class you’ve taught” (Klawitter, 2012).

Z. Organizations’ needs to make OS programs successful.

The OS programs that organizations offer to the public must align with their mission statement and goals. In addition to this, OS centers must accommodate the requests of their affiliated organizations. If partner groups that are donating funds and/or equipment to an OS center request that the center offers a particular program to the public, OS centers must accommodate this request. "The reason why we do those programs is of a mitigation agreement with Seattle City Light and the National Park, they are two of our major partners" (Roloson, 2012). Luckily partner groups will sometimes help finance a specific program they are requiring an OS center to offer to the public. Partner groups may buy equipment needed for the program, allow OS centers to use their facilities for free if they are traveling to them, and/or cover travelling expenses. "Since they're our partners, we don't have to pay them so we can keep the programs free" (Roloson, 2012).

AE. Different audiences and settings have different needs.

Outdoor skills can be taught to people of all ages and skill levels. There are a wide variety of audiences an instructor could be teaching an outdoor skill to. Because of this, instructors must be extremely flexible and adaptable to ensure that they successfully address the needs of each audience member they have. For example, school's need to have academic standards addressed in all OS programs. Family programs and adult programs do not need academic standards incorporated into curriculum. "We have canoeing programs for public audiences, adults, families, and schools. With the school programs we need to incorporate environmental education, talking about ecosystems and pointing out certain animals. With public programs, we would definitely point those things out, but it's not nearly as much of the goal of the program. It's mostly about

experiencing the outdoors with your friends and family" (Rohe, 2012). "For family camps, there isn't a separate curriculum for them. We just sort of use what's in the school curriculum and we adapt it accordingly" (Lloyd, 2012).

Theme 3: Outdoor skills programs can be unsuccessful if the needs of stakeholders are not met.

H. Factors contributing to weaker programs.

Three factors were identified as contributing to weaker OS programs. First, the absence of flexibility in a program can make it weak. OS and EE instructors must be able to adapt to unexpected surprises during a program. If they cannot do this, a program may suffer. "If I had to pick our weakest program, it would either be our Skagit Tours program or our base camp program, and it's just because of the flexibility built into those programs" (Roloson, 2012). Second, individual registration formats for OS programs. People can cancel or not show whenever they want and without warning. Also, if they don't want to participate during the program, they don't have to. When this happens, little education takes place (Roloson, 2012). Third, if a program is new or still being developed it can appear weak. "I don't think our nature program is really necessarily there yet, but I think that it has the most potential to be a great program as it ventures into the sustainable living aspect of things. It's kind of new and it still has room for improvement" (Stanley, 2012).

AA. Factors that contribute to unsuccessful OS programs.

Depending on the situation, an OS program can be unsuccessful because of factors uncontrollable to the organization and to the instructor, or they can be unsuccessful because of poor planning by the curriculum developer. Factors such as bad

weather conditions and the absence of an animal or plant can make a strong OS program unsuccessful from time-to-time. Examples would include spotty snow conditions during a cross country skiing or snow shoeing program, heavy rain during a birding program, and no fish caught during a fishing program. "I know that over towards the river, in La Crosse, there's a lot of activity and participation in learn to hunt waterfowl programs. But, for some reason, it just dropped off here. And, again, I'd have to say it's the waterfowl population. It's not as big and not as accessible as other areas in the state" (Searles, 2012). Some factors can be controlled but are forgotten on occasion. An example of this would include either not correlating OS programs to state academic standards or teaching beginner level classes to intermediate or advanced audiences. "So for us it's absolutely critical and necessary to be basing all of the programing that we do here on those academic standards, so we can help the teachers meet that for their students" (Meek, 2012).

Theme 4: OS instructors' background education, experience, and comfort level teaching OS programs will determine if they are effective instructors.

I. OS instructor desired background.

Instructors that have had lots of experience participating in outdoor skills activities feel more relaxed, comfortable, and prepared to teach their particular skill set to people. A more experienced OS instructor typically means a more knowledgeable instructor. "I guess I feel like experience is almost as good as having an official certification" (Searles, 2012). Having a higher education degree, such as a bachelor's degree, prepares OS instructors, too. Environmental degrees and science degrees are desired but not required. "The naturalist interns we hire have a bachelor's degree in some

science field; it could be in natural resources, or education. We've had bachelor's in psychology and things like that. So, essentially a bachelor's degree is desired" (Workman, 2012). Overall, "you want a person who has a really good background in environmental science and someone who is very comfortable in the outdoors, someone who is knowledgeable about ecosystems, of plant species and communities, and things like this, that's really important" (Meek, 2012).

V. OS program instructors' needs to be successful.

OS instructors need to feel comfortable, confident, and prepared prior to teaching OS programs. Personal experiences participating in outdoor skill activities and background knowledge about the environment can make OS instructors feel more comfortable and confident. However, OS centers can assist instructors to help them feel more prepared. By offering specific OS trainings to their instructors and providing constructive feedback to them, OS instructors gain a better understanding of these outdoor skills and how they can be more effectively taught. "We have a two to three week training before they even start teaching, and then they are constantly being observed and given feedback by peers, supervisors, and other staff" (Roloson, 2012).

Theme 5: OS curricula are typically program lesson plans compiled together into one guidebook and should be aligned with academic standards.

G. Academic standards.

For schools to visit OS centers, all of the programs they request must be correlated with state and/or federal academic standards. For this reason, most OS centers are incorporating state and/or federal academic standards into all of their OS programs. "We absolutely tie in state standards into all of our programs" (Fyksen, 2012).

Addressing academic standards into OS programs helps organizations attract school groups. "It also makes teachers' lives easier. So for us it's absolutely critical and necessary to be basing all of the programing that we do on academic standards. We help the teachers meet their required academic benchmarks for their students" (Meek, 2012). Programs that do not address the required academic standards set forth by certain states are being transitioned out of OS centers programing choices, and new OS programs that do address the required academic standards are replacing them. "We don't do orienteering anymore. We used to do it; but frankly, the academic standards have changed in such a way that it really doesn't get addressed at all" (Workman, 2012).

X. Documenting OS programs.

Because outdoor skills vary greatly, it's incredibly hard to link them together both in their physical demeanor and with the message or theme they portray. OS, OE, and EE centers across the United States offer a wide variety of programs and each program can be adapted to fit an incredible array of ages and skill levels. Typically, OS centers' curriculum guides include all of the OS programs they offer to the public. However, since each outdoor skill varies so greatly, the OS programs don't build off of each other. OS centers simply end one program and start another program and don't discuss how the two are related, because most times, the two outdoor skills aren't related at all. "We have some lesson plans and lesson outlines, but we don't have a specific outdoor skills curriculum guide" (Rohe, 2012). "I got a little guide I put together I guess. It's just basically all the lessons I've compiled throughout the years of myself, other naturalists, and all the interns" (Klawitter, 2012).

Theme 6: The *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* are not commonly used when developing outdoor skills curricula.

Y. The Importance of Using the NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence while developing OS programs.

The *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* is recognized by the majority of OS, OE, and EE centers as being a great tool. Because the guidelines strictly cover environmental issues and environmental education only, they are not a good tool to base outdoor skills on solely. Only 10% of the researched organizations were found to correlate their OS programs with the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence*. "Yes, we do tie the NAAEE Guidelines in. And, I would say with our school programs, we follow those guidelines pretty strictly" (Rohe, 2012).

It's important to note that the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* first were published in 2004. They are a new set of standards, and their popularity is still growing. However, 30% of all the interviewed organizations admitted that they have never heard of the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence*. "No we don't tie those standards into our curriculum, and to be quite honest, I didn't know such a thing existed" (Fyksen, 2012).

The majority of the interviewed organizations (60%) admitted that even though they do not correlate their OS curricula and lesson plans to the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence*, they touch upon some of

their benchmarks throughout a typical OS program. Because environmental education is easily tied into outdoor skills programming, some of the goals that the NAAEE sets forth in their *Nonformal Environmental Education Programs: Guidelines for Excellence* are discussed during OS programs. "We try to address the standards and benchmarks our schools must meet, but as I read through the *Nonformal Environmental Education: Guidelines for Excellence*, there are some components of the guidelines that I would say we do meet. We don't address these guidelines specifically; however, I do think they mesh well with the standards, guidelines, and benchmarks we use for our curriculum" (Meek, 2012).

Theme 7: Environmental education is easy to tie into most OS programs and should be incorporated into OS programs where it is appropriate.

AC. Incorporating environmental education into OS programs.

Because most outdoor skills take place in a natural setting, it's very easy to incorporate environmental education into outdoor skills programs. Of course, some OS programs are easier to tie EE into then others. For example, it's easy to incorporate wetland ecology principles into a canoeing program. It is also easy to tie in botany and forest ecology into a mountain biking program. It's a little more challenging to tie EE into archery because you are simply using a bow and arrow. Although, given enough time, you could incorporate hunting principles and hunter safety into an archery lesson.

Some OS centers view their classes as primarily EE programs that use outdoor skills to get their messages across to their audience. "I'd like to think that we teach environmental education and there are bits and pieces of outdoor education mixed into that" (Lloyd, 2012). "I would say our entire program is built into the environmental

education piece and the outdoor skills just happen because of the way the program is designed" (Roloson, 2012). For example, we offer backpacking programs to teach people about conserving the landscape and how to practice Leave No Trace principles. "So I think as we are looking at the trail aspect, I think the environmental education in that kind of field is in the forefront of our minds as we are talking about Leave No Trace and things like that" (Stanley, 2012).

Theme 8: Outdoor skills can be taught to various age and skill levels by advertising programs to different audiences which meet their needs.

S. Audiences' needs must be met for them to enjoy OS programing.

There are several different audiences that OS programs can have. Each specific audience has their own specific needs. These needs must be met for the audience members to have an enjoyable time participating in their OS program. OS programs can be modified several different ways to meet the needs of a specific audience. Some ways that an OS program can be adapted include, but are not limited to the following: 1) program duration, 2) including activities that incorporate different learning styles, 3) equipment used, 4) programs correlated with academic standards, 5) more teacher guidance, 6) more individual learning time, and 7) more team exercises. "I think wilderness survival is successful because it hits on so many different learning styles; that's why it's definitely popular with the schools" (Fyksen, 2012).

W. There are many different settings for OS programs to reach their target audiences.

The ten selected OS, OE, and EE centers identified many different settings that audience members can safely participate in OS programs. OS programs can be offered to school groups, boy/girl scout groups, families, adults, graduate students, and youth (K-12

students) in a summer camp setting. Settings that OS programs can be taught in include, but are not limited to the following: 1) youth summer camps, 2) school groups (schools visit the OS centers and/or the OS center visited the school), 3) youth, family, adult, or general public weekend workshops, and 4) classes offered as undergraduate or graduate credits. Regarding weekend workshops, the same skill can be taught to multiple age and skill levels; however, participants are typically placed into age and skill level groups that match their own unique characteristics. "For the *learn to hunt deer* weekend workshop, youth classes are 12-15 and adult classes are 16 and older" (Searles, 2012).

AD. You can adapt OS programs to fit different skill levels and abilities.

As stated previously, many outdoor skills programs can be adapted to better fit specific age and skill levels. The easiest way to adapt OS programs is to modify the OS equipment you are using for a particular audience. For example, "for shooting sports, we usually use the Mini-Matthews Genesis Bows and stuff like that, so we have smaller equipment for the kids to use" (Klawitter, 2012). Another way you can adapt an OS program is by the level of help an OS instructor or adult chaperone provides to the program participants. "You can get just about every kid in a canoe and it's fairly easy to teach and it's fairly easy to learn, at least on a very surface sort of level" (Fyksen, 2012). For younger or less skillful groups, an adult chaperone or OS instructor can be stationed in the stern of the canoe and help that participant maneuver their canoe. "For our summer camps, we go canoeing with 1st and 2nd graders, and so usually with 1st and 2nd graders, the adult will sit in the back because a lot of 1st and 2nd graders aren't good at steering, especially when it's a little more windy or something like that" (Rohe, 2012). For intermediate age and skill level canoers, an OS instructor can sit in the middle of the

canoe and provide verbal assistance to two participants (one in the bow and one in the stern of the canoe). With advanced age and skill levels, an OS instructor can be in their own canoe and simply monitor the program participants' progress throughout the program. Finally, an OS instructor can adapt the duration and the content of an OS program to address an audience's abilities. For example, a younger audience (six year olds) may have a lower endurance level than a teenage audience (14-15 year olds). The younger audience may spend less time canoeing and talking about canoe strokes than a teenage audience.

AE. Different audiences and settings have different needs.

As previously stated, there are several different types of audiences and the age of an OS program's audience can vary tremendously. Depending on the setting that a specific audience is in, their needs are going to differ. For example, a 14 year old can participate in an OS program during a school group visit or a when visiting an OS center during summer camp. School groups need to have academic standards addressed in their OS programs. Summer camp OS programs do not necessarily have to have academic standards addressed in their OS programs. "For summer camps, it's a little looser. We do a lot of outdoor skills type things in our summer camps and we are always teaching and pointing out cool things along the way, but environmental education and academic standards are not quite as much of the focus" (Rohe, 2012).

Theme 9: Using multiple teaching strategies will increase an instructor's effectiveness and make the OS programs more enjoyable for the audience.

S. Audiences' needs must be met for them to enjoy OS programing.

There are many useful techniques that an OS instructor can use to help address the needs of their audience and cater to those needs. It is extremely important that OS programs accomplish three things: 1) they incorporate multiple learning styles, 2) they are hands-on activities, and 3) they are somehow connected to the values and attitudes that the audience has; in other words, the OS program really "hits home" for all participants.

First, it's important that all OS instructors "figure out how to teach to different kinds of kids and different behaviors, and the different ways that kids learn" (Stanley, 2012). By addressing several different learning styles in each OS program, participants will be able to relate themselves to the program more easily. Second, hands-on activities give program participants more independence and the chance to make their own decisions. They get to discover for themselves how certain equipment operates and they get to use their own creativity along the way. Hands-on activities are another way to incorporate another learning style into an OS program. "Shelter building is still a learning opportunity for the kids, but they get a chance for a real hands-on activity that's a little less structured, and they can decide how they want to build their shelter or how they want to work together to build their fire" (Fyksen, 2012). Finally, OS programs that make a lasting impression on participants will always be successful. If an OS instructor can find a way to make a connection between the outdoor skill they are teaching someone and a person's life, that person will want to continue to pursue that outdoor skill. "With our students, not only are they enjoying the activity, but we know that they are really getting the content, that they are going to be able to take that back to school with them or back home, and they're going to want to carry that on" (Meek, 2012).

AF. OS instructors' different strategies of teaching.

It is extremely important that every OS instructor has the ability to relate to their audience. Because each audience member is unique and has their own personal interests, beliefs, attitudes, and values, adaptability and flexibility is critical to the success of a program. "I feel like our educators are really great at accessing where the group is, and we work with so many different groups that we kind of adapt as we go" (Rohe, 2012). "We have a lot of flexibility with our instructors. As long as they teach a fun, educational, and safe class, we don't mind how they construct the class" (Klawitter, 2012). An instructor's comfort level teaching a class increases every time they teach that class. This allows them instructors to discover more effective ways to adapt a class, become more flexible in their teaching style, and become a more effective instructor overall. "To make a class more effective, you have to teach that more" (Fyksen, 2012).

Theme 10: People of all ages benefit greatly by participating in outdoor skills programs.

T. The goals of teaching OS programs to people.

There are several goals that OS instructors have when they are teaching OS programs to people. Goals identified by the interviewees include, but are not limited to 1) promoting environmental education, 2) making people feel more comfortable performing an outdoor skill, 3) inspiring environmental stewardship, and 4) helping people develop a new life-long passion or interest. "We offer environmental education; I can certainly tell you what we do for those other things. All of the recreational activities are working towards a higher goal, if that makes sense. I think it would almost be the other way around. To what extent do we tie in outdoor programs to our EE programs? It

would be sort of to a certain extent we do" (Lloyd, 2012). Environmental stewardship is an underlying goal that OS instructors try to promote when teaching shooting and hunting skills. With our *Learn to Hunt* program, we sort of have a message of stewardship, taking care of the earth, and of your surroundings (Searles, 2012).

Building confidence and making people feel comfortable performing outdoor skills is one of the greatest goals of teaching OS programs. "It's not about grueling wilderness experiences; it will be grueling enough as it is. What we really want is for the kids to feel comfortable out there" (Lloyd, 2012). By helping people feel more comfortable and confident with an outdoor skill, OS instructors hope it will inspire a life-long passion and interest in their audience members. OS instructors want their audience members to actively engage in outdoor skills after they have completed their OS program(s). The outdoor skills we teach are something that will hopefully become a life-long activity for the participants (Meek, 2012).

Theme 11: The trainings that OS instructors complete should relate to the OS programs they teach.

J. Required trainings and certifications for all OS instructors.

Three trainings/certifications were identified as being required for all OS instructors by the selected interviewees: 1) CPR certification, 2) First Aid certification, and 3) a two to three week training period for staff to learn all of the OS programs they will be teaching. "First Aid and CPR are required for all people that are on staff whether they work with kids or not" (James, Coleman, & James, 2012). "We have a two week training period at the beginning of the summer and the beginning of the fall. During the two week training, instructors learn the content of all of the programs" (Workman, 2012).

K. Required trainings and certifications for wilderness trip leaders.

Five trainings/certifications were identified as being required for all wilderness trip leaders by the selected interviewees: 1) CPR certification, 2) Wilderness First Aid certification, 3) First Aid certification, 4) Wilderness Water Safety certification, and 5) a two to three week training period for the OS instructors to learn all of the skills needed to lead a wilderness trip. "So for our staff, it is a requirement that if you're taking kids out to the wilderness, that you need to have the Wilderness First Aid, lifeguarding, and the Wilderness Water Safety certification" (Stanley, 2012).

L. Recommended training and certifications for wilderness trip leaders.

Six trainings/certifications were identified as being recommended for all wilderness trip leaders by the selected interviewees: 1) Canoeing certification, 2) Lifeguard certification, 3) Leave No Trace training, 4) NOLS training, 5) Wilderness First Responder (WFR) certification, and 6) a multiple day training trip with fellow OS instructors. All of these recommended trainings are viewed as being valuable to have by the majority of the selected interviewees. However, because some of them are costly trainings to put seasonal staff members through, they are not always required to have. WFR and NOLS certifications are among the trainings that most OS, OE, and EE centers cannot afford to put their seasonal staff through. Because of this, they require CPR and Wilderness First Aid as economic substitution trainings for wilderness trip leaders.

It's recommended that as part of the two to three week training period, the OS instructors spend time teaching and learning the necessary tripping skills on trail with their co-instructors and no program participants. "If it's your first year or your third year, it doesn't matter; you go on the same training trip. Because you may take a different role

in that training trip in that you might be teaching a little bit more. Your experience will be different but there's still a lot of knowledge you can give and receive by going on the trip…The training trip is anywhere between four and six days in that nine to eleven day staff training" (Stanley, 2012). Leave No Trace principles are among the skills that are recommended to be taught during a typical training trip.

Canoeing and lifeguarding certifications are viewed as helpful; however, they are skills that can be picked up from participating in other trainings or from practicing the skills in-house. We don't require American Canoe Association certifications for our staff, but I believe staff would be more effective at teaching canoeing if they had that training (Fyksen, 2012). We do in-house canoe training with any new staff that we have, because the skills are pretty easy to pick up (Rohe, 2012).

M. Environmental educators and teacher trainings.

Six trainings/certifications were identified as being potential options for all OS instructors to pursue if they want to enhance their knowledge regarding environmental education and teaching: 1) Leave No Trace training, 2) teacher certification, 3) *Project WILD* training, 4) *Project Learning Tree* training, 5) Master Naturalist certification, and 6) graduate level programs. These trainings are not required, but they can help OS instructors become more rounded and knowledgeable teachers of the natural world. Ideally, I'd like everyone to be trained in the *Project WET, WILD,* and *Learning Tree* as well as *Leave No Trace* (James, Coleman, & James, 2012).

N. Water trainings.

Four trainings/certifications were identified as being recommended for all OS instructors teaching water skills by the selected interviewees: 1) American Canoe

Association basic certification, 2) lifeguard certification, 3) small craft safety certification, and 4) Wilderness Water Safety certification. Depending on what outdoor skills an OS center provides will dictate what trainings are relevant for an OS instructor to take. Also, the rules, regulations, and protocols that each organization enforces will influence which trainings OS instructors need to take. "For any programs that are in or around water, we have to have one certified lifeguard with that group" (Rohe, 2012). Some OS centers are more relaxed than others. "We'll typically send counselors that are teaching paddling to the American Canoe Association, if we can, if that matches up with timing. If not, we just train them in-house" (Stanley, 2012).

O. Shooting trainings.

Three trainings/certifications were identified as being recommended for all OS instructors teaching shooting skills: 1) NRA training, 2) USA Archery certification, and 3) hunter safety certification. The OS programs an OS center offers to the public will influence the kinds of trainings they recommend their OS instructors to take. "I wish all the people who are teaching our firearm skills, I wish they were hunter safety instructor certified" (Fyksen, 2012). "All of our archery instructors will get the USA Archery certification" (Stanley, 2012).

P. OS facility certifications.

Three of the selected interviewees identified that their organization was American Camps Association (ACA) certified. Gaining this certification makes OS centers more credible in the eyes of the public. ACA is a great certification for summer camps and OS centers. However, it may not be ideal for EE centers to obtain. "I would say that the ACA would be a great foundation for an outdoor skills program, but it might not

necessarily be a great guiding, best-practices for an environmental education program" (Stanley, 2012).

Q. Rock climbing certifications.

A general training/certification class is recommended for OS instructors teaching rock climbing skills. There are many different trainings/certifications offered nationwide for rock wall training. No specific company or certification is recommended over another. However, it is recommended that all OS instructors who teach a rock wall program, receive proper training prior to teaching a rock wall program. "We have belaying procedure training for people to get checked off on. Being able to belay on a rock climbing wall is extremely important" (Rohe, 2012).

R. Additional trainings OS instructors may pursue.

Four additional trainings were identified by the selected interviewees as potentially being valuable to an OS instructor, depending on what their duties are: 1) AED training, 2) O2 training, 3) Chemical Immobilization certification, and 4) Wildfires certification. These are safety trainings that allow OS instructors to provide assistance to people and the landscape. OS, OE, and EE centers must decide if these trainings are appropriate for their OS instructors to complete on an individual basis.

AB. Reasons for not taking part in certain trainings.

30% of the selected interviewees admitted that they limit the amount of trainings or types of trainings their OS instructors and other staff members must complete for financial reasons. When money is a factor, OS, OE, and EE centers may limit the amount of trainings and certification some staff members may be required to obtain. "The reason we don't have certain trainings is because it's so expensive to get for our staff" (Fyksen,

2012). It's challenging to find the time in our schedules as well as the funding in our budget to offer every training to our staff that we'd want to (Rohe, 2012). Because seasonal staff members are most often short-term employees, it is more economically feasible to require full-time permanent staff members to complete expensive trainings instead of seasonal staff. It's best to certify a permanent staff member once every few years than to certify multiple seasonal employees every year.

Theme 12: All OS instructors should be required to complete some trainings before teaching an OS program or leading a trip.

J. Required trainings and certifications for all OS instructors.

Three trainings/certifications were identified as being required for all OS instructors by the selected interviewees: 1) CPR certified, 2) First Aid certified, and 3) a two to three week in-house training period. Regardless of the OS programs an OS instructor teaches, by having First Aid and CPR certifications, they will feel prepared for any emergency situation. "My personal feeling is if you're working with a group in an environmental, outdoor setting, CPR and First Aid certifications are important to have" (Meek, 2012). By going through a two to three week training period, OS instructors will gain a basic understanding of how to effectively teach the OS programs they'll have to teach to the public. "I've never had an intern that wasn't comfortable teaching a class after the two weeks of training" (Klawitter, 2012).

K. Required trainings and certifications for wilderness trip leaders.

Five trainings/certifications were identified as being required for all wilderness trip leaders by the selected interviewees: 1) Wilderness First Aid certification, 2) CPR certification, 3) First Aid certification, 4) a two to three week in-house training period,

and 5) Wilderness Water Safety certification. “As far as our outdoor camping, when the kids go up north to go camping, all of those counselors and directors that go up on that trip are certified in Wilderness First Aid” (Fyksen, 2012). “So for our staff, it is a requirement that if you’re taking kids out to the wilderness, that you need to have the Wilderness First Aid, lifeguarding, and the Wilderness Water Safety certification” (Stanley, 2012). The two to three week training session, again, is meant to help the wilderness trip leaders learn the hard and soft skills needed to successfully lead a wilderness trip.

III. Summary

The qualitative data that was collected from the ten semi-structure interviews yielded useful results. In Chapter Five, these results, accompanied by the information collected from the non-structured interviews with Treehaven’s OS program staff and executive director, will be discussed in greater detail. The qualitative results will be related to each objective, and recommendations will be made for how to construct Treehaven’s Best-Practices Outdoor Skills Curriculum Guide.

CHAPTER FIVE: CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

I. Introduction

The purpose of this study was to develop a Best-Practices Outdoor Skills Curriculum for UWSP-Treehaven. By interviewing ten selected OS, OE, and EE centers twelve themes became apparent. Those themes combined with the information gained from conducting non-formal in-person interviews with Treehaven's program staff and executive director have allowed the researcher to accomplish the five research objectives stated in chapter one:

1. To investigate selected outdoor skills centers to discover which outdoor skills programs are being taught and how they are being implemented throughout the country; and to determine which outdoor skills programs can be implemented at Treehaven.
2. To investigate how selected outdoor skills centers incorporate environmental education into outdoor skills programs.
3. To discover if outdoor skills centers align their outdoor skills programs and curricula with the *NAAEE Nonformal EE Programs: Guidelines to Excellence*, state academic standards, and/or national academic standards.
4. To investigate what trainings and certifications outdoor skills centers require their staff to have prior to teaching outdoor skills programs.
5. To develop an outdoor skills curriculum for Treehaven that has five outdoor skills program lesson plans included in it.

This chapter presents the conclusions, recommendations, and implications for each project objective.

II. Conclusions, Recommendations, and Implications Related to Objective 1: To investigate selected outdoor skills centers to discover which outdoor skills programs are being taught and how they are being implemented throughout the country; and to determine which outdoor skills programs can be implemented at UWSP-Treehaven.

A. Conclusions

After interviewing the ten selected OS, OE, and EE centers, the following outdoor skills programs were identified as being taught throughout the country: wilderness survival skills (debris shelters and fire building), archery (bows and arrows), shooting skills (BB guns and 22's), canoeing, kayaking, sailing, fishing, fly fishing, learn to hunt programs (deer and waterfowl), trapper education, animal tracking, map and compass skills, GPS and geocaching, snow shoeing, cross country skiing, outdoor cooking, backpacking, hiking, camping, birding, rock climbing, mountain biking, horseback riding, identifying wild edibles, and gardening.

Outdoor skills programs are being offered to the public in a variety of ways throughout the country (Theme 8). They are offered to K-12 school groups, K-12 students during summer camps, open to all (in the form of public programs), and open to family groups. OS, OE, and EE centers sort their audience members by age and/or skill level, depending on the program. They also alter the equipment used by each group to maximize the positive experiences and outcomes that every audience member can have. It is incredibly important that each audience member has a successful and safe experience

when they participate in any OS program. By modifying the equipment that is used for certain programs, an OS instructor can increase the chances that an audience member has a safe and successful experience. For example, when teaching an archery program, an OS instructor should have beginners and younger audience members use compound bows instead of recurve bows because they require less power to pull back.

The ten selected OS, OE, and EE centers that were interviewed identified the following programs as being strong programs they offer and programs that are most requested by school groups and the public: wilderness survival, snow shoeing (where applicable), cross country skiing (where applicable), rock wall climbing, canoeing, orienteering (map and compass), GPS geocaching, and archery. Treehaven program staff and the Executive Director identified the following OS programs as being desired to include in the Best-Practices Outdoor Skills Curriculum Guide: canoeing, fishing, fly fishing, learn to hunt deer program, orienteering (map and compass), GPS geocaching, biking, cross country skiing, snow shoeing, wilderness survival, and animal tracking.

B. Recommendations

It is recommended that the following OS programs are selected to be included into the Best-Practices Outdoor Skills Curriculum: canoeing, cross country skiing, snow shoeing, wilderness survival, and orienteering. These five have been selected because they were identified by the selected interviewees as being strong programs and frequently requested by school groups and the public. These five were also identified by Treehaven's program staff and the executive director as being needed programs for the organization. Additionally, Treehaven already owns most of the equipment needed to effectively teach these selected five outdoor skills. By developing lesson plans for the

outdoor skills that Treehaven already owns equipment for, this will keep the cost down for implementing these programs. There should be very little if any initial cost to begin offering these programs to the public. Sufficient data was also collected during the ten selected OS, OE, and EE semi-structured interviews and the non-structured interviews with Treehaven program staff and the executive director to make the selected five OS programs extremely well-developed and strong programs for multiple audiences.

It's recommended that the Best-Practices Outdoor Skills Curriculum developed for Treehaven targets three audience types; school groups, general public groups, and family groups. Treehaven has commitments with the University of Wisconsin-Stevens Point during the summer months. They host two six week academic summer sessions for undergraduate students. Because of this, Treehaven's program staff is unavailable to teach summer outdoor skills in a summer camp setting. The majority of Treehaven's outdoor skill programs are offered to the community during the school months (September-May). Treehaven has 4-12 grade school groups, adult retreat groups, and undergraduate weekend classes use their facilities throughout the school year. To accommodate the wide array of age and skill levels that visit Treehaven throughout the school year, it is recommended that each program included in the curriculum guide has extension/additional activities included in the lesson plans. This will allow the OS instructor(s) to adapt each OS program to best fit the needs of their audience.

C. Implications

With the Best-Practices Outdoor Skills Curriculum being developed, new program staff will be able to reference a reliable set of lesson plans to prepare them for teaching these five outdoor skills. This curriculum guide also creates a level of consistency. All

staff that reference the lesson plans included in it will teach very similar classes. This will ensure that each student, regardless of the OS instructor that teaches their class, will learn the same basic materials as any other student that is in a different group or a different school.

III. Conclusions, Recommendations, and Implications Related to Objective 2: To investigate how selected outdoor skills centers incorporate environmental education into outdoor skills programs.

A. Conclusions

While investigating how the selected OS, OE, and EE centers incorporate environmental education into their outdoor skills programs, surprising results were revealed. Environmental education is encouraged to be tied into all outdoor skills programs by the selected OS, OE, and EE centers. However, the selected OS, OE, and EE centers leave it strictly in the hands of the OS instructors to incorporate teachable EE moments into the OS programs they teach (Theme 7). EE is not a part of the OS lesson plans, but OS, OE, and EE centers want an EE component incorporated into all OS programs whenever they are appropriate. OS, OE, and EE centers do not want their OS instructors getting off topic during an OS program and solely focusing on EE. Instead the selected OS, OE, and EE centers want the OS instructors to search for teachable EE moments during an OS program. If one presents itself, OS instructors are encouraged to talk about it. If a teachable EE moment does not present itself, that is okay too.

The selected OS, OE, and EE centers acknowledged that some outdoor skills programs are easier to incorporate environmental education into than others. Outdoor skills that allow the participants to explore the landscape; i.e. canoeing, backpacking,

biking, snow shoeing, cross country skiing, and wilderness survival, have an easier time incorporating EE than outdoor skills that don't explore the landscape; i.e. archery and rifle shooting. *Leave No Trace* principles are easily tied into many outdoor skills and adventure skills; i.e. canoeing, backpacking, camping, wilderness survival, rock climbing, and biking. *Leave No Trace* principles are closely related to EE concepts and increasing environmental awareness with citizens. Therefore, they should be incorporated into outdoor skills programs when the opportunity presents itself to the OS instructor.

Because outdoor skills programs vary greatly in a wide array of areas; i.e. equipment used and terrain, it would be extremely hard to incorporate environmental education into all outdoor skills programs. The incorporation of EE into OS programs depends on three things, 1) the OS instructor's knowledge of EE, 2) the OS instructor's willingness to include an EE component if an opportunity arises, and 3) the appropriate opportunity to incorporate EE naturally comes up during the OS program. An appropriate opportunity to incorporate EE could be (but not limited to) when something unique is found or heard when moving around the landscape; i.e. a bird, a snake, or a mushroom, or when an audience member asks a question related to the environment or your current surroundings during a program.

B. Recommendations

It's recommended that EE is not included in the lesson plans of OS programs because the skills and concepts participants are learning in OS programs is valuable enough by itself. If EE was included in all lesson plans, then valuable time that participants would have to learn and work on various new outdoor skills would be lost. However, it is recommended that all OS instructors possess a basic background in natural

resources, natural science, environmental education, or a related field. Since it was found that OS instructors that are more informed about EE concepts are more comfortable incorporating EE into OS programs (Theme 4), it's recommended that all OS instructors possess a basic understanding of the ecosystems and landscapes they will be teaching in. OS instructors should not pass up opportunities to teach program participants about the natural world. With this said, OS instructors should remember that outdoor skills education should take priority in OS programs and environmental education should come second.

It should not be a requirement that OS instructors possess a college degree in a field related to natural resources. OS instructors can easily learn enough knowledge about the plants, animals, and ecosystems they will be teaching in via in-house training. It is recommended that all OS instructors receive basic natural resources, environmental education, and *Leave No Trace* training prior to teaching any outdoor skill. This makes OS instructors more knowledgeable about their surroundings and more comfortable including EE teaching moments into their outdoor skills programs.

C. Implications

The inclusion of EE into outdoor skills programs can only enhance an audience member's experience. OS instructors should actively include EE teachable moments during OS programs when they are appropriate (Theme 7). By doing so, OS instructors can increase the level of environmental awareness in their audience members and increase their level of environmental knowledge without taking anything away from the initial program that the audience signed up for.

IV. Conclusions, Recommendations, and Implications Related to Objective 3: To discover if outdoor skills centers align their outdoor skills programs and curricula with the *NAAEE Nonformal EE Programs: Guidelines to Excellence*, state academic standards, and/or national academic standards.

A. Conclusions

After interviewing the ten selected OS, OE, and EE centers, it was found that the majority (90%) of organizations that teach outdoor skills programs do not align their outdoor skills lesson plans or curriculum with the *NAAEE Nonformal Environmental Education Programs: Guidelines to Excellence*. It was even more surprising to find out that 30% of the selected OS, OE, and EE centers have never heard of the these guidelines prior to their interview. Since environmental education is a secondary goal when teaching outdoor skills programs, it makes sense that the *NAAEE Nonformal Environmental Education Programs: Guidelines to Excellence* would not be followed closely when teaching or developing outdoor skills lesson plans and curriculum.

In order for school groups to visit an OS, OE, or EE center, that center's programs and curricula must be aligned with state or federal academic standards. For this reason, most OS, OE, and EE centers have correlated or are currently correlating their outdoor skills programs with state and/or federal academic standards.

B. Recommendations

It is recommended that Treehaven does not align their outdoor skills programs and curriculum with the *NAAEE Nonformal Environmental Education Programs:*

Guidelines to Excellence. However, it is recommended that the Best-Practices Outdoor Skills Curriculum be aligned with the State of Wisconsin Academic Standards, or the *Wisconsin Department of Public Instruction* (DPI) standards. Before a school visits an OS, OE, or EE center, they must first make sure that the trip is going to include a set level of academic content. To make it easier for schools to visit Treehaven, their OS programs should follow the DPI academic standards as well. This way teachers, principals, and school boards will instantly be able to identify the academic benefits students will gain from visiting Treehaven and participating in one or many OS programs.

C. Implications

Aligning the Best-Practices Outdoor Skills Curriculum with the Wisconsin DPI academic standards provides benefits to Treehaven, schools, and OS program participants. Treehaven will be more marketable to school districts throughout Wisconsin because their OS programs will address the academic standards that teachers must meet. School teachers will be more open to the idea of visiting Treehaven once they have proof that their students will be learning valuable information and skills by visiting Treehaven. Treehaven may attract more schools to their facilities after they successfully align their OS programs with the DPI standards as well. All program participants will also benefit from the alignment of state standards with the Best-Practices Outdoor Skills Curriculum. No matter who the OS instructor is that teaches their program, they will have a level of consistency with their classmates in different groups who have different OS instructors. Regardless of the group or the instructor, the same academic standards will be addressed.

Aligning the Best-Practices Outdoor Skills Curriculum with the Wisconsin DPI academic standards provides benefits to all groups, whether Treehaven offers programing to family groups, the public, adult groups, or school groups. The alignment ensures that program participants will learn academic content, in addition to the outdoor skills they are learning.

V. Conclusions, Recommendations, and Implications Related to Objective 4: To investigate what trainings and certifications outdoor skills centers require their staff to have prior to teaching outdoor skills programs.

A. Conclusions

There are several unique trainings and certification classes OS instructors can participate in. Trainings and certifications revealed by the ten selected interviewees include: CPR certification, First Aid certification, AED training, Wilderness First Aid certification, Wilderness First Responder certification, Camp Marksmanship training, NRA Instruction training, lifeguard certification, hunter's safety certification, teacher certification, *Project WILD* training, *Project Learning Tree* training, *Project WET* training, NOLS training, small craft safety certification, American Canoe Association certifications, rock climbing training, Wilderness Water Safety certification, and Master Naturalist certification. OS instructors can also be trained in-house by their organization. OS instructors can go through a two-three week training period where they learn how to teach the OS programs they will be teaching. They can also go on training trips and learn the hard skills first-hand, so they have a better idea on how to perform the outdoor skills they are teaching.

It would be incredibly difficult and time consuming to ask all OS instructors to complete all of the trainings and certifications listed above. For this reason, a specified list of required trainings and certifications that all OS instructors should complete was identified by the selected ten interviewees. The required trainings and certifications that all OS instructors should complete are as follows: 1) CPR certification, 2) First Aid certification, 3) Wilderness First Aid certification, 4) a two week in-house training period, and 5) Wilderness Water Safety certification (if an OS instructor is going to be teaching an OS program around an aquatic environment) (Theme 12).

All other trainings and certifications should not be required by OS instructors to complete. However, individual OS, OE, and EE centers can make certain trainings and certifications required or recommended for their OS staff to complete if they deem it necessary. Required and recommended trainings by individual OS, OE, and EE centers should directly relate to the OS programs that the OS instructors will be teaching. For example, if an OS instructor is going to be teaching canoeing, kayaking, and fishing programs, it may be required that they have to obtain their Wilderness Water Safety and American Canoe Association: Level 1 Tandem Canoeing certifications. It may be recommended that they complete lifeguard certification and *Project WET* training. However, they should not have to go through NRA Instruction training, because they will not be teaching any gun-related OS programs.

B. Recommendations

It is recommended that all of the Treehaven program staff that teach outdoor skills complete the five required trainings and certifications identified by the ten selected interviewees prior to teaching an outdoor skills program. Those trainings are: 1) CPR

certification, 2) First Aid certification, 3) Wilderness First Aid certification, 4) a two week in-house training period, and 5) Wilderness Water Safety certification (if an OS instructor is going to be teaching an OS program around an aquatic environment). It is also recommended that Treehaven program staff and the executive director look into other trainings and certifications that are relevant to the five outdoor skills included in the Best-Practices Outdoor Skills Curriculum. Trainings and certifications that may become required or recommended depending on how the individual organization (Treehaven) feels include: 1) *Leave No Trace* principles training, 2) American Canoe Association Level 1: Introduction to Canoeing Tandem, 3) lifeguard certification, and 4) a multiple day training trip where all of the staff get to learn how to perform the required hard skills they will be teaching.

C. Implications

By having all of Treehaven's OS instructors complete the five required trainings and certifications, they will be more prepared in the case of an emergency during their program. By having them complete specific trainings and certifications related to the hard skills they will be teaching in their OS programs, they will become more confident and comfortable teaching those specific skills. Having OS instructors that are well-prepared for emergency situations, well-versed in the outdoor skills they are teaching, and confident in teaching those skills to others, makes for a terrific learning environment. Program participants will be in a more controlled and safe environment because of the well-trained OS instructor. This will enable them to master the new outdoor skills in a short amount of time.

VI. Conclusions, Recommendations, and Implications Related to Objective 5: To develop an outdoor skills curriculum for Treehaven that has five outdoor skills program lesson plans included in it.

A. Conclusions

Considering Treehaven's landscape, funds, and equipment, the five outdoor skills programs that should be included into their Best-Practices Outdoor Skills Curriculum are: 1) Wilderness Survival, 2) Orienteering (map and compass use), 3) Canoeing, 4) Snow Shoeing, and 5) Cross Country Skiing.

B. Recommendations

It is recommended that each lesson plan included in Treehaven's Best-Practices Outdoor Skills Curriculum contains extension activities and extra activities that OS instructors can substitute in and out of their program to best meet the needs of their audience members. It is also recommended that each lesson plan included in Treehaven's Best-Practices Outdoor Skills Curriculum is aligned with the Wisconsin DPI academic standards. By doing so, school teachers will be able to justify to their principals and school board why a field trip to Treehaven will benefit their students.

C. Implications

By developing these five outdoor skills programs and by making them adaptable to various skill and age levels, Treehaven will be able to use the Best-Practices Outdoor Skills Curriculum immediately. OS instructors will also be able to address the needs of their audience by adding and removing certain activities included in each OS lesson plan.

VII. Further Implications and Recommendations

It should be recognized that the Best-Practices Outdoor Skills Curriculum Guide that was developed for this graduate project was specifically designed for the purposes of UWSP-Treehaven. Factors such as equipment owned by Treehaven, Treehaven's physical property features, and OS programs desired by Treehaven program staff and the executive director were all taken into consideration when designing this curriculum, in addition to the data collected by the ten semi-structured interviews with OS, OE, and EE centers. The themes that are reported in the results section (Chapter 4) can be applied to any OS, OE, or EE center in the country that wants to develop a Best-Practices Outdoor Skills Curriculum for their own organization. However, the OS programs that are included in another organization's Best-Practices Outdoor Skills Curriculum Guide could vary from Treehaven's. Factors that can contribute to variations between outdoor skills curricula include an organization's mission statement, location, equipment, property features, and the desires or the needs identified by the program staff at each organization.

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LIST OF APPENDICES

Appendix A

UWSP-Treehaven

Best-Practices Outdoor Skills Curriculum

By

Christopher Stephen Homeister

May 2013

Canoeing Lesson Plan

Goals/Learner Outcomes *(What concepts, attitudes, knowledge, or skills will the students gain as a result of this lesson that will be of use to them in the real world?)*

Upon completion of this lesson, the students will. . .

- Be able to name all the parts of a canoe and a canoe paddle.
- Feel safe and comfortable wearing a personal floatation device (PFD) in water that's deeper than they are tall.
- Be able to successfully demonstrate five basic canoe strokes: draw stroke, pry, J-stroke, forward stroke and, backward stroke.
- Attempt to switch places in a canoe (bow to stern and/or stern to bow).
- Be able to successfully complete a T-rescue.
- Be able to demonstrate proper canoe portaging techniques.

What national standards and school-wide learning goals (or organizational mission/goals) does this address?

***Wisconsin Department of Instruction*-Standards for Physical Education:**

- 1:2:A5 Balances while moving in control through locomotor and non-locomotor skills.
- 1:3:A6 Demonstrates correct balance techniques (e.g., static and dynamic) in a variety of activities (yoga, Pilates, gymnastics, cooperative activities, etc.).
- 1:4:A4 Operates a bike, kayak, or canoe safely and skillfully in a natural environment.
- 1:4:A5 Demonstrates proficiency in two movement forms in individual and lifetime activities.
- 1:4:A8 Acquires skills to participate in a lifetime activity outside of school.
- 2:2:A3 Identifies and demonstrates key elements of skill being taught.
- 3:1:A1 Engages in moderate to vigorous physical activity on an intermittent basis.
- 3:1:A2 Participates in a variety of physical activities outside of school, with and without objects.
- 3:1:A3 Participates in a variety of non-structured and minimally-organized physical activities outside of physical education.
- 3:2:A2 Chooses to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.
- 3:2:A3 Chooses to participate in structured and purposeful activity.
- 3:4:A1 Participates willingly in a variety of physical activities appropriate for maintaining or enhancing a healthy, active lifestyle.
- 5:1:A3 Uses safety procedures.
- 5:3:B4 Demonstrates positive social interaction while in a physical activity setting (e.g., the student gives another student a high five after making a great shot in basketball).
- 5:3:B6 Demonstrates cooperation skills needed to accomplish group/team goals in both cooperative and competitive activities.
- 6:1:A3 Participates even when not successful.
- 6:4:A1 Participates in activity outside of school for self-enjoyment.

Lesson Objectives *(What concepts, attitudes, knowledge, or skills will the students demonstrate as a result of this lesson?)*

- Students will be able to demonstrate that they know how to properly navigate using a canoe.
- Students will be able to demonstrate that they know how perform a T-rescue.
- Students will be able to demonstrate that they know how to safely portage a canoe.

Lesson Assessment (*How will you know what concepts, attitudes, knowledge, or skills the students learned and to what extent the students learned what you taught? How will you give them feedback?)*

- At the beginning of class, the instructor will give a quick tutorial on the parts of a canoe and the parts of a canoe paddle. Students' knowledge gained from this tutorial will be assessed throughout the lesson as the instructor shouts out different canoeing commands for the students to follow.
- During the canoeing part of the lesson, the instructor will monitor all of the students and determine if each participant is learning the basic strokes needed to successfully navigate a canoe. The instructor will provide individual assistance wherever it's deemed necessary.
- All students will take turns swamping their canoes. Groups of two canoes and four to six students will have to work together to successfully perform two T-rescues (each canoe, one time). All students will have to get back into the canoe (with or without the assistance of others) as well.
- With the help of the instructor and fellow students, each student will pick up and portage a canoe from the water's edge to the canoe trailer, demonstrating proper portaging techniques the entire way.

Lesson Location and Required Materials:

Location:

Treehaven: Dragonfly Pond

Materials:

1. Canoes for all students
2. Paddles for all students
3. PFD's for all students
4. 4 Buoys (optional)
5. Whistle for the instructor to have at all times on the water.

Theme for this lesson/activity: Canoeing
Introduction (Grabber or hook) Using canoes to explore the landscape. (Estimated Time: 5 minutes) Have you ever wanted to explore the landscape and find new and exciting things? Today

we are going to learn how to successfully maneuver a canoe through the water so you can explore a lake or a river in a safe way and discover new and exciting things.

Link to Body: Before we jump in the canoes and start paddling, we must first become familiar with the equipment we are about to use.

Body (include learning preferences, teaching methods)
Subthemes (main points)/individual activities:

Part 1: The parts of a canoe and canoe paddle. (Estimated Time: 20 minutes)

Have the students gather around a canoe and go over all of the parts that make up a canoe: 1) Keel Line, 2) Gunwales, 3) Seats, 4) Thwarts, 5) Portage Yoke, 6) End Deck, 7) Bow, and 8) Stern.

*****Reference the American Canoe Association worksheet "Equipment and Nomenclature" included in this lesson plan.** (American Canoe Association, 1996)*******

When discussing the parts of a canoe, the instructor should first walk through and point to all of the parts of the canoe. This way the students will be able to see firsthand where each part of the canoe is located.

Next, put the students' minds to the test. Tell the students that you are going to call out a part of a canoe and the students must all put a hand or foot on that part of the canoe. The instructor should then name off all of the parts of a canoe in random order (try to make the students run the full length of the canoe a couple times). When the students feel comfortable with this new information, move onto the canoe paddles.

Have each student grab a canoe paddle, find a partner, and face the instructor. The instructor will then show the students all of the different parts of a canoe paddle: 1) Blade, 2) Tip, 3) Grip, 4) Shaft, 5) Throat, 6) Powerface, and 7) Backface.

*****Reference the American Canoe Association worksheet "Equipment and Nomenclature" included in this lesson plan** (American Canoe Association, 1996)*******

Next, put the students' minds to the test again. Have the students pair up with their partner and have each partner set stand about 5-8ft away from each other, facing each other. Also have one student from each partner set put down their paddle. This activity requires one paddle per partner set. The instructor is then going to shout out a part of a canoe paddle. When this happens, the students holding the paddle are going to gently throw their paddle to their partner. It is their partner's duty to catch the paddle on the part of the paddle that was called out by the instructor. The instructor should call out each part of the canoe paddle at least twice, and the instructor should monitor where each student catches their paddle.

(If a student catches a paddle in a canoe paddle part that was not called out by the instructor, most likely it's because of a bad throw. The instructor should still ask each

student to point to the correct canoe paddle part that was called out.)

Part 2: Personal Floatation Device (PFD) Test (Extension Activity-Estimated Time: 10 minutes)

*****This activity should only be done when the weather is warm. Air and water temperature totals are above 120° F. This activity should also not be done on rivers because students could slowly drift downstream from the group.*****

Because everyone has a different comfort level around bodies of water, it's important to reinforce within your audience members that they are going to be safe during their time canoeing on the lake. Have each student put on a PFD and teach the students how to size them correctly. Show them that a PFD should fit snug around your body. It should not be loose. Have the students check their partner's PFD and provide their partner with assistance putting it on if needed.

Even though PFD's are supposed to fit tightly around each person, they should not be so tight that the people wearing them can't breathe. Teach the students the "two fingers rule." On each side of the PFD, someone should be able to slide two fingers between the PFD and the person.

After all students have been properly fitted into their PFD, walk the students out into the lake. Have them bob around in the water for 3-5 minutes, making sure that the water is deep enough so that no students can touch the bottom.

This activity will build confidence within the students that are fearful of water, swimming, or drowning. They will be able to see that the PFD is going to keep them safe, even if they capsize their canoe. Additionally, by having all of the students participate in this activity, no one has to admit that they are scared of the water.

Part 3: Canoeing and Basic Canoe Strokes (Estimated Time: 30-60 minutes)

Help all of the students get into their canoes. It's recommended that the instructor has their own canoe (or kayak) so that they can quickly reach other canoes to provide guidance to the students. This is not required though.

When all of the students are in their canoes, teach them how to perform a forward stroke. Inform the group that within each canoe, there should be one person paddling on the right side and one person paddling on the left side. If both people in a canoe are paddling on the same side, the canoe can become off balance and might tip. Have the students follow the instructor to a spot in the middle of the lake using a forward stroke. When the instructor finds a nice area to test everyone's skills, the instructor should stop the students on the water and teach them more basic canoeing strokes and facts.

The instructor should inform the students that the person in the stern is the person that is supposed to do the majority of the steering of the canoe. The person in the bow is

supposed to provide the power to move the canoe forward. (Students will be able to switch positions later on if they would like to or if the instructor would like them to practice switching positions.)

The instructor should then demonstrate some basic canoeing strokes to the students: 1) Draw Stroke, 2) Pry Stroke, 3) J-Stroke, 4) Forward Stroke, and 5) Back Stroke.

Reference the article, *Different Strokes for Canoeing Folks* included in this lesson plan** (Berger, 2012)

The instructor should then set up a small area using landmarks on the shore or buoys in the water for the students to practice maneuvering their canoe in. The instructor should monitor students' abilities and skill level for 10-20 minutes. During this timeframe, the instructor should provide the students with helpful feedback to improve their canoeing skills. The instructor can also allow students to try to switch positions in their canoes at this time.

After the students skills have been assessed, depending on the size of the lake and the age of the students, the instructor can either lead the students around the lake together as one large group, or the instructor can allow the students to explore on their own.

Note: if the instructor allows the students to explore on their own, the instructor should inform the class that when he/she blows the whistle, everyone will have to head back to a predetermined area; i.e. the boat dock or the square of buoys.

During this time, the instructor should continue to paddle around the lake, always being vigilant of all of the students. If a canoe tips over, the instructor should canoe over to their position and provide assistance. It is up to the instructor if they want to blow the whistle and have everyone return to a predetermined area if a canoe tips over.

Part 4: Switching Positions in a Canoe (Extension Activity-Estimated Time: 15-20 minutes)

The Instructor should explain the following:

When switching positions in a canoe, it's vital that a person keeps three points of contact with the canoe at all times and has their center of gravity low. Three points of contact can be two hands and one foot or two feet and one hand. When there are two people in a canoe, it doesn't matter who moves first or second, providing that the following steps are taken:

1. Decide between the two people in the canoe, who is going to move to the center of the canoe first. When this is decided, move to Step #2.
2. Each person should lay their paddle down in the canoe. Both students will pick up their paddles when they are done switching positions in the canoe.
3. The person that is not moving should sit in their seat (either the bow or stern) and

brace the gunwales to prevent the canoe from shaking when the person that is moving starts making their way to the amidships (center of the canoe).

4. When the person starts moving, remember to keep three points of contact with the canoe at all times and keep your center of gravity low (crouch your body, don't stand all the way up).
5. When the first person reaches the amidships area of the canoe, the second person should then start moving towards the amidships, too. The person that is already at the amidships should sit down on the bottom of the canoe and brace the gunwales to support the person that is currently moving.
6. The person that is moving to the amidships second should move all the way past the first person, while keeping three points of contact the entire time and keeping a low center of gravity. They should then sit in the seat of their new position (bow or stern) and brace the gunwales to assist in balancing the canoe for the other person.
7. The person that was sitting in the amidships position should now move towards their new position (bow or stern) and sit down in the seat.
8. The two people should then grab their paddles that have been laying on the bottom of the canoe and continue paddling.

Part 5: T-Rescues (Extension Activity-Estimated Time:15-30 Minutes)

The instructor should gather all of the students into a centralized area where the instructor's canoe and one other canoe are in the middle of the circle of canoes. The instructor(s) canoe will first demonstrate how to perform a T-Rescue with the assistance of a rescue canoe (a pair of students' canoe).

The instructor should explain verbally what a T-Rescue is and then find another canoe with two students in it to help demonstrate the skills. The instructor(s) will then flip their canoe on purpose and demonstrate the steps needed to successfully complete a T-Rescue. Follow the instructions listed at the reference below:

*****Reference the American Canoe Association Safety and Rescue material pg. 29 "Boat over Boat Rescue" included in this lesson plan** (American Canoe Association, 1996)*******

After the instructor has successfully demonstrated a T-Rescue, have the students partner up into groups of four students and two canoes. Have the students take turns performing T-Rescues. Each student should have the opportunity to play the role of a capsized canoe and a rescue canoe.

Conclusion (Estimated Time: 5 minutes)
How will you wrap up the lesson/activity?
Part 6: Portaging a Canoe (Extension Activity for Ages 12 and Up-Estimated Time: 10-20 minutes)

Once the canoes have reached the lakeshore and the canoeing activity is over, the instructor should teach the students the proper way to portage a canoe back to the canoe trailer or canoe storage areas. Gather all of the students around a canoe and ask for a volunteer to help you demonstrate two portaging techniques: 1) Lifting the Canoe and Overhead Carry, and 2) Two-Person Carry.

*****Reference the American Canoe Association Transporting, Carrying, Launching, and Boarding materials pg. 13 *"Lifting the Canoe and Overhead Carry,* and *Two-Person Carry"* included in this lesson plan** (American Canoe Association, 1996)*******

Allow the students to decide within their partner groups which technique they would like to try and have each group carry their canoe back to the trailer or canoe rack. Students can either leave the canoes by the canoe racks or trailer, or they can help the instructor load the canoes onto the canoe racks.

Part 7: Wrap-up

After all of the canoes are back on shore or on the canoe racks, the instructor should congratulate all of the students. Ask the students if they have any questions about canoeing, the parts of a canoe, how to perform T-Rescues, portage a canoe, or switch positions in a canoe.

Inclement Weather Back-up Plan:

N/A. Canoeing is an outside activity and must be performed on a lake, river, or stream.

References:
American Canoe Association. (1996). *Introduction to paddling: Canoeing basics for lakes and rivers.* Birmingham, AL: Menasha Ridge Press.
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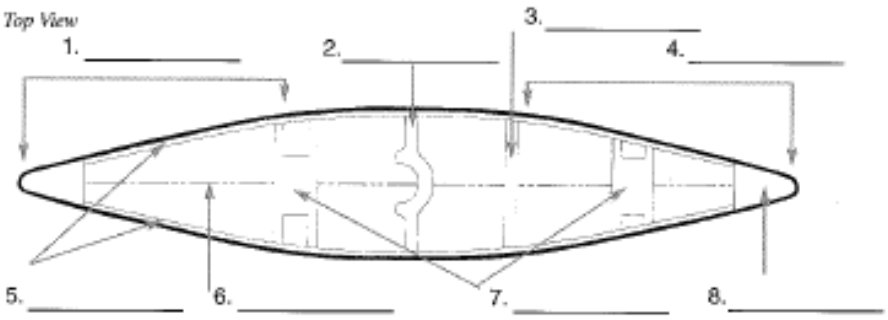
Equipment and Nomenclature

Canoe Parts and Terminology

Label each part of the canoe with the appropriate term (answers on page 12).

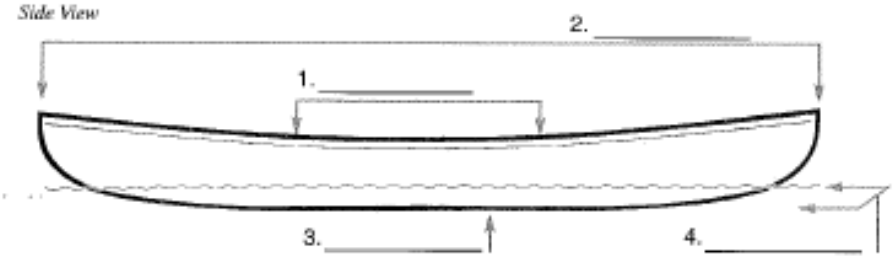
Top View



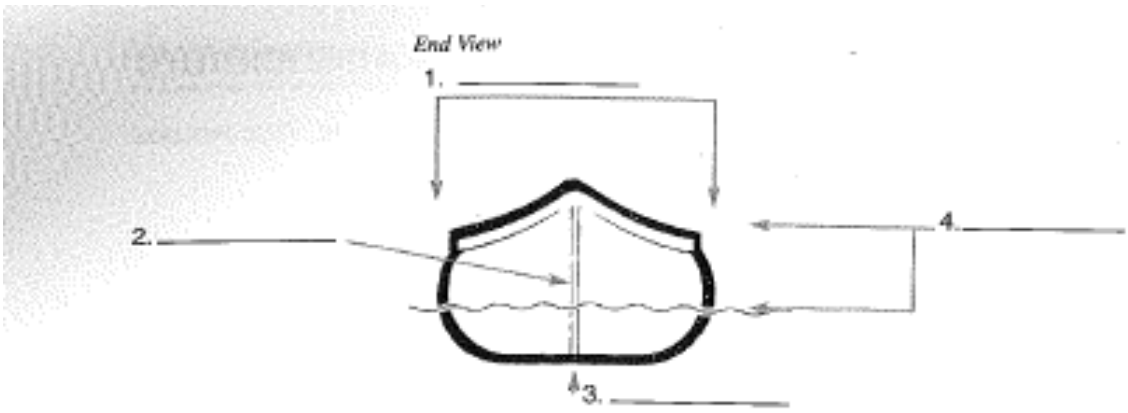
A. Keel Line. A real or imaginary line from end to end down the center of the canoe.
B. Gunwales (pronounced gunnel)/Rails. Reinforcing material along top edges of the sides of the boat.
C. Seats. Used for kneeling support or seating and located at bow and stern for tandem paddlers, center for solo paddlers.
D. Thwarts. Gunwale to gunwale (rail to rail) cross braces.
E. Portage Yoke. A shoulder rest to aid in canoe portaging.
F. End Deck. Triangular reinforcement at the bow and stern.
G. Bow. The front or forward part of the boat.
H. Stern. The back portion of the boat.

Quick, which direction do paddlers face when paddling the boat above? Hint: Think about where your feet go if you decide to sit instead of kneel. With this hint in mind, you'll always be able to decide which end is the bow and which end is the stern.

Side View



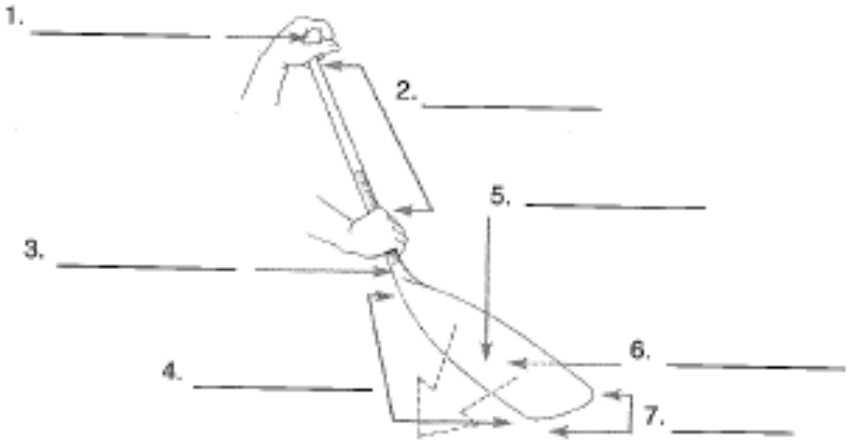
A. Length. Longitudinal measurement from end to end.
B. Draft. The vertical distance from the bottom of the boat to the waterline.
C. Keel Line. The longitudinal centerline of the canoe.
D. Amidships. Midsection of the boat, between the bow and stern.



A. STEM. Bow or stern vertical edge of the canoe.
B. BEAM. Width of the canoe at amidships.
C. FREEBOARD. The vertical distance from water to the lowest point along the gunwale.
D. KEEL LINE. The longitudinal center line of the canoe.

PADDLE PARTS

Label each part of this bent paddle.



A. BLADE. The flat section of the paddle which moves through the water.
B TIP. The blade's bottom edge
C. GRIP. The control handle shaped to fit the paddler's top hand.
D. SHAFT. The section of paddle between the blade and grip.
E. THROAT. The junction between blade and shaft.
F. POWERFACE. The side of the blade catching the water during a forward stroke.
G. BACKFACE. The other side of the blade.

10

Different Strokes for Canoeing Folks

By Karen Berger
Illustrations by Topdog Illustration

Once you've mastered these five basic canoeing maneuvers, you'll be able to navigate flat-water lakes and gently flowing rivers.

Paddling a canoe has a gentle learning curve: The basic strokes aren't difficult, but knowing them will make the experience go more smoothly—including your return to shore at the end of a long day.

In most instances, bow (front) and stern (rear) canoe partners should always paddle on opposite sides of the boat. If you're paddling on the right side, place your left hand on top of the paddle (grip hand); the right hand holds the shaft (shaft hand). To paddle on the other side, switch hand positions so that the right hand holds the paddle grip and the left hand is on the shaft.

On flat water, the most comfortable position in the boat is to sit. However, in fast-moving water or rapids, canoeists should kneel in their boats (on a cushion of some sort) to lower their center of gravity and increase the canoe's stability.

While one person can paddle a canoe solo, canoeing is much easier with two. Two paddlers create more propulsion and don't have to compensate for the fact that paddling on one side only causes the canoe to turn. The stronger paddler should sit in the stern.

The Draw Stroke

Sometimes called the "pull-to," the draw stroke is used to change the direction of the canoe. It can also be used to move the canoe sideways, such as when you're pulling alongside a dock. Reach out as far as possible with the shaft hand and place the paddle into the water. Then push your gripping hand outward while pulling your shaft hand inward; this creates leverage and moves the canoe in the direction of your paddling side.

The Pry Stroke

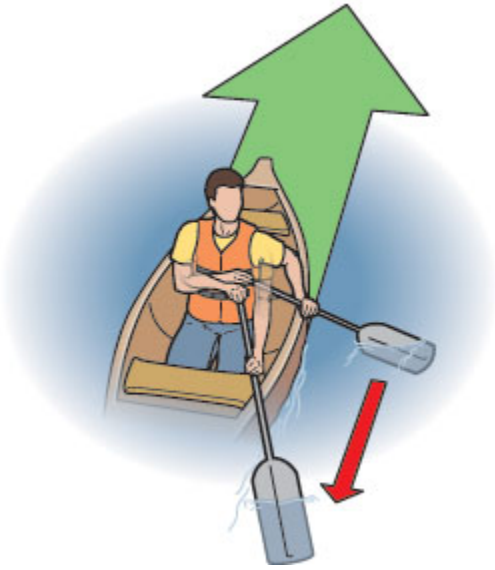
This is the opposite of the draw stroke. It's used to push the canoe away from the paddling side. Place the blade in the water parallel to the boat; it should be as close to the canoe as possible, even tilted a bit so it's almost underneath the boat. Your gripping hand should be out over the water as far as you can reach. Pull in with the grip hand while pushing out with the shaft hand.

The J-Stroke

This is a forward stroke with a hook on the end. It is most often used by solo paddlers and by stern paddlers who are stronger than their partners. Its purpose is to compensate for the canoe's tendency to turn during the simple forward stroke. It does not replace the forward stroke but instead supplements it when necessary. The J-stroke is so-named because it traces a letter "J" in the water when done on the port (left) side of the boat. Begin as you would for a forward stroke, but when the paddle blade crosses to the back of your body, twist the shaft so that the blade turns outward. On the port side, this means turning the blade clockwise. Reverse the motion for paddling on the starboard (right) side.

The Forward Stroke

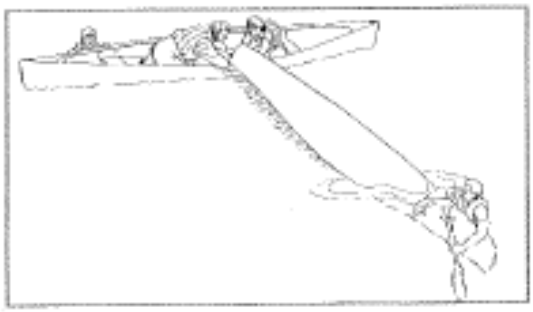
Reach forward with both the shaft and grip hands and place the paddle in the water. Then simply draw it straight back with the face of the blade perpendicular to the water, twisting your torso through the stroke. When you withdraw the paddle from the water for the next stroke, "feather" it (swinging the blade forward, flat above the water's surface) to reduce wind resistance. When equally matched, the bow and stern paddlers can act in rhythm with each other, each staying on opposite sides of the canoe until tired. Then switch sides.



The Back Stroke

This is the reverse of the forward stroke. Simply reach back with both hands and place the paddle in the water to the rear of your body. Then pull forward, with the flat side of the blade perpendicular to the canoe. Feather the blade as you reach back for another stroke. The backward stroke is used to stop the canoe when you already have forward momentum or slow it in moving water. If used by the bow paddler on one side of the boat while the stern paddler uses the forward stroke on the other side, it can be used to pivot the boat.

Karen Berger is the author of Backpacking and Hiking *(BSA No. 34354, $20). Visit her Web site at* www.hikerwriter.com.



In open water with a second canoe to assist as a rescue boat, a boat over boat rescue is quick and very effective. Assume a tandem boat has capsized:

Capsized paddler #1 holds onto the end of the rescue canoe. Capsized paddler #2 helps line the capsized boat up perpendicular to the rescue boat forming a "T," and remains in the position at the bottom of the "T." The rescuers at the top of the "T" hold onto the capsized boat's end allowing capsized paddler #2 (bottom of the "T") to push down on the boat and break the vacuum. This action raises the end near the rescue boat up and out of the water. With capsizes involving lightweight people, more than one person may be needed to push down on the end of the boat.

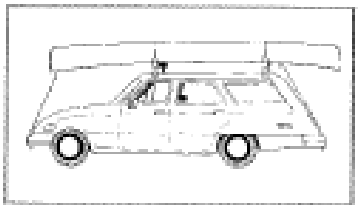
Keeping the boat upside down, the rescuers pull the boat up and across their craft until it balances on their gunwales forming an "+". Be careful not to pinch fingers between the two boats. The capsized paddlers should keep hold of the canoe as it is pulled in, and move to a stabilizing position on the rescue boat.

The rescuers allow the boat to drain, then flip it upright position while continuing to balance it across both gunwales.

The rescuers slide the canoe into the water without losing contact. They stabilize the craft, gunwale to gunwale, with their own boat. The capsized paddlers re-enter with either a deep water re-entry or a rescue sling entry.

Transporting, Carrying, Launching and Boarding

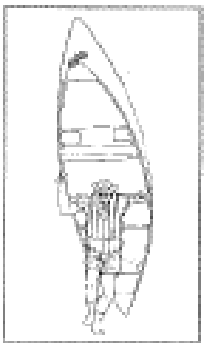
Tie Down for Transportation



Canoes should be secured amidships to cartop carriers (racks) and both bow and stern tied to the vehicle's bumpers. Use two cross ropes or straps for the racks and canoe ends; secure ropes to bumpers or another solid part of your vehicle to form a "V" (bumper to bow/stern to bumper). Make sure the racks are secure and both the vehicle and racks are sturdy enough for the load.

It is recommended that you use straps made of high strength nylon webbing and strong buckles. If ropes are used, use proper knots such as the "truckers hitch," "half hitches," and "bowline." (See the ACA publication *Knots for Paddlers.*) Avoid the use of bungee or elastic cords. They may allow the boat to shift and fall off the car at highway speeds.

Lifting the Canoe and the Overhead Carry

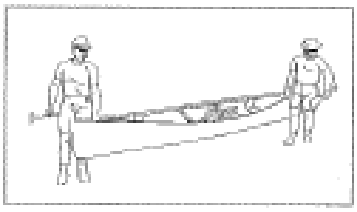


With the canoe on the ground, bend at the knees and grasp the near gunwale on either side of the center. Lift the canoe with both legs until the bottom rests on both thighs. Reach to the far gunwale/rail with one hand. With a backwards, rocking motion, bounce the canoe upwards while pulling it over the head, comfortably adjusting the hands. Rest the portage yoke or center seat on the back of the neck and across the shoulders. If the canoe is too heavy to lift, the load can be reduced by leaving one end on the ground while you roll the other end overhead.

One Shoulder Carry

Lightweight solo canoes can be carried short distances, stern forward, with the center point of one gunwale resting on a shoulder, the supporting arm grasping the center seat for control. The lift is similar to lifting the canoe onto one's shoulders, but the canoe isn't rolled as far.

Two-Person Carry



With a person on opposite sides, canoes can be carried upright by grasping under the boat's end, or by holding the grab handles or end dock.

Cross Country Skiing Lesson Plan

Goals/Learner Outcomes *(What concepts, attitudes, knowledge, or skills will the students gain as a result of this lesson that will be of use to them in the real world?)*

Upon completion of this lesson, the students will. . .

- Be able to properly equip themselves with the correct size cross country skis, poles, and boots.
- Be able to successfully cross country ski on flat terrain.
- Gain experience going uphill and downhill on cross country skis.
- Be able to feel more comfortable and confident performing cross country skiing in the future.

What national standards and school-wide learning goals (or organizational mission/goals) does this address?

***Wisconsin Department of Instruction*-Standards for Physical Education:**

- 1:2:A5 Balances while moving in control through locomotor and non-locomotor skills.
- 1:3:A6 Demonstrates correct balance techniques (e.g., static and dynamic) in a variety of activities (yoga, Pilates, gymnastics, cooperative activities, etc.).
- 1:4:A5 Demonstrates proficiency in two movement forms in individual and lifetime activities.
- 1:4:A6 Demonstrates skills for starting, stopping, falling, and turning while participating in lifetime activities such as inline skating, cross-country skiing, biking, etc.
- 1:4:A8 Acquires skills to participate in a lifetime activity outside of school.
- 2:2:A3 Identifies and demonstrates key elements of skill being taught.
- 2:2:A4 Explains the necessity of transferring weight in skills.
- 3:1:A1 Engages in moderate to vigorous physical activity on an intermittent basis.
- 3:1:A2 Participates in a variety of physical activities outside of school, with and without objects.
- 3:1:A3 Participates in a variety of non-structured and minimally-organized physical activities outside of physical education.
- 3:2:A2 Chooses to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.
- 3:2:A3 Chooses to participate in structured and purposeful activity.
- 3:4:A1 Participates willingly in a variety of physical activities appropriate for maintaining or enhancing a healthy, active lifestyle.
- 4:3:B1 Participates in activities designed to improve or maintain all health-related fitness components both during and outside of school.
- 5:2:A3 Demonstrates safe control of body and equipment.
- 6:1:A3 Participates even when not successful.
- 6:4:A1 Participates in activity outside of school for self-enjoyment.

Lesson Objectives *(What concepts, attitudes, knowledge, or skills will the students demonstrate as a result of this lesson?)*

- Students will demonstrate the proper way to size up cross country skiing equipment.

- Students will be able to demonstrate proper cross country skiing techniques including: 1) proper kicking motion, 2) holding an athletic stance, 3) moving on flat terrain, 4) basic climbing techniques, and 5) basic descending techniques.

Lesson Assessment (*How will you know what concepts, attitudes, knowledge, or skills the students learned and to what extent the students learned what you taught? How will you give them feedback?)*

- The instructor will continually monitor all of the students during this lesson. When the students are selecting the proper size cross country ski poles, boots, and skis to use, the instructor will assist the students and demonstrate the techniques students can use to size up their own equipment.
- Throughout the lesson, the instructor will continually demonstrate proper skiing techniques and then have the students perform the techniques that were just demonstrated. Skiing techniques that will be demonstrated by the instructor include: 1) athletic stance, 2) kicking motion, 3) diagonal stride, 4) basic climbing technique, 5) basic descending technique, and 6) how to get up after you've fallen down, without taking your skis off.

Lesson Location and Required Materials:

Location:

Treehaven: Start this lesson in the Treehaven Lodge. Teach the students how to properly size their own equipment and have them pick their equipment out. Do the rest of the introduction in the lodge and then head to the "beginner cross country ski area." If the students are showing success in the beginner ski area, then the instructor can lead them onto the cross country ski trails around Treehaven.

Materials:

1. Cross Country Skis for all students participating in the lesson
2. Cross Country Ski Boots for all students participating in the lesson
3. Cross Country Ski Poles for all students participating in the lesson
4. Whistle for the instructor to carry if he/she needs to get the attention of all of the students.
5. Scale for measuring a person's weight.

Theme for this lesson/activity: Cross Country Skiing (X-Skiing)
Introduction (Grabber or hook) The exciting world of cross country skiing. (Estimated Time: 5 minutes) Instructor's introduction speech: Have you ever wanted to explore the winter landscape but you didn't want to dredge through the deep snow because it is so exhausting? Cross country skiing allows you to glide on top of the snow with ease, increase the speed at which you travel, and save you energy at the same time. Today we are going to teach you some basic skills needed to go cross country skiing. Hopefully with the knowledge you gain today, you'll find yourself

wanting to go cross country skiing again in the future to improve on your technique and to tour the wonderful winter landscape.

Link to Body: Instructor's introduction speech continued:

Raise your hand if you've ever cross country skied before. Do you know which technique you used? Was is classic X-skiing or Skate X-skiing? Does anyone know the very basic difference between skate and classic X-skiing?

Answer: Skate X-skiing requires you to lift your skis off the ground, move your foot in front of your body, and then push off bringing your body forward. (Almost like a running or walking motion). Classic X-Skiing requires you to keep your feet on the ground at all times and glide (shuffle) your feet forward one at a time to move forward.

Today, we will be performing classic X-skiing.

Body (include learning preferences, teaching methods)
Subthemes (main points)/individual activities:

Part 1: Practicing the kicking motion and athletic stance. (Estimated Time: 10 minutes)

Before the students even have their skis on, the instructor should demonstrate to them what an athletic stance looks like and what the proper kicking motion to propel skis forward looks like.

For the athletic stance, weight should be evenly distributed on both sides of the body. Your weight should also be centered over the two feet, not in front of you. Your knees should also be slightly bent.

For the kicking motion, glide your feet forward always pointing your toes (act like you are squashing a bug). Continue gliding your feet forward; don't lift your feet up and step forward.

Have the students practice both their athletic stance and their kicking motion. Provide constructive feedback to the students helping them to improve on their techniques. When the instructor feels confident that all of the students have these two techniques down, then he/she can move to the next activity.

Part 2: Sizing up the X-Skiing Equipment (Estimated Time: 15 minutes)

Skis are dependent on a person's weight. If the students know how much they weigh, have them pick out a pair of skis that is appropriate to their weight (size). If a student doesn't know how much they weigh, keep a scale somewhere private in the building that they can quickly run to and weigh themselves.

Ski poles are dependent on a person's height. The instructor should pick out three different length ski poles. They should then explain and demonstrate the proper way to select the correct ski poles. The instructor should stand straight up with their knees straight. The correct length for ski poles is the length from your armpit to the ground. The instructor should demonstrate this by first selecting a ski pole or two that are obviously the wrong size, and then show the students the correct ski pole length for themselves (the instructor).

Ski boots should match a person's shoe size.

Assist the students in finding the correct length ski poles and then move to the next activity.

Part 3: Putting on Skis and Practicing How to get up if You Fall Down (Estimated Time: 15 minutes)

At this point, the instructor should lead the students outside to the beginner ski area. Have the students carry their skis to the beginner ski area.

When the class arrives at the beginner ski area, the instructor should demonstrate two more techniques: 1) how to clip your ski boots into your skis, and 2) how to get up when you fall down without taking your skis off.

<u>Clipping your ski boots into your skis:</u>

The instructor should gather the students around him/her so all students can watch him/her perform this technique. Follow these steps:

1. Using your poles for support, check to make sure there is no snow packed down in one of your boot's binding. If there is snow packed down, clear it away.
2. Press the lever of the ski clip to open it up.
3. Step onto the ski, clipping your toe binding on your boot into the ski.
4. Lift your foot and shake it a few times to make sure you are clipped into your ski properly.
5. Check your other boot to make sure there is no snow packed down in your other boot. Remove any snow that is present and repeat Steps 2-4.

<u>How to get up when you fall down without taking your skis off:</u>

Now that the instructor has their skis on, they should purposely fall down and demonstrate the steps needed to get up after you fall down without taking your skis off. Remember to explain to the students that they should not be embarrassed when they fall down. Everyone is going to fall today, at some point, and we are all going to look silly.

1. The first step is to get both skis parallel with each other. If they're tangled together, roll over on your back and lift the skis in the air to get them parallel, then set them back down on the snow.
2. Release your grip on the poles to use your hands and arms for support (31a).

3. With the skis parallel and perpendicular to your body, begin to crawl forward until both feet are behind and your knees are on top or side of each ski (31b).
4. Get to a kneeling position by sliding one foot forward (31c).
5. Plant your poles into the snow and lift yourself up.

(Cross Country Skiing: Information, Tips & Techniques, 2012)

After the instructor has demonstrated these two techniques, they should then have the students put on their skis and purposely fall at least one time. The instructor should then monitor the students, providing useful feedback to help them master this technique, and provide manual assistance if some students need help getting up. After the instructor believes that the students are ready to go skiing, move on to the next activity.

Part 4: Moving on Skis With no Poles & The Diagonal Stride Activity (Estimated Time: 10 minutes)

Now that all of the students have their skis on, the instructor should demonstrate the kicking motion and the diagonal stride for them.

The instructor should get the class to line up in a single file line. When all of the students are in line, the instructor should ski past the students demonstrating the kicking motion and the diagonal stride at the same time for all to watch. The instructor should demonstrate these techniques without using ski poles to show the students that they should depend on their legs and not their arms for mobility.

The instructor should explain and demonstrate the following:

<u>Kicking Motion:</u>

Remember to keep your feet on the ground at all times. Glide over the snow while pointing your toes in front of your body. Remember to keep an athletic stance at all times and point your toes (like you're squashing a bug in front of you).

<u>Diagonal Stride:</u>

When you are moving forward, remember to always use a diagonal stride. A diagonal stride is when you move your left leg forward and you swing your right arm forward. Next, you'd move your right leg forward and swing your left arm forward. Repeat this

motion time and time again.

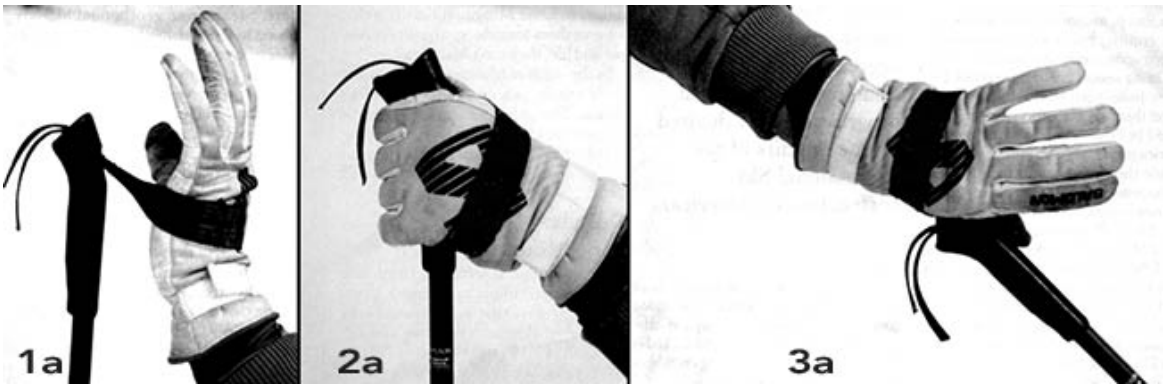
Students Turn:

Have the students practice the kicking/gliding motion without poles and the diagonal stride for 5 minutes or so. When the students look comfortable and prepared to ski, have them retrieve their poles, give them a set of boundaries they must stay in, and let them practice cross country skiing. (Move to the next activity).

Part 5: X-Skiing with Poles (Estimated Time for Parts 5-7: 30-75 Minutes)

First, have the students properly adjust their ski poles:

Adjusting Pole Straps



Pole straps need to be adjusted properly to learn a poling motion that provides power while allowing the arms and hands to relax.

Correct grip through the pole strap is the first step. Start with the hand below the strap then bring it up through the bottom of the loop (1a). The midway point of the strap should now rest on the top of the wrist. Now when we grip the pole the rest of the strap is under our palm.

Next, check to see that the strap lays flat as it wraps around our hand. A flat strap is necessary for comfort. If it twists, unwind the strap until it's flat. If it still twists, we'll need to release the strap from the pole, unwind and reattach.

The final process is adjusting strap tightness. A tight fitting strap allows us to control the pole with only a slight pressure between our thumb and forefinger. Grip the pole so that about a quarter to one-half-inch of the top, or knob, appears above your hand. Then tighten the strap (2a).

The knob is designed to fit and lock in the saddle, between our thumb and forefinger, as we extend our arm behind us. To help it along, point the fingers back towards the basket

at the end of the pole push (3a).

If you have a pair of poles with straps that come right out the top, take some durable tape and wrap down the top inch of the strap. This will provide a proper pole grip that allows for a relaxed and full arm extension.

(Cross Country Skiing: Information, Tips & Techniques, 2012)

The instructor(s) can decide to either lead the students around the beginner ski area, or they can allow the students to ski anywhere in the area that they want. If the instructor(s) allows the students to ski on their own in the beginner ski area, they should ski around the entire area and monitor student performance. The instructor(s) should be constantly vigilant and ready to assist students when needed regardless of the method used in this activity (letting the students go anywhere in the beginner ski area or leading the students through the area).

Part 6: Downhill Techniques

When all of the students seem comfortable maneuvering on flat terrain, the instructor should gather all of the students and leave the beginner ski area and head towards the Treehaven X-ski trails. When the entire group approaches an area that goes downhill, the instructor should teach and demonstrate to the students the proper techniques to ski downhill.

Double-Pole Technique and Descending Basics:

1. Remember to keep an athletic stance with your knees slightly bent.
2. Tuck your poles under your arms and aim them behind you (only lower your poles and use them if you are becoming off balance and need extra support).
3. Keep your weight equal on both feet.
4. If you need to turn, put more weight on your inside foot and wedge your outside foot.

The Track Snowplow

The first experience in prepared tracks can leave the skier with a locked-in feeling. Tracks are prepared with grooves for skis, about two inches deep, to help them glide along without slipping sideways. While tracks are great on flats and gentle terrain, trying to slow down using the conventional snowplow or wedge can be difficult. Cut the wedge in half and you'll find yourself slowing down and even turning around corners.

The Track Snowplow helps control speed in tracks

On double-tracked trails, always try to wedge between the two tracks. The terrain's usually smooth there, while the outer edges are often narrower and bounded by deep snow banks that can interfere with the tail of the wedged ski.

Keep the knees flexed and arms forward. Transfer your weight to the track ski, then lift up the tail of the other ski (33a) and set it out into a wedge position (33b). Pressure the heel to slide the tail out and roll in the ankle to edge. To get used to this feeling, glide down a slight hill, keep most of your weight over the in-track ski and let the wedged ski's tail float over the snow. To slow down, keep the knees flexed and move your hips over to the foot above wedged ski (33c-d).

For downhills with turns at the bottom, get in position before you descend. It's easier to set out the wedged ski while you're still gliding slowly. If the turn veers left, step out and weight your outside (right) ski. Pressure your wedge ski throughout the corner until the track straightens out.

(Cross Country Skiing: Information, Tips & Techniques., 2012)

For the first downhill descent, the instructor should have the students go down one at a time. When a student has completely finished their descent, then the instructor can either blow a whistle or make hand signals to let the next students start their descent. If a student falls, the instructor should stop the activity and give the student time to get back up and start their descent again.

The instructor should monitor students' techniques and provide assistance wherever it's needed during this activity.

Part 7: Uphill Techniques

When all of the students seem comfortable maneuvering on flat terrain, the instructor should gather all of the students and leave the beginner ski area and head towards the

Treehaven X-ski trails. When the entire group approaches an area that goes uphill, the instructor should teach and demonstrate to the students the proper techniques to ski uphill.

Basic Climbing Technique:

When climbing uphill, essentially keep your same flat terrain technique, but tweak it a little. Follow these steps:

1. Shorten your stride. Don't kick forward as far.
2. Increase your cadence. Kick forward at a faster rate.
3. Keep your weight on your bindings (toes) and not your heels.
4. Use your poles for more leverage; however, keep them behind your toes.

(Cross Country Skiing: Information, Tips & Techniques., 2012)

The instructor can either allow the students to go uphill one at a time (the same as downhill) or they can allow multiple students to go uphill at the same time. If multiple students are going uphill at the same time, the instructor should attempt to distribute them equally, so they don't catch one another. Multiple lanes are also recommended for this activity.

The instructor should monitor students' techniques and provide assistance wherever it's needed during this activity.

Conclusion (Estimated Time: 10 minutes)
How will you wrap up the lesson/activity?
Part 8: Wrap-up

When X-skiing is complete, have the students put away their equipment. Ask the students if anyone has any questions regarding the X-skiing techniques they learned today. Congratulate the students on successfully performing some classic cross country skiing techniques and then dismiss the class.

Inclement Weather Back-up Plan:

N/A. Cross Country Skiing requires snow. If there is no snow, then the lesson cannot be taught.

References:

Cross Country Skiing: Information, Tips & Techniques. (2012). Retrieved from Getting up From a Fall: http://www.skixc.com/survival-3-1.html

Cross Country Skiing: Information, Tips & Techniques. (2012). Retrieved from Adjusting Pole Straps: http://www.skixc.com/survival-1-2.html

Cross Country Skiing: Information, Tips & Techniques. (2012). Retrieved from Uphill Diagonal Stride: http://www.skixc.com/survival-2-1.html

Cross Country Skiing: Information, Tips & Techniques. (2012). Retrieved from The Track Snowplow: http://www.skixc.com/survival-3-3.html

Snow Shoeing Lesson Plan

Goals/Learner Outcomes *(What concepts, attitudes, knowledge, or skills will the students gain as a result of this lesson that will be of use to them in the real world?)*

Upon completion of this lesson, the students will. . .

- Be able to put on snow shoes.
- Be able to successfully move throughout deep snow using snow shoes.

What national standards and school-wide learning goals (or organizational mission/goals) does this address?

***Wisconsin Department of Instruction*-Standards for Physical Education:**

- 1:2:A5 Balances while moving in control through locomotor and non-locomotor skills.
- 1:3:A6 Demonstrates correct balance techniques (e.g., static and dynamic) in a variety of activities (yoga, Pilates, gymnastics, cooperative activities, etc.).
- 1:4:A5 Demonstrates proficiency in two movement forms in individual and lifetime activities.
- 1:4:A8 Acquires skills to participate in a lifetime activity outside of school.
- 2:2:A3 Identifies and demonstrates key elements of skill being taught.
- 3:1:A1 Engages in moderate to vigorous physical activity on an intermittent basis.
- 3:1:A2 Participates in a variety of physical activities outside of school, with and without objects.
- 3:1:A3 Participates in a variety of non-structured and minimally-organized physical activities outside of physical education.
- 3:2:A2 Chooses to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.
- 3:2:A3 Chooses to participate in structured and purposeful activity.
- 3:4:A1 Participates willingly in a variety of physical activities appropriate for maintaining or enhancing a healthy, active lifestyle.
- 5:2:A3 Demonstrates safe control of body and equipment.
- 6:1:A3 Participates even when not successful.
- 6:4:A1 Participates in activity outside of school for self-enjoyment.

Lesson Objectives *(What concepts, attitudes, knowledge, or skills will the students demonstrate as a result of this lesson?)*

- Students will be able to demonstrate that they know how to properly put on snow shoes and maneuver around a winter landscape with snow shoes on their feet.

Lesson Assessment (*How will you know what concepts, attitudes, knowledge, or skills the students learned and to what extent the students learned what you taught? How will you give them feedback?)*

Students' snow shoeing abilities will be monitored and assessed throughout the lesson. After the instructor explains and demonstrates the proper way to use snow shoes, students will receive assistance on an individual basis from the instructor.

Lesson Location and Required Materials:

Location:

Treehaven: Start the lesson in the lodge on the lower level of Treehaven's main building. Do the introduction in the lodge and grab snow shoes for all students. It is recommended that the instructor uses the Beaver Pond Trail for a guided snow shoe nature hike. However, any trail can be used for this activity.

Materials:

1. Snow shoes for each participant
2. The instructor should also make sure that all students are dressed appropriately for winter weather.
3. For demonstration purposes, have the following types of snowshoes:
    a. Bear Paw Snowshoes
    b. Beavertail Snowshoes
    c. Yukon Snowshoes
    d. Modern Snowshoes (made of steel and neoprene)
    e. Traditional Snowshoes (wooden with woven laces for support)

Theme for this lesson/activity: Snow Shoeing
Introduction (Grabber or hook) What is snow shoeing? (Estimated Time: 5 minutes) Have you ever wanted to explore a wilderness or nature setting in the middle of winter, but the snow was so deep that it made it extremely difficult for you to maneuver around the landscape? By learning snow shoeing skills, you'll be able to move around the winter landscape in deep snow more easily. This will allow you to look for animal tracks in the snow, go birding, or simply explore the beautiful landscape around you during the coldest time of the year.
Link to Body: Before we go exploring today, we must first learn the history of snow shoes, the parts of a snow shoe, and how to use snow shoes properly. **Body (include learning preferences, teaching methods)** **Subthemes (main points)/individual activities:** **Part 1: Brief History of snowshoes and the types of snowshoes. (Estimated Time: 15 minutes)** Share with the students the following information: Snowshoes are believed to have originated from Asia about 6,000 years ago. The Inuit tribes in northern Asia used them during the winter months to move about the landscape

to collect food and other goods. These tribes eventually crossed the Bearing Sea into North America and became the Native Americans, Inuits, and Eskimos we know today. The original snowshoes, 6,000 years ago, were made from modified slabs of wood. Today, snowshoes can still be made from traditional materials such as wood and animal hide or synthetic neoprene laces. However, many are now constructed with metal frames and neoprene decking.

Before the 1970's, snowshoeing wasn't a recreational sport. It was primarily used during search and rescue missions during the winter. In the 1970's, people started to use snowshoes for recreational purposes, and now there are snowshoe races around the world and snowshoe weaving classes offered to the public on a regular basis so people can make their own snowshoes.

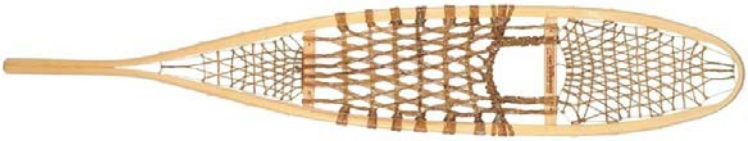
There are several different types of snowshoes. Today we have three different types that are on display that you'll be able to look at, touch, and examine. We also have a fourth type of snowshoe that you will get to use, as we explore Treehaven's landscape. The type of snowshoes we will be using today are a modified Bear Paw design. The three snowshoe types we have on display are:

1. Bear Paw- Oval-Shaped, short design. This pair of snowshoes is designed to offer its users quick maneuverability. It's mostly used in forested conditions.
2. Yukon (or Alaskan)- These snowshoes are extremely long and narrow. Yukon snowshoes are 46 inches long or more. They are used to traverse long distances in deep powdery snow. Yukon snowshoes are hard to turn in; they are used in open areas and people using them mostly walk in a straight line.
3. Beavertail- These snowshoes are shorter than the Yukon snowshoes and narrower than the Bear Paw snowshoes. They are the best of both worlds. Beavertail snowshoes offer more maneuverability than Yukon snowshoes and provide more surface area (support) than the Bear Paw snowshoes. They can be used in any snow conditions.

(Tucker, 2013)

Bear Paw Snowshoe Picture: © www.snowshoecanada.com

Beavertail Snowshoe Picture: © www.snowshoecanada.com



Yukon (Alaskan) Snowshoe Picture: © www.snowshoecanada.com

Part 2: Parts of a snowshoe (Estimated Time: 10 minutes)

The instructor should grab a pair of snowshoes that the students will be using for this lesson and explain all the parts of a snowshoe.

Decking
Decking is the material that creates a snowshoe's surface area basically, it's what keeps you afloat. Remember that antique pair of snowshoes mounted above the fireplace in Uncle Frank's living room? The webbing made of rawhide strung across the wooden frame is the decking.

Newer versions of snowshoes feature solid sheets of lightweight, tough materials like Hypalon (a rubbery type of nylon known for its resiliency), vinyl, or polyurethane-coated nylon, to offer better flotation with a smaller surface area.

Crampons
Snowshoes designed for varied backcountry use should have metal teeth, or crampons, that sink into snow and ice for improved footing when you're climbing, crunching across crusty ridges, or crossing frozen, windswept ponds.

The simplest systems use toe crampons, which jut out under the ball of your foot and bite with every step. Metal teeth under the heel are also common.

Snowshoes built for expedition use and peak-bagging feature more extensive cleating, with toe and heel crampons plus a variety of metal and plastic ridges running the length or width of the shoe to prevent backsliding on steep or icy approaches. The most aggressive high-mountain shoes sport longer, sharper teeth, or even spikes, under the forefoot to cope with steep, icy areas.

Bindings
Bindings attach your boots to the snowshoe and maintain the alignment of your feet for efficient tracking. If your heels aren't centered, or the bindings don't hold your foot snugly in place, either your snowshoes won't track in a straight path or you could be constantly tightening and readjusting the fit. Bindings are critical to making a snowshoes work well with your boots in the conditions you experience most often.

Frame
Made of wood, plastic or lightweight aluminum tubing, frames come in a variety of shapes. The differences are simple: oval shoes offer optimal flotation; shoes with tapered tails and asymmetrical shoes allow a more natural gait.

Pivot Point
The pivot point is the place where the binding attaches to the frame of the snowshoe. It should be placed at the ball of your foot.

There are two general types of attachments-let's call them *"soft"* and *"hard."*

A "soft" attachment is when the binding is mounted to a rubbery, resilient band of material that stretches across the frame. "Soft" attachments have fixed or limited rotation, which means that as you take a step, your heel lifts and the band snaps the tail of the snowshoe up off the snow, limiting the rotation of your foot in the shoe. Runners and trail walkers often prefer "soft" attachments.

Advantages

- The shoe feels lighter, except in deep, wet snow, where you'll be forced to lift the weight of the snow rather than letting the shoe slide out from under it.
- Dry, loose snow doesn't pile up on the back of the decking and weigh the shoe down.
- The shoes are more maneuverable, especially when backing out of a tight spot, because the entire shoe lifts with your foot.

- You can almost feel a spring in your step as your weight settles across this trampoline-like band.

Disadvantages

- In deep powder, snow is flipped up against the back of your legs and rear.
- Making kick-steps up steep terrain is more difficult because the nose doesn't fully clear to allow crampons to engage.

A "hard" attachment is when the binding rotates around a metal rod that runs from one side of the frame to the other. The binding pivots freely around the ball of the foot, giving you more lateral support and your crampons better purchase in the snow on steep inclines. (Note: Sherpa brand snowshoes have an adjustable attachment that can be tweaked toward either hard or soft.)

Advantages

- Because the shoe itself rotates around the binding, it's easier to slide out from under heavy, deep snow, rather than lifting the load with each step.
- Crampons engage more easily on steep ascents, because the nose of the snowshoe rotates out of the way.

Disadvantages

- Hard attachments can make for more difficult climbing when you need to kick deep steps up a slope. You have to flip the tail up, which often means whacking the tip into your shin.
- The tail of the shoe drops down awkwardly when you're backing out of tight spots.

(Hostetter , 2013)

Part 3: Going uphill and downhill. Plus, snowshoeing do's and don'ts. (Estimated Time: 15 minutes)

Have the students grab a pair of snowshoes. If some students need help putting their snowshoes on, the instructor should assist them. Once all of the students have their snowshoes on, the instructor should lead the students outside of the lodge. Walk the students to the Beaver Pond Trailhead and then explain some snowshoeing basic do's and don'ts, along with techniques to maneuver up and downhill.

The instructor should explain the following to the students:

1. Snowshoeing Do's:
    a) Walking regularly, do not change your walking stride, speed, or stance to compensate for the snowshoes. Try to pretend they aren't even on.
2. Snowshoeing Don'ts:
    a) Don't bridge your snowshoes on objects such as a log on the trail. Keep

the entire snowshoe on the ground. For example, don't plant your heel on the ground and your toes on the toe of a log.

3. When going uphill, keep your weight on your toes and not your heels. You want your crampons to dig into the snow so you don't start slipping backwards. The best way to do this is when you're going uphill, get the front of your snowshoes firmly embedded into the snow.
4. When going downhill, keep your weight on your heels and not your toes. You want your crampons to dig into the snow so you don't start slipping forward. The best way to do this is when you're going downhill, get the backend of your snowshoes firmly embedded into the snow.

Part 4: Nature Hike around the Beaver Pond with snowshoes (Estimated Time: 45-60 minutes)

Snowshoeing is a great way to explore the winter landscape silently. If time permits, the instructor should lead the students on a short nature hike to the Listening Point and around the Beaver Pond. The students will gain experience and confidence snowshoeing around the landscape. At the same time, the instructor can educate the students on the flora and fauna that Treehaven has on their property; along with the history of the land and the people who have used it.

Talking points for a nature hike around the Beaver Pond have been included at the end of this lesson plan. These talking points were written by me, Chris Homeister, during my graduate assistantship time at Treehaven (Fall 2012). These are not required to be followed, although they may be useful to a new staff member at Treehaven.

Part 5: Playing games and sports on snowshoes (Extension Activity-Estimated Time: 15-30 Minutes)

Sports and games are another fun way to gain experience snowshoeing. If time allows, the instructor can organize a large or small group game in the flat open area by the parking lot. Possible games that can be played using snowshoes include, but are not limited to the following:

1. Alaskan Baseball
2. Broomball
3. Kickball
4. Soccer
5. Basketball

The instructor can also set up obstacle courses or relay races that the students can participate in.

Conclusion (Estimated Time: 15 minutes)
How will you wrap up the lesson/activity?
PART 5: Wrap-up

When time is up, the instructor should gather all of the students back into a centralized location and ask them if they have any questions about snowshoes or the proper way to go snowshoeing. Recap all of the potential activities the students can do on snowshoes during winter. They can explore the winter landscape and play fun games such as Alaskan Baseball. Stress that even if there is snow outside, you can still have fun in nature.

The instructor should then lead all of the students back to the main lodge and have them put away their snowshoes. When everything is put away, the students can be dismissed to their next activity.

Inclement Weather Back-up Plan:

N/A. Snowshoeing requires snow. If there is no snow, the lesson cannot be taught.

References:

Hostetter , K. (2013). *Backpacker Magazine*. Retrieved March 28, 2013, from Anatomy of a Snowshoe: http://www.backpacker.com/november_2000_gear_snowshoe_parts/gear/1759

Tucker, J. (2013). *United States Snowshoe Association*. Retrieved from Snowshoeing: http://www.snowshoeracing.com/history.htm

Wilderness Survival Lesson Plan

Goals/Learner Outcomes *(What concepts, attitudes, knowledge, or skills will the students gain as a result of this lesson that will be of use to them in the real world?)*

Upon completion of this lesson, the students will. . .

- Be able to construct a lean-to debris shelter in a safe location out of appropriate materials found in the forest.
- Be able to identify at least five potential dangers they should search for in an area prior to building a lean-to debris shelter.
- Be able to name the four items that humans depend on for survival.
- Be able to name three precautionary actions that should be taken prior to starting a wilderness trip.
- Be able to name five items they should take with them on a wilderness trip.

What national standards and school-wide learning goals (or organizational mission/goals) does this address?

***Wisconsin Department of Instruction*-Standards for Physical Education:**

- 1:4:A8 Acquires skills to participate in a lifetime activity outside of school.
- 2:2:A3 Identifies and demonstrates key elements of skill being taught.
- 3:1:A1 Engages in moderate to vigorous physical activity on an intermittent basis.
- 3:1:A2 Participates in a variety of physical activities outside of school, with and without objects.
- 3:1:A3 Participates in a variety of non-structured and minimally-organized physical activities outside of physical education.
- 3:2:A2 Chooses to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.
- 3:2:A3 Chooses to participate in structured and purposeful activity.
- 3:4:A1 Participates willingly in a variety of physical activities appropriate for maintaining or enhancing a healthy, active lifestyle.
- 5:2:B2 Participates in a variety of team building activities.
- 6:1:A3 Participates even when not successful.
- 6:4:A1 Participates in activity outside of school for self-enjoyment.

***Wisconsin Department of Instruction*-Science, Life, and Environmental Performance Standards:**

- F.4.1 Discover* how each organism meets its basic needs for water, nutrients, protection, and energy* in order to survive
- F.4.4 Using the science themes*, develop explanations* for the connections among living and non-living things in various environments
- F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments

Lesson Objectives *(What concepts, attitudes, knowledge, or skills will the students demonstrate as a result of this lesson?)*

- Students will be able to demonstrate that they know how to build a lean-to debris shelter.
- Students will be able to identify signs of danger and areas to avoid building debris shelters in.

Lesson Assessment (*How will you know what concepts, attitudes, knowledge, or skills the students learned and to what extent the students learned what you taught? How will you give them feedback?)*

- Students will engage in a discussion with their instructor to demonstrate how much they know about what steps they should take before departing on a trip to the wilderness. The students will also discuss with the instructor what materials are important to bring with them and what materials can be left behind.
- Students will build a debris shelter in the woods and explain why they chose the debris shelter design they did. Students will also have to defend why they decided to build in their particular area.
- The waterproofness of each debris shelter will be tested as well. The instructor will ask two group members from each group to enter their debris shelter while the teacher pours one liter of water onto their shelter to test for waterproofness.

Lesson Location and Required Materials:

Location:

Treehaven trails.

Materials:

1. Dry-erase board with markers
2. Trees, sticks, logs, leaves, and bark students will find in the forest to build their debris shelters out of.

Theme for this lesson/activity: Wilderness Survival
Introduction (Grabber or hook) Have any of you ever been in a life or death survival situation in the wilderness? (Estimated Time: 5 minutes) Every year across the U.S. millions of people visit wilderness areas, national parks, and state parks to go on vacation. A handful of these people each year end up becoming lost as they hike around these natural areas. Becoming lost in a wilderness setting is, of course, extremely rare. However, it can happen. Today, we are going to teach you some basic skills you would need to survive, if you were ever in a life or death survival situation in the wilderness.
Link to Body: Have any of you been in a survival situation before? Would you like to share your story with the class? **Body (include learning preferences, teaching methods)** **Subthemes (main points)/individual activities:**

Part 1: Introduction Discussion (Estimated Time: 15 minutes)

1. Today we are going to find out what we need to do to properly prepare ourselves for a trip into the wilderness.
2. We are also going to learn what we need to do to survive a worst case scenario; build debris shelters to survive the night.
3. Discuss with the class what it means to survive.
    a. Survival is the art of not dying.
    b. What are the four things that people need to survive? How long can we survive (on average) without them?
        i. Air- 3 minutes
        ii. Shelter- 3 hours (in extremes)
        iii. Water- 3 days
        iv. Food- 3 weeks
4. Have a discussion with the students on how to "plan ahead" for your trip.
    a. Best to go with at least one other person
    b. Dress appropriately for weather conditions
    c. Pack enough food and water for the trip
    d. Tell people where you are going and when you will be back.
    e. Talk to locals about the land you will be visiting
    f. Bring a map of the area with you
    g. Bring a compass
    h. Etc.
5. Explain to the students that in today's class we are going to pretend that we are in a worst case scenario. We are lost in the woods!!! Now we must build debris shelters to survive the night.

Part 2: Building Debris Shelters (Estimated Time: 60 minutes)

1. Walk the class to a desired location to start the activity.
    a. Break the class up into four groups of three or four students.
2. Before the students are allowed to start building their lean-to debris shelters, discuss with them the proper way they must build/design their lean-to debris shelters and what safety concerns they should look for before they start constructing their shelters.
3. Safety concerns to watch out for before building your debris shelter in a particular area:
    a. Broken branches that could fall
    b. Beehives (in trees and underground)
    c. Animal dens
    d. Poison ivy
4. Lean-To Debris Shelter construction steps
    a. Locate a tree (preferably living) that has a split or a Y-Shaped trunk or branch coming out of it (roughly 4-8ft from the ground).
    b. Place a sturdy stick (base frame stick) or branch in the Y-Shaped opening of the tree. This base frame stick should be long enough to reach the ground and be placed at an angle between 30-60 degrees. The base frame stick should also be between 2-4 inches in diameter.

c. Once the base frame stick is placed in the Y-Shaped opening of the tree, the students should search the area and collect as many sticks with diameters between ¼-1 inch. The students will then lean these smaller sticks on the base frame stick to start forming the structural layout of the shelter.
    i. ***Note: This step often works best when the smaller sticks are placed perpendicularly to the base frame stick.***
d. Next, students should collect small twigs that have diameters smaller than ¼ inch to weave through the sticks that are leaning off the base frame stick.
    i. ***Note: The students essentially want to create a tick-tack-toe pattern on both sides of their shelters.***
e. Finally, students should pick up multiple handfuls of leaves and pack them down onto the outside of the lean-to debris shelter.
    i. If enough leaves are placed on the shelter, the shelter will become wind and water proof.
f. If time allows, the students can add an extra layer of small sticks to the top of their lean-to debris shelters to help stabilize the leaves.
g. *****Note: If the instructor wants, they can build a small model of a lean-to shelter out of small sticks and twigs to show the class exactly what they will be doing.*****

Part 3: Debris Shelters Discussion (Estimated Time: 15 minutes)

1. Have at least two students from each group enter their group's debris shelters and ask each group to share some thoughts about the process of building their shelter.
    a. Why did you pick this location?
    b. What dangers did you have to look for?
    c. What was the hardest part of building this shelter?
    d. What was the easiest part?
    e. Etc.
2. Test to see if each shelter is water proof.
    a. Get out a one liter water bottle and pour the water onto the top of each shelter to see if it leaks.
3. Have students tear down their shelters and spread the debris around the forest.

Part 4: Fire Building (Extension Activity: 30 Minutes) ***Activity should be completed in an approved fire ring (outside) or a fireplace (inside).***

1. Fire Building Discussion
    a. How can building a fire benefit you in a survival situation?
        i. A fire can provide you heat and light
        ii. Fire can be used to signal for help
        iii. Fire boosts morale in survival situations (sense of accomplishment)
    i. Precautionary actions that should be taken prior to starting a fire.
        i. Clear the area around the fire of all flammable materials (i.e. sticks and leaves)
        ii. If the leaf litter is too thick and you cannot clear it, elevate your fire using rocks and green (live) logs. If it is a very dry area, do not build in it.
    j. What are the three things a fire needs to start and to continue burning?

i. Heat/Friction
ii. Fuel (woody material, not gasoline)
iii. Oxygen

k. What are the four "D's" for collecting firewood? You want your firewood to be:
i. Dry
ii. Dead (Not green in coloration)
iii. Down (On the ground. Easier to collect, and it's a good indicator that it's dead wood, too).
iv. Diameter (Less than one inch diameter to start the fire. Smaller diameters catch fire easier than large diameters).

2. Different Fire Structure Designs (Fire Building Activity)
   a. Explain and demonstrate the following Fire Structures to the students and have each group select one structure to build.
      i. Log Cabin: Build from the bottom up. Have two sticks about 6 inches apart from each other, both laying north/south. Place two more sticks on top of the first two sticks, this time they should be placed east/west. Put some tinder (i.e. dry leaves, small sticks, tree bark) in the middle of the box. Continue the pattern of laying two sticks north/south and then east/west making the boxes smaller and smaller each time, kind of like a pyramid shape. Make a total of 4-6 boxes.
      ii. Teepee: Arrange a pile of tinder in the center of the fire pit. Find 8-12 sticks that at between 12-18 inches long. Take two sticks at a time and make them balance each other standing over the tinder pile. Arrange all 8-12 sticks in this way and light the tinder pile in the middle of the standing sticks.
      iii. Lean-to: Exactly the same way you built the debris shelters. ***__Please reference the Lean-to Debris Shelter Construction Steps stated above.__***

3. Lighting the fires: (Always have a bucket of water close by)
   a. Depending on time and the materials an instructor has, students can attempt to light a fire using multiple tools. Tools include:
      i. Matches
      ii. Flint Steels
      iii. Magnesium Fire Strikers
      iv. Two sticks or a Bow Drill
   b. Have each group of students attempt to light their fire structures. Talk about wildfire safety protocols, then put out each fire that was successfully started.

Conclusion (Estimated Time: 5 minutes)
How will you wrap up the lesson/activity?
Part 5: Wrap-up

Circle the class up and quickly recap the activity. Ask questions to make the students recall what they need to do to prevent a survival situation from happening.

1. What are the four things that people need to survive?

a. Food, water, shelter, and air

2. What kinds of dangers should you look for before constructing a lean-to debris shelter in a particular area?
    a. Poison plants, animal dens, broken branches in the trees, beehives, etc.
3. Congratulate everyone on their shelter building skills and then dismiss the class.

Inclement Weather Back-up Plan:

N/A. Wilderness Survival Skills can be taught in all weather conditions. It should always be outside.

Orienteering Lesson Plan

Goals/Learner Outcomes *(What concepts, attitudes, knowledge, or skills will the students gain as a result of this lesson that will be of use to them in the real world?)*

Upon completion of this lesson, the students will. . .

- Be able to name three different kinds of maps.
- Be able to name the four characteristics all maps must have in order to be accurate (title, scale, key/legend, and compass rose).
- Be able to use a compass correctly.
- Be able to follow a directional bearing that is given to them.
- Successfully navigate an orienteering compass course on Treehaven's property.

What national standards and school-wide learning goals (or organizational mission/goals) does this address?

Wisconsin Model Academic Standards for Social Studies Introduction

Geography:

- A.4.2 Locate on a map or globe physical features such as continents, oceans, mountain ranges, and land forms, natural features such as resources, flora, and fauna; and human features such as cities, states, and national borders
- A.4.8 Identify major changes in the local community that have been caused by human beings, such as a construction project, a new highway, a building torn down, or a fire; discuss reasons for these changes; and explain their probable effects on the community and the environment
- A.8.1 Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place
- A.8.3 Use an atlas to estimate distance, calculate scale, identify dominant patterns of climate and land use, and compute population density

Wisconsin Standards for Physical Education:

- 1:3:A7 Demonstrates use of technology (e.g., compass and GPS) in outdoor pursuits such as hiking, backpacking, and snowshoeing.
- 3:1:A3 Participates in a variety of non-structured and minimally-organized physical activities outside of physical education.

Lesson Objectives *(What concepts, attitudes, knowledge, or skills will the students demonstrate as a result of this lesson?)*

- Students will be able to demonstrate that they know how to correctly use a compass to follow a bearing.
- Students will be able to demonstrate that they know how to read a map.

Lesson Assessment (*How will you know what concepts, attitudes, knowledge, or skills the students learned and to what extent the students learned what you taught? How will you give them feedback?)*

- At the beginning of the lesson, students will be given a map of Treehaven. They will be asked to identify where they are on Treehaven's property by looking at the map. The instructor will inform the students to look around the landscape, find where the buildings and trail markers are, and relate that to the map. The instructor will have each student point to their location on the map, and the instructor will check to make sure each student has correctly identified their location.
- The students will discuss with the instructor what components are needed to make a good map (title, scale, compass rose, and legend/key).
- Each student will be given two bearings that they must find using a compass. When they find the bearing, they must turn their bodies to face the bearing and point straight in front of themselves towards the bearing that was assigned to them. The instructor will teach the proper way to use a compass to the students by using an *Oversized Compass* for demonstration purposes. The instructor will quickly approach any student that doesn't point to the correct bearing and explain the concept again to the student in a one-on-one setting.
- If a student successfully completes an orienteering course on Treehaven's property, then the instructor will know that they have mastered the skills of using a compass and reading a map.

Lesson Location and Required Materials:

Location:

Treehaven: Start the lesson in front of the main lodge by some picnic tables or by the parking lot. You'll need some open space so you can work with the compasses in a safe environment.

Note: You can do the introduction to the program anywhere on the property if needed, but be aware of the orienteering course paths and the fact that compasses aren't accurate in buildings because of the metal in them.

Materials:

1. Compasses for the students (Recommended 1 compass for every 2 students)
2. 1 Clue Sheet for each Orienteering Group and matching Cheat Sheet for the chaperone to use during the Orienteering Course Activity.
3. Laminated maps of Treehaven
4. 1 Oversized Compass
5. Magnets
6. Sewing needles or paperclips
7. Small pieces of foam
8. Bowls of water

Theme for this lesson/activity: Orienteering
Introduction (Grabber or hook) What is orienteering? (Estimated Time: 5 minutes)

Instructor's Introduction Speech:

Have you ever wanted to explore the world like Christopher Columbus? Or, perhaps find some buried treasure like a pirate? Well, today we're going to teach you the skills needed to do these things. We are going to learn about orienteering. Does anyone know what orienteering is?

Answer: Orienteering is finding your way using a map and compass.

Today in our orienteering class, you are going to learn how to read a map and use a compass to navigate around Treehaven's property on one of our orienteering courses.

Link to Body: Before we let you start your fantastic journey on your orienteering course, we must first give you a map so you know where to go.

Body (include learning preferences, teaching methods)

Subthemes (main points)/individual activities:

Part 1: Different Maps and the Parts of a Map. (Estimated Time: 10 minutes)

Ask the students the following questions:

1. How many of you have used a map before?
2. What kind of map was it?
    a. Was it a road map, a mall map, an amusement park map, or a world map?

After you've finished asking these questions, hand out Treehaven Orienteering Maps to the students. If you can, try to have at least one map for every two students. Then continue with the discussion.

There are several different kinds of maps. They are each designed to show unique characteristics. *Road maps* are used to show people how to get to different places while they're driving. *Topographic maps* are used to show changes in elevation. *Political maps* document state and country boundaries. *Amusement park maps* show guests where rides are located.

Even though there are many different kinds of maps, each "good" map shares four similar characteristics.

Next, ask the students to look at their Treehaven Orienteering Map and see if they can identify the four characteristics that each "good" map has.

Allow the students 30 seconds to look at their maps and then ask them to identify what the four characteristics are that each "good" map has.

The Four Map Characteristics are as follows:

1. *Title:* What the map is showing a picture of.

2. *Key/Legend:* What all of the symbols on the map represent.
3. *Scale:* What the distance between two points is.
4. *Compass Rose:* Which way north is.

Part 2: How the Compass and the Earth work Together (Estimated Time: 15 minutes)

Instructors Speech:

Now that all of you understand how to read a map, it's time to work on your compass skills.

Ask the students if any of them have ever used a compass before.

Let the students that have used a compass before know that during the compass tutorial and on the orienteering course, they are encouraged to help their classmates use a compass.

Discuss the following with the students.

1. What is the difference between True North and Magnetic North?

Did you know that there are actually two norths on planet Earth? There is true north which is the very top of the earth, in the middle of the Arctic circle; where Santa Claus lives. But there's also a magnetic north pole, where your compass needle points to.

Ask the students if they've ever played with magnets before.

The earth operates very similar to how magnets operate. The earth has a positive and a negative charged end, the north and south poles. Since the earth is tilted on an axis, and the earth is also spinning around its axis and rotating around the sun, the magnetic north and south poles cannot stay constantly in the same area. The magnetic north pole rotates at an incredibly slow rate around the Arctic Circle, and around the earth's axis. Currently, magnetic north is located in Northern Canada; however, it moves about 10 kilometers each year, so given enough time, magnetic north will someday be located in the middle of the Arctic Ocean, then in Russia, followed by Alaska, and finally one day, back into Northern Canada.

2. What is declination?

So, you might be thinking to yourself, "What a bummer; I wanted to see Santa Claus today." It is true that you wouldn't be able to find Santa Claus using your compass following the north bearing of 0° because you would be heading towards magnetic north instead of true north. However, there is a way that you can use your compass to find where Santa Claus lives, and the answer lies within declination. Declination is the calculated difference between magnetic north and the true north pole. Wherever you start your journey from, you need to add or subtract a certain amount of degrees from the

bearing given to you to account for declination. The amount of declination differs depending on where you are in the world. To orient yourselves towards true north, if you are in Tomahawk, WI, you'd want to subtract 2.5 from the bearing given to you. This doesn't seem like much, but remember each place is different. In Seattle, WA, people must correct their compasses 20 degrees to compensate for declination.

For today, we are not planning on leaving Treehaven, so there's no need to worry about calculating declination. If you are given a degree to follow, just follow that number.

3. What is the science behind a compass?

So you might be asking yourself, "How does a compass work, and how do I operate one?" There's a needle in the middle of your compass. You've probably noticed that the needle is not stationary, it moves all of the time. If you haven't noticed this yet, you will now. Have the students hold their compass flat and in front of them.

Next, have them slowly spin their entire body around two or three times. When they're doing this, have the students look down at the needle on their compass. When they've spun around two or three times, have the students share their compass with their partner so they can do it too.

Allow the students a minute or less to spin around with the compasses. Have the students stop spinning and then ask the students, "Does anyone know what is happening to that needle?"

The instructor should explain to the students the following:

The needle is suspended in an oily liquid in the center of your compass ring, or azimuth ring. It is allowed to rotate freely in this oil. The actual needle has been magnetized, so the needle is moving around trying to become aligned with the earth's magnetic poles. The red part of the needle will always point to the magnetic north pole if the compass is being held flat and away from metal objects.

Ask the students, "Why do you think metal objects can interfere with the needle? Why should you hold your compass flat?"

Just like a magnet is attracted to some metals, the needle in your compass is also attracted to some metals. Remember, the needle has been magnetized. So, if the needle in your compass gets too close to a metal object, such as a belt buckle, or even another magnet, the needle may point towards that object instead of magnetic north.

If the compass is being held on a slant, then the oil in the compass will be deeper on one side than the other. When this happens, the needle has trouble spinning and usually doesn't line up 100% correctly. So, remember to always hold your compass flat.

Part 3: How to read a Compass? (Estimated Time: 15 minutes)

The instructor should explain the parts of a compass:

1. *Compass Needle*-Red and white needle that is inside the compass ring, *azimuth ring.* ***Remember the red part of the needle always points to magnetic north. If you don't want to travel in that direction, you shouldn't follow the red needle. You want to follow the Direction of Travel Arrow when the compass is properly aligned to the bearing you want to follow.***
2. *Azimuth Ring*-The ring on the compass that has the numbers 0-359. Each number represents a degree of travel.
3. *Orienting Arrow*-The arrow that's inside the azimuth ring. It's usually red in color.
4. *Direction of Travel Arrow*-The arrow that is outside of the azimuth ring.

Next, the instructor should explain the proper way to hold a compass:

1. Hold the compass completely flat and in front of you at all times. The compass should be held around the middle of your chest.
2. Hold the compass so that the *Direction of Travel Arrow* is pointing in the forward direction (away from your body). The *Direction of Travel Arrow* should ALWAYS point away from your body.
3. Remember that you want to "Park Red in the Shed and follow Fred."
    a. When you are given a direction of travel or a bearing, you are supposed to line that number up on the *Azimuth Ring* with the *Direction of Travel Arrow.* For example, if you need to follow a bearing of 160° then line up 160° below the *Direction of Travel Arrow*.
    b. Turn your entire body (not just the compass) until the red *Compass Needle* is directly over the *Orienting Arrow* within the *Azimuth Ring*. Remember, the *Direction of Travel Arrow* must always point away from your body.
    c. After doing these steps, you will be facing in the direction you want to travel, so you just need to start walking straight. Make sure to always keep the *Compass Needle* over the *Orienting Arrow* and follow the *Direction of Travel Arrow*.

Have the students demonstrate their new knowledge to you. Give them a bearing and tell the class to point in the direction of that bearing. Walk throughout the students and assist any students that are struggling. Have the students give the compass to their partner. Give the new students a different bearing to follow. Repeat this action at least twice, so each student has two chances to use the compass before starting the activity.

Part 4: Navigating the Orienteering Course (Estimated Time: 45-60 minutes)

Activity Description:

The class will be split up into smaller groups (5-6 students each). Each group will be given 1-2 maps of Treehaven, 2-3 compasses, and a clue sheet. Each group is assigned an Orienteering Course number. That number corresponds to the number on the group's

clue sheet. Each group of students should have one chaperone with them. The chaperone will receive a cheat sheet for their number orienteering course. The cheat sheet is double-sided. One side is a map of Treehaven with the highlighted path that the orienteering course will take the students. The other side is a description of the orienteering course. The description tells the color order of the clues the students will find and a brief description of where each clue is located.

Instructor Notes:

Inform all of the groups that they must only find and follow the number that has been assigned to them. For instance, if a group is assigned #3 and they find a green #2 clue during their travels, Group #3 should not be concerned with the #2 clue.

Show the students a sample clue, so they know what they are looking for. The color of paint sample that the number is on corresponds with the next clue the group should read. If group #2 finds an orange #2 clue, they should read the orange clue on their clue sheet.

Inform all students, teachers, and chaperones that the students should leave the clues on the trails where they find them. DO NOT REMOVE THE CLUES FROM THEIR LOCATION. IF A CLUE IS REMOVED, THEN THE TREEHAVEN STAFF WILL HAVE TO REPLACE THE CLUE BEFORE USING THE COURSE AGAIN.

Chaperones for each group can be teachers, parents, and/or the instructor of the orienteering lesson.

Part 5: Making Your Own Compass (Extension Activity-Estimated Time: 10 Minutes)

1. Fill a bowl halfway with water.
2. Rub a sewing needle or paperclip on a magnet. Make sure to always rub the sewing needle the entire length of the magnet, never changing the direction that the needle is facing and never flipping the magnet over. Start with the needle tip and end with the base of the needle for every stroke. Repeat the motion at least 15-20 times.
3. Stick the needle through a piece of foam or another floatation device.
4. Place the needle and foam into the bowl of water.
5. Allow 15-20 seconds for the needle to align with magnetic north.

If done correctly, the needle will orient itself towards magnetic north. This activity can be done for fun and/or help with the discussion in *Part 2: How the Compass and the Earth Work Together.* This activity can be done during the Part 2 discussion, after groups finish the orienteering courses, or skipped to save time.

Conclusion (Estimated Time: 5 minutes)
How will you wrap up the lesson/activity?
Part 5: Wrap-up

Congratulate all of the groups when they arrive back at the start point after completing their orienteering course. Ask the students if they had any trouble navigating the course. Ask the students to share with the class a highlight of their journey throughout the orienteering course. Did you see any cool sights or animals?

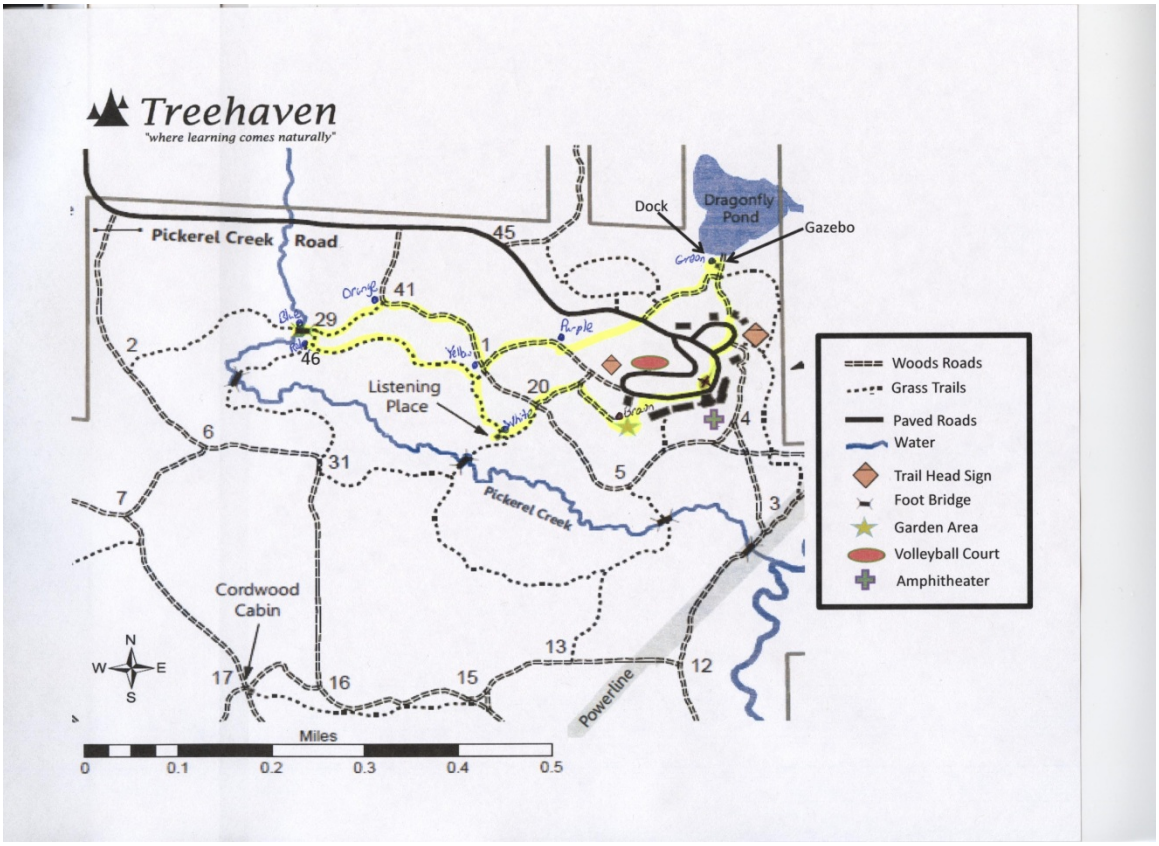
Since groups will be rolling in at different times, the instructor may want to play a small group game with the groups that get back early. Other options include: 1) having the students make their own compass (Extension Activity), or 2) have the students stand in a centralized area and the instructor or chaperone could shout out a bearing for the students to take. The students would have to find the bearing and tag the closest tree in that direction. The first student to tag the correct tree would be awarded one point.

Inclement Weather Back-up Plan:

N/A. The orienteering courses are all outside throughout Treehaven's property.

References:
Jacobson, C. (2008). *Basic Illustrated: Map and Compass.* Guilford, CT: Falcon Guides.

Orienteering Course #1 Map



Orienteering Course #1: Cheat Sheet

Below is a description of the orienteering course #1 clues that you'll find. They are listed in the correct order in which your group will find the clues.

Starting Clue: The first clue is located on the northeastern most post of Treehaven's garden, located between the White Pine Lodge and Living Center B.

Brown: Located on the northeastern most post of the garden. This clue will direct you to follow a path past the garden and behind the White Pine Lodge. Take a left at the intersection and walk towards the Listening Place observation deck.

White: Located on a tree south of the Listening Place observation deck. The clue is situated in a way where the students will be able to see it when they are standing on the observation deck and looking back behind them. This clue will direct you down a pathway to the right of the observation deck. The next clue is about 0.20 miles away, so don't get discouraged.

Red: Located on a tree to the left of the Treehaven #46 trail sign. This clue will direct you on a path to the right of the Treehaven #46 trail sign. Follow this trail until you get to the Treehaven #29 trail sign. From there take a left and the next clue is on the bridge.

Blue: Located on the foot bridge to the east of the Treehaven #29 trail sign. This clue directs you to turn around and walk straight past the Treehaven #29 trail sign, down the new pathway. You'll walk uphill through a wooded fern covered area. When you get to the top of the hill, you'll spot the next clue on the Treehaven #41 trail sign.

Orange: Located on the Treehaven #41 trail sign. Follow the trail to the right of the Treehaven #41 trail sign. **Don't go uphill towards the gate.** The next clue is by the Treehaven #1 trail sign.

Yellow: Located on a log on the south side of the trail across from the Treehaven #1 trail sign. Turn left at the Treehaven #1 trail sign and head uphill. When you get to the top of the hill, you'll see two paths. Take the path that leads towards the open field. **Don't head towards the White Pine Lodge.** The next clue is located on a birdhouse at the edge of the forest.

Purple: Located on a birdhouse at the edge of the open field area, to the right of the parking lot. This clue directs you to cross the open field at a bearing of 76° from the birdhouse. You'll find a path that leads to the main road and continues on the other side of the road. You'll want to follow this path down towards Dragonfly Pond.

Green: Located at the top of a post on the Dragonfly Pond gazebo. This clue directs you up the hill, between the maintenance building and storage garage, and back to the main lodge where you started your journey.

Orienteering Course #1 Clues

START

I know that you're excited to start and that you're in a fine mood.
The first clue is on a fence post by an area we grow food.

BROWN

Follow the trail at bearing 280°.
The trees on the trail edges may make it shady.
When the trail ends your journey's not over.
Turn in the direction of 247° and walk through the grass and clovers.
When you reach a 4-Way, continue at 226°.
Your next clue is by the porch hidden amongst the trees & sticks.

WHITE

I hope you've enjoyed the views and that you're having fun.
Your next path can be found at bearing 321°.
You'll be on this path for quite some time.
When you see an orange arrow, follow the direction of the sign.
You're doing great and you're really close.
The next clue is located around a Treehaven post.

RED

The next clue isn't very far, so there's no need to run.
Take a bearing of 51°.
At the next Treehaven sign, feel free to ignore it.
But, please take a bearing of 284° standing in front of it.
Hold on to your sons and to your daughters.
Because the next clue can be found over Treehaven's waters.

BLUE

I thought the water looked pretty. What do you think?
It's nice and cold, but please don't drink.
Now take a bearing of 99°.
And follow your new path past sign #29.
Through the ferns and woods you'll go.
Search for your next clue in a small open grassy meadow.

ORANGE

A bearing of 107° is the correct path to take.
Your next clue is by the Treehaven post matching your group's number. It should be a piece of cake.

YELLOW

You're doing great and you're looking alive.
Follow the trail at bearing 45°.
When you get up the hill, you'll have two ways you can pick.
Go in the direction of 96°.
Before entering the open field, a clue to find would be best.
It can be found on a box where a bird might nest.

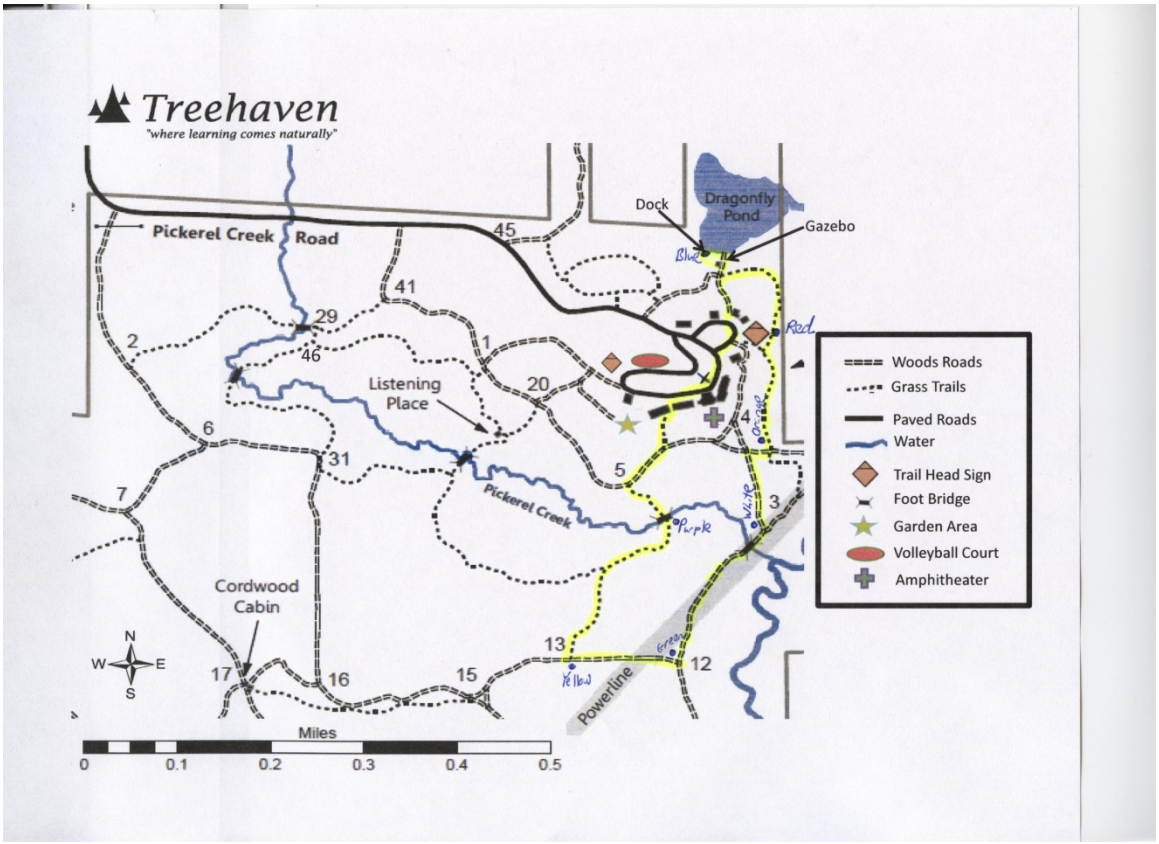
PURPLE

Stand by the birdhouse and look across the open field.
Find two trees to run towards, but first you must yield.
The trail you seek can be spotted from here.
But running at a bearing of 76° will make it clear.
Now cross the road, but follow your 76° bearing, so you don't get stuck.
The wide grassy path will lead you to your next clue, which is on a shelter where you might see turtles, fishes, or ducks.

GREEN

Success you've done it. I'm so proud of you.
You'll get back to your classmates if you follow a bearing of 202°.
Walk between the two buildings and towards the blacktop.
Everyone should be waiting for you around the parking lot.

Orienteering Course #2 Map



Orienteering Course #2: Cheat Sheet

Below is a description of the orienteering course #2 clues that you'll find. They are listed in the correct order in which your group will find the clues.

Starting Clue: Located on the dock overlooking Dragonfly Pond.

Blue: On the dock at Dragonfly Pond. This clue directs you to go up the hill and past the Dragonfly Pond gazebo. When you come to a fork in the road, you don't want to take either of the two main paths. Your path is located at 90° and should be to the left of you. Follow this path until you see a tower.

Red: Located on the communication tower. This clue directs you to follow the path straight out of the woods from the tower (bearing 215°). Follow the path to your left when you exit the woods. Stay on this path, and your next clue will be on a tree before a 4-Way intersection.

Orange: On a dead tree trunk on the ski trail, before crossing the 4-Way intersection. This clue directs you to go to the 4-Way intersection, where you'll take a right turn. You'll walk down this path until you come to a second 4-Way intersection. At this 4-Way, you'll want to take a left turn. Follow this path until you get to the Treehaven #3 trail sign.

White: On a tree across the path from the Treehaven #3 trail sign. This clue directs you to follow the trail over the bridge and under the power lines. The next clue is located by the Treehaven #12 trail sign.

Green: At the base of a tree by the Treehaven #12 trail sign. This clue directs you to take a right turn from the path you came from. The next clue is by the Treehaven #13 trail sign.

Yellow: On a tree across the trail for the Treehaven #13 trail sign. This clue directs you to take a right turn from the path you just came from. You'll continue down this path until you find a footbridge this goes over a stream.

Purple: On the bench by the side of the stream between the Treehaven signs #5 and #13. This clue directs you to follow the path up to the Treehaven #5 trail sign. Take a right at the sign and walk until you see a narrow woodchip path that leads uphill. Follow this path uphill. Go up the stairs between the two Living Centers and take a right turn. This will take you to the front of Treehaven's main lodge where you started your journey.

Orienteering Course #2 Clues

START

This exciting journey will take you to places far and beyond.
Your first clue is over the waters of Dragonfly Pond.

BLUE

You're doing great. Do you like following my bread crumbs?
Next, head back up the hill you just came from.
When you come to a fork in the trail, pull out your compass.
The trail you must take is hidden, and I hope it's not missed.
You'll find your path at a bearing of 90 degrees.
It will take you to a tower hidden amongst the trees.

RED

Exit the forest by taking a bearing of 215 degrees.
When you come to an opening follow a bearing of 139° making your way back into the trees.
When you come to another small trail, take a bearing of 188°.
I want you to stay on track so you're not late.
The next clue will fill you with glee.
It could be found before a 4-Way on a dead tree.

ORANGE

Walking straight towards the 4-Way would be best.
When you arrive at the 4-Way, follow the cardinal direction **WEST**.
Follow this path until you find another 4-Way.
Traveling at a bearing of 170° will brighten your day.
Hurry through the woods towards the power line.
Your next clue is somewhere around a Treehaven sign.

WHITE

Follow the trail at bearing 208°.
If you could cross the bridge and go under the power line, that would be great.
When you come to a fork in the trail start looking around.
Your next clue is close to the ground.

GREEN

Your next clue should be a breeze.
Follow the path found at 272 degrees.
Don't be frightened, these woods have no ghosts.
Your clue is by an unlucky numbered Treehaven post.

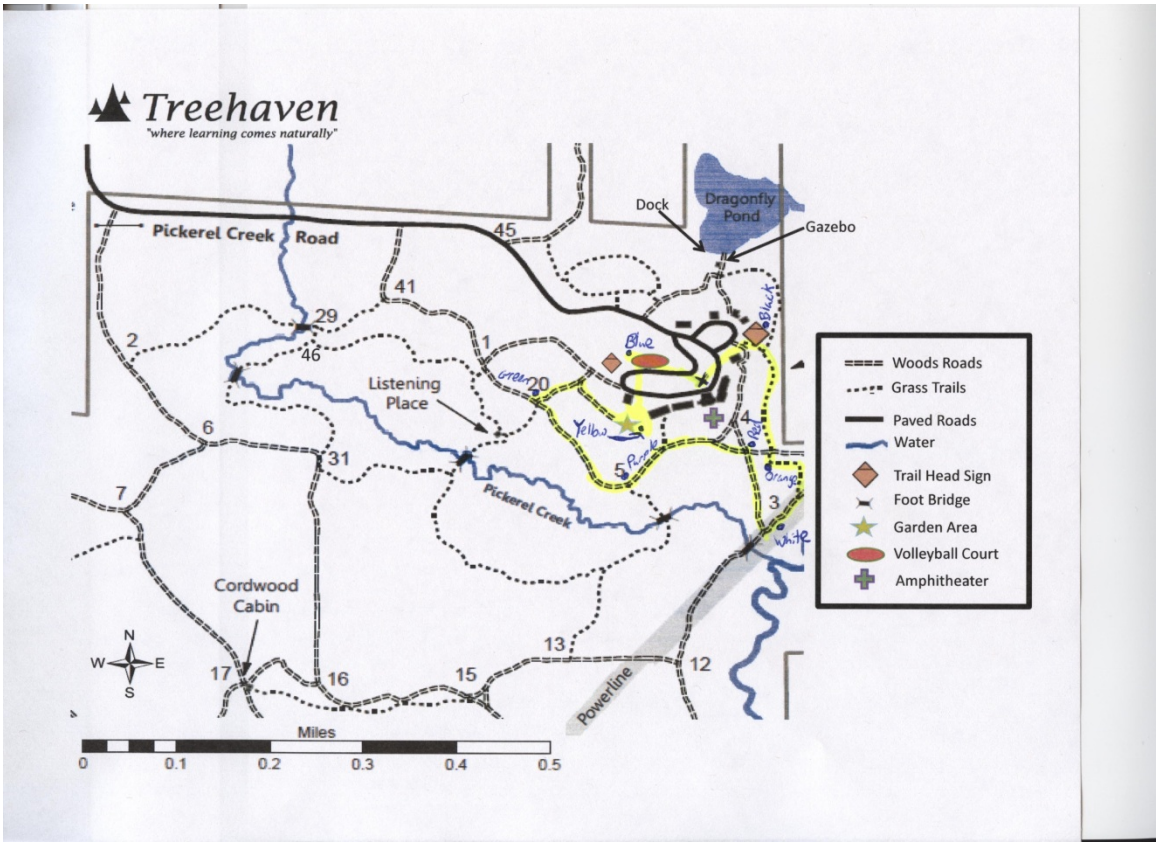
YELLOW

The trail at 4° is the way you should be going.
Your next clue is near a waterway that is flowing.

PURPLE

Continue down the path at a bearing of 339°.
Take a bearing of 55° at the next Treehaven sign.
Follow this path until you see a wooden trail.
Follow it at 2° and go up the hill.
When you get to the top of the hill, climb the stairs and take a right.
Your friends should finally be in sight.

Orienteering Course #3 Map



Orienteering Course #3: Cheat Sheet

Below is a description of the orienteering course #3 clues that you'll find. They are listed in the correct order in which your group will find the clues.

Starting Clue: Located on the eastern most Trail Head Sign, by the Fern Young Apartment.

Black: On the eastern most Trail Head Sign, by the Fern Young Apartment. This clue directs the group to take a bearing of 116° and follow the Ski Trail. You'll want to follow the Ski Trail until you reach a 4-Way intersection. At the intersection go straight. The clue is on a tree about 25ft after the 4-Way intersection.

Orange: On a tree after the 4-Way intersection on the Ski Trail. This clue directs you to continue down the path you are on until you reach the power lines. When the path you're on reaches the power lines, there's a fork in the road; **turn right**. The next clue is down this path about 50 yards on the left on a post that has **No ATV's and No Snowmobile** signs on it.

White: On a post by the power lines that has **No ATV's and No Snowmobile** signs on it. This clue directs you to walk downhill towards the bridge. When you reach the Treehaven Trail Sign #3 take a right turn. Do not go towards the bridge. This new path will take you to another 4-Way intersection. Your clue is on a tree at this intersection. If you turn right at the intersection, you'll see it on the left hand side, about 10ft away from the intersection.

Red: On a tree at the 4-Way intersection Southeast of Treehaven Sign #4. This clue directs you to follow the trail **WEST** of the 4-Way. When the trail meets another path, keep heading **WEST.** You'll go past a foot path that leads up a hill towards the living centers, and you'll come to the Treehaven Sign #5. The clue is on the back of the Treehaven Trail Sign #5.

Purple: Located on the back of the Treehaven Trail Sign #5. This clue directs you to follow a bearing of 254°. This will take you to the Treehaven Trail Sign #20. The next clue is on a tree behind the Treehaven Trail Sign #20. The tree is leaning over and looks like it's ready to fall.

Green: Located on a tree behind the Treehaven Trail Sign #20. This clue directs you to follow the path at bearing 85°. When you come to a fork in the path, take a right and head towards the garden. The next clue is on the back side of the garden shed.

Yellow: Located on the back side of the garden shed. This clue directs you to follow a bearing of 251° and head towards the volleyball court. The next clue is on one of the horseshoe pit boxes to the west of the volleyball court.

Blue: Located on of the horseshoe pit boxes to the west of the volleyball court. This clue directs you to head back towards Treehaven's Main Lodge.

Orienteering Course #3 Clues

START

I see that you're ready and standing at the starting line.
Your first clue is around the eastern most Trail Head Sign.

BLACK

You found that clue in a breeze.
The next one can be found taking a trail at bearing 116 degrees.
When you come to another small trail, take a bearing of 188°.
I want you to stay on track so you're not late.
At the 4-Way take a bearing of 160 degrees.
Your next clue is somewhere close, hidden amongst the trees.

ORANGE

Follow the path at a bearing of 144° to get to your next clue.
When you reach a trail by the power lines, stop. You know what to do.
Follow the trail at a bearing of 233°.
The next clue is close to a snowmobile and an ATV.

WHITE

Go downhill until you see a Treehaven sign.
If you follow a bearing of 343° at the sign then you will be fine.
Follow this path until you reach a 4-Way.
Your clue is hidden around this area, so please don't stray.

RED

If you want to find your next clue, pulling out your compass would be best.
Head in the cardinal direction of **WEST**.
Before long, your path will join another.
When this happens, follow 298° brother.
By traveling this direction, you'll spot a path leading up the hill that's nifty.
But, instead of heading up, you'll want to follow a bearing of 250°.
You're doing great, and you're getting close.
The next clue is around a Treehaven post.

PURPLE

Traveling at 254° will get you to the next clue.
You'll have to search hard because it's not in front of you.
The clue is near to a Treehaven post.
Look around the tree that is falling. I tell you it's close.

GREEN

The next clue is by an area that grows onions and chives.
To get there you must follow a bearing of 85°.
When you come to a fork in the road, I want you to stop please.
Your destination can be found at 153 degrees.
Walking down this path will lead you to the garden beds.
The clue is somewhere close to the wooden shed.

YELLOW

Following a bearing of 251°.
Will lead you to an area that spells fun, fun, fun.
Go through the trees and past the basketball backboard.
You should see a sandy volleyball court.
The clue is close. Can you smell it?
It's by a smaller sized sand pit.

BLUE

Congratulations you found it. You're almost to the end.
Follow a bearing of 117° to find your way back to your friends.

Treehaven Nature Hike Discussion Points

The following list of discussion points can be shared with hikers anywhere on Treehaven's property. However, I'd recommend using this information when you're hiking groups to the Listening Point and around the Beaver Pond.

1. History of Treehaven's Property

Over the years, Treehaven's landscape has been through some significant changes. In the pre-logging years, Treehaven was dominated by old growth red and white pine forests. During the logging years, 1840-1920, Treehaven was clear cut twice. The slash from these cuts was left on the ground as the loggers moved through the area searching for more trees to harvest. In 1934, a fire swept through Treehaven burning all of the slash left by the loggers, and all of the young vegetation that was on the landscape. This fire set the succession of the forest back to its beginning. Now Treehaven's property is primarily dominated by aspen and birch stands; with small pockets of red and white pine stands, hemlock stands, spruce, fir, and tamarack stands. This forest structure is extremely different from the historical records. However, Treehaven initiated a Land Management Plan in 2009 to start managing the forest to promote red and white pine forests. Selective tree thinnings, clear cuts, tree plantings, and prescribed burns are all planned management practices that will be used in the present and future years to promote the growth of red and white pines.

Treehaven's landscape was influenced by the glaciers thousands of years ago. There are multiple rolling hills and numerous large boulders scattered throughout the land, which are key characteristics of glacial activity in an area. The lowlands on the property are primarily boggy conditions with wetland vegetation and soils comprised of silt and clay particles. Upland areas are dominated by aspen stands, white birch stands, and red pine stands. The soil is well-drained and made up of sand and gravel. Big Pine Creek and Pickerel Creek flow through the property. Both streams are classified as trout streams and in the spring time trout fry are often caught in the streams during the routine aquatic habitat sampling surveys. There is a 12-acre pond in the northeast section of the property that is home to several waterfowl and wading birds during the spring and summer months. Sandhill cranes, American bitterns, great blue herons, mallard ducks, wood ducks, and red-hooded mergansers are among the list of birds spotted in and around the pond.

2. The Vallier Family and Biff Kummer

The majority of Treehaven's property was deeded to UWSP in 1979 from Dorothy Vallier and her second husband Jacque Vallier. The Vallier's donated the land to UWSP in the hopes that the land would be protected and used to promote environmental stewardship and environmental education for many years to come. The original parcel of land was about 850 acres in size; however, with land purchases and donations, Treehaven has increased their property size to 1,400 acres.

Dorothy and her first husband Gordon Kummer purchased their property in the 1950's for the purpose of practicing forestry, game management, and other land

restoration related activities (Burns, 2009). The family focused much of their efforts on tree plantings. They preferred to plant native species on the landscape and mostly planted red and white pine plantations.

Dorothy's son Biff Kummer still lives on a 200-acre parcel of land that is connected to Treehaven. Biff works with Treehaven's forester, Kevin Burns, to actively manage the forests and habitat types on Treehaven's property. Biff volunteers his extra time to benefit Treehaven and he's an active member of Treehaven's advisory board and executive board. Biff's property has been deeded over to Treehaven and will officially become part of Treehaven's property when Biff passes on. However, Biff is still young and active, and he has many healthy years in front of him.

3. Amelse Family

The Amelse family has been good friends of the Vallier's and Kummer's for many years. They have owned adjoining parcels of property to the Vallier's, and now Treehaven, since the 1920's. The Amelse family donates their time to Treehaven every year in honor of the Vallier's. They build bridges, boardwalks, and docks, along with performing maintenance on the trails. Because of their generosity towards Treehaven and their long connection with the Vallier's and Kummer's, the Amelse family was grandfathered into the Treehaven deed. They are the only people allowed to hunt on the property. In exchange for the rights to hunt on the property, the Amelse family must donate a certain amount of volunteer hours each year to Treehaven maintenance and construction.

Ary Amelse, who is now deceased, used Treehaven's property to hide from Al Capone and his Chicago gangsters during the night that Al Capone's distillery was raided by the federal government. Ary worked in the still and when he tried to escape from the police, he was shot in the leg climbing a fence. Ary laid low on Treehaven's property overnight in fear that he would either be arrested by the police or shot by Al Capone's gangsters if he went to the hospital. Ary tried to self-treat his wounds but eventually he had to go to the hospital and get his leg amputated because it succumbed to gangrene. Ary was never arrested and he lived long enough to share his tale with local residents of Tomahawk, Rheinlander, and Harrison County.

4. History of Beaver Pond

Historically, the beaver pond area wasn't a beaver pond at all. Up until the 1990's, this area had a fast moving, cold water stream with a gravel bottom substrate. However, a beaver moved into the area in the 1990's and dammed up the stream. The dam flooded the entire area below the observation deck and created a wetland ecosystem. Some vegetation species died and were removed from the area, but some species, like black spruce and tamarack, were helped by the changes that took place.

Historically, the stream was great for trout to use as spawning grounds. Trout require cold streams, with high current, and exposed gravel to lay their eggs in. The stream had these perfect conditions, until the beavers moved in. When the beavers moved in, the flow of the water slowed down because of the dam. Sediment started to collect in the

stream because it couldn't be washed downstream through the dam. The surface area of the water increased when the beaver pond impoundment flooded the surrounding landscape. When the water surface area increased, the water temperature increased as well because there was more surface water for the sun to heat up. With these significant changes to the ecosystem, trout quickly stopped using this area for their spawning grounds.

In the early 2000's, the beavers were removed from the beaver pond by a local trapper. The trapper was not permitted to take the beavers by Treehaven, but the trapper snuck into the property and trapped the beavers anyway. By the mid 2000's, the beaver dam washed away because it wasn't being maintained. However, the original beaver lodge is still intact on the property. Over the last 5 years or so, the water has slowly drained from the landscape and the beaver pond has once again become a narrow stream that flows through the property. The average water temperature has decreased due to the fact that there is less water surface area. Stream flow has increased, and sediment is slowly starting to move downstream. More and more gravel is being exposed on the substrate each year. We are starting to catch trout fry in the streams on Treehaven's property in the spring months. So, we know that adult trout are using the streams for spawning grounds once again.

5. Beaver Slide and Old Lodge

Walk down the trail to the left of the Listening Point and enter the bog. Go up the hill and through the woods while staying on the trail. The beaver slide and old lodge are about 60 yards before you get to the Treehaven Trail Sign #31.

The small ditch you see leading from the beaver pond area to the woods is the old beaver slide. When beavers lived on this pond, they would maintain this path so they had an access point to get to the pond from their lodge. If you were to follow this path in the opposite direction of the beaver pond, you would discover the remnants of an old beaver lodge. The slide was maintained by the beavers by sliding down it on their stomachs and packing down the mud with their body weight and tail.

6. Tamarack Trees:

The only evergreen that is deciduous. Tamaracks turn an amazing golden color during the fall. They can be found in low-laying areas like bogs, and can be spotted throughout Treehaven's property. On the beaver pond hiking trail, if you turn to the right, facing the Listening Point Observation Deck and walk down the path about 0.20 miles, you'll walk through a small stand of tamaracks. They are located in the section of the trail where the roots of the trees are above the ground. It's a little difficult to walk through this area. The ground is usually wet in this area, too.

7. White Pines

During the logging era, white pines were the #1 targeted tree to harvest. It's true that the lumber jacks basically clear cut the entire landscape and took almost every tree, but white pines were worth the most money. White pines were worth so much because they

grew extremely straight and tall. In addition to this, they float extremely well in water. They were easy to transport down the river to the mills.

White pines have long needles in clusters of five. The needles are very flexible, too. If you push down on the needles, they will bend instead of poking you (a red pine will poke you). White pines are very old growth trees. A healthy white pine can live upwards of 200-250 years or older. Historically, Treehaven and much of the Northwoods were dominated by white and red pine stands.

8. Red Pines

Red pines are extremely old growth trees, just like white pines. They can live to be well over 200 years old. Red pine needles are long and come in clusters of two. When you press down on them with your hand, they are less likely to bend and more likely to poke your hand. They prefer to grow in sandy, well-drained soils. Treehaven has tons of sandy, well-drained soils on the property, so red pine trees can be spotted all over the property. The Vallier family primarily planted red pine plantations throughout Treehaven between 1950-1980, and Biff still plants them today.

9. Balsam Firs

Balsam firs have a unique tree bark. It appears bubbly and ready to pop; and indeed it is. Each one of the bubbles is filled with sap. The sap is a defense mechanism that the tree has to ward away any insects that might want to burrow into the tree. If an insect tries to burrow into the tree, the tree's sap instantly starts flowing, and the insect becomes stuck in the sap and dies.

Native Americans found the sap of balsam firs incredibly useful. The sap has great antiseptic and healing properties. Native Americans used to rub balsam fir sap over their cuts and abrasions and the sap would clean the wound and close it off. The sap acts as nature's Neosporin.

10. Jack Pines and fire management on Treehaven (north of Treehaven Trail Sign #31)

Jack pines have short needles in clusters of two. Their pine cones also are turned in a way that the bottoms of unopened cones are turned towards the trunk of the tree. Jack pines are short lived trees, with an average lifespan between 60-80 years. They also depend on fire to reproduce. Their pine cones open up when they're exposed to intense heat. The jack pines around Treehaven Trail Sign #31 are starting to die. They look gray and their needles are falling off. The last fire to go through the area was somewhere between 1934 and 1938, which is about 80 years ago. Without fire on the landscape, pretty soon, there won't be any more jack pines on Treehaven's property. Some wildlife species are solely dependent on jack pine forests, such as the Kirtland's Warbler, who are summer-time residents of Michigan. The only place in the entire world that Kirtland's Warblers nest is in juvenile jack pine forests throughout the northern part of Michigan's Lower Peninsula and throughout the Upper Peninsula. They are on the endangered species list, and their habitat is shrinking every year due to urbanization and the lack of fire on the landscape.

To combat this problem, Treehaven conducted their first controlled burn on the property in 2011. They burned an area about 10-acres in size between the Treehaven Trail Signs #6 and #7. Fire is just one forestry management tool that is used on the property. We also conduct selective timber harvests, clear cut certain areas, plant trees throughout the property, have fenced off areas to monitor the browsing impacts that deer have on the landscape, and designate preservation areas where no management practices will be conducted. Perseveration areas are left to be natural.

11. Al Capone

During the 1920's and 1930's Al Capone, a Chicago gangster, brought bootlegging operations to the Northwoods of Wisconsin. This was the time of prohibition and The Great Depression, and there was a lot of money to be made running illegal distilleries. The distillery owned by Al Capone was the largest one in the Midwest. It was located in Lincoln County, outside of the City of Harrison. The operations took place in an old barn, hidden from the public. To throw the authorities off their trail, Al Capone installed oil drilling equipment on the property. This way, when heavy equipment and/or trucks were spotted by the barn or leaving the property, it didn't look too suspicious. Al Capone's distillery produced about 4-5 barrels of moonshine per day. Each barrel was worth about $500. They would distribute moonshine throughout the Northwoods of Wisconsin and the City of Chicago, using milk trucks as a cover.

Al Capone treated his workers well. In return he asked that they never talk about the distillery operations. He promised to pay his workers their regular wages if they were imprisoned for the operations, providing that they stayed quiet and didn't inform the authorities about the operations. The money would be directly given to family members of imprisoned workers. Capone also paid school children $1 per day to sit on a tree stump on the top of a hill and watch for any police cars. If one was spotted, the children would inform the workers. The workers would stop production, hide important equipment, and then enter secret hiding compartments in the barn. When everything was clear, they would start up again.

The distillery was raided by authorities twice and finally decommissioned in 1936. Al Capone was never "officially" linked to the distillery, even though everyone knew that it was his. He was finally arrested for tax evasion.

12. Wolves

There are about 850 wolves throughout the state of Wisconsin. On Treehaven's property we have two solitary wolves that will occasionally be seen moving throughout their territory. Wolves have large home territories; some wolves have home territories of over 50 square miles. Because of this, wolves are not commonly spotted on Treehaven's property, although they do use it.

Wolves have a bad reputation of being dangerous and harmful animals to livestock, pets, and people. Even though wolves do occasionally attack pets and livestock, these are extremely rare occurrences. The state government pays incentive money to farmers if they lose any livestock to wolves. Ironically, no other predatory animal has the same

incentive program. If your livestock is killed by coyotes, bear, or a cougar, you don't get any money. Attacks on humans are even rarer. There have only been two documented wolf attacks on people in North America. One occurred in Alaska, and one occurred in Northern Ontario.

A lot of people believe that wolves are responsible for eating all of the deer on the landscape and that they are the sole reason why hunting can be bad from year-to-year. This simply isn't true. The deer population for the state of Wisconsin is estimate to be around 1.7 million. The DNR estimates that the 850 wolves in the state of Wisconsin kill and consume approximately 18,000 deer per year. Wisconsin also has 50,000 coyotes. It's estimated that the coyotes in the state kill a minimum of 50,000 deer per year. There are also 30,000 black bears in Wisconsin. These black bears kill approximately 30,000 deer per year. Every fall, hunters take an average of 300,000 deer, and throughout the year approximately 35,000 deer are killed by vehicles on Wisconsin roads. Wolves only consume a small fraction of the white-tailed deer total population. Wolves are also trained hunters that target only the sick and injured deer (sometimes the deer that have been hit on the road are targeted). By targeting only the sick and injured deer, wolves can avoid getting injured during the attack. They also strengthen the deer population by eliminating the weakest members.

13. <u>Black Bear</u>

The DNR estimates that there are about 30,000 black bears in the state of Wisconsin. On Treehaven, we have two sows (females), plus their cubs (in 2012 one sow had three cubs and one sow had one cub), and one boar that are known to roam the property. Black bears are opportunistic omnivores. They'll eat just about anything. Their diet consists of berries, nuts, tubers, insects and larvae, small mammals, bird eggs, honey, carrion, garbage, and fish. Occasionally black bears will kill and consume deer fawns in the spring time. Black bears typically aren't a problem in the wild, although when they come into contact with people, and people feed them, they start associating people with food. This association can make bears turn aggressive towards people when a person doesn't have any food to give the bears. Sows are also extremely protective over their cubs. Make sure to avoid getting in between a sow and her cubs. If you do find yourself in the middle of a sow and her cubs, the sow may attack you! More often than not, the sow will give you a false charge. A false charge is when a black bear runs towards a person but quickly stops. This is a warning to the person (potential predator) to get away from her and her cubs. If you listen to the bear's warning and leave the area, you should be alright. Never play dead with a black bear. It doesn't work.

14. <u>Deer</u>

Deer are the real foresters and land managers in the state of Wisconsin. There are approximately 1.7 million deer throughout Wisconsin, and they browse on all types of vegetation. Over browsing has led to forests being stunted and not growing (successional growth) at normal records. Species such as white cedar and many oak species are experiencing little to no regeneration because deer love to eat these species. Ironically, white cedar is also a thermal cover habitat type for white-tailed deer during the winter.

With less white cedars on the landscape, deer have less thermal cover. The lack of thermal cover habitat during harsh winters can lead to winter kills on deer.

15. <u>Porcupine</u>

During the summer, porcupines have a large home range (35 acres); however, during the winter months they typically stay within a small group of large trees. Porcupines are herbivores. During the spring and summer they eat tree buds, flowers, clovers, grasses, and twigs. During the winter, a porcupine's diet changes to almost exclusively eating the inner-layer of tree bark called cambium. During the winter, if you see a lot of woodchips at the base of a tree (especially a white pine) you should look up. Chances are you'll spot a porcupine.

Porcupines cannot shoot their quills. Their quills are used for defense, not offense. The only animal brave enough to attack a porcupine in the northwoods is a fisher. Fishers love to eat porcupines and they will attack them in trees and on the ground. The only area a fisher can attack a porcupine's body is at its face. Fishers will continuously bite a porcupine in the face until it weakens and eventually dies. When the porcupine dies, the fisher eats the porcupines face and makes its way to the porcupine's insides. When the fisher is done eating, all that remains from the porcupines body is its skin and quills.

Appendix B

Interview Questions

1. What outdoor skills programs do you offer at your facility?
2. If you had to pick your strongest top three outdoor skills programs, which ones would they be?
3. What makes these outdoor skills programs so strong?
4. Do you follow the *NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence* when developing your outdoor skills programs?
5. To what extent do you tie environmental education into your outdoor skills curriculum?
6. How do you adapt each outdoor skills program to account for the different age and skill levels of your audience?
7. What two outdoor skills programs do you consider to be your weakest? How do you think you could make them stronger?
8. What trainings and certifications does your organization require your staff members to have prior to teaching an outdoor skills program?
9. What trainings and certifications do you feel would be ideal for all outdoor education staff members to have before teaching an outdoor skills program?
10. Does your organization have an Outdoor Skills Curriculum Guide in place for your staff members to use?
11. Can I get a copy of your organization's Outdoor Skills Curriculum Guide?

Appendix C

Interview Propositions

Proposition #	Proposition Name
1	All programs Offered
2	Outdoor Survival
3	Archery
4	Canoeing
5	Guns
6	Hands-on
7	Learning Styles
8	Skill Levels and Abilities
9	NAAEE Guidelines
10	State Standards
11	Physical Education Standards
12	Environmental Education
13	Talk About
14	Environmental Educators
15	Comfortable
16	Fly Fishing
17	BB Guns
18	Course
19	teach it effectively
20	Lots of Experience
21	Camp Marksmanship Program
22	NRA Instruction
23	American Canoe Association
24	Expensive
25	Adventure Based Experience Education
26	WFA
27	CPR
28	AED
29	O2
30	Lifeguard Certification
31	American Camps Association
32	Hunter's Safety Cert.
33	Curriculum
34	How To Guide

35	Teaching
36	Learn to Hunt Deer Program
37	Trapper Education
38	Crane Counts
39	Weekend Workshop
40	School Groups
41	Cater
42	Relationships
43	Proactive
44	Property
45	Animal Tracking
46	PowerPoint
47	Take Home
48	Family
49	Safety
50	Volunteers
51	Env. Ed. Standards
52	Science Standards
53	Environmental Awareness
54	Leave No Trace
55	Composting
56	Stewardship
57	Birding
58	Learn to Hunt Waterfowl Program
59	Certified Teacher
60	Chemical Immobilization Cert.
61	Project WILD
62	Project Learning Tree
63	First Aid
64	NOLS Training
65	High School Independent Study
66	Compass and Map Use
67	GPS/Geocaching
68	Snow Shoeing
69	Outdoor Cooking
70	Cross Country Skiing
71	Hits Home
72	Connection
73	Confident

74	Life-long
75	Progression
76	Wild Edibles
77	Timeframe
78	B.S. Env. Sci.
79	Wildfires Cert.
80	Fishing
81	Community Programs
82	Turkey Hunting Class
83	Small Craft Safety Cert.
84	Rock Climbing Cert.
85	Two Week Training Period
86	Team Teach
87	Incentive Program
88	Graduate Program
89	Summer Youth Program
90	Backpacking
91	Skagit Tour Program
92	Base Camp Program
93	Responsibility
94	WFR
95	Rock Climbing Program
96	Biking
97	Camping Program
98	Summer Camps
99	Horse Program
100	Nature Program
101	Wilderness Water Safety
102	Training Trip
103	All Day Hike
104	Master Naturalist
105	Gardening

Appendix D

Interview Categories

Category Code	Category Name	Supporting Propositions
A	Shooting Skills	3, 5, 17, 36, 58
B	Water Skills	4, 16, 80
C	Survival Skills	2, 37, 45, 76
D	Tripping Skills	66, 67, 69, 90, 97, 103
E	Winter Skills	68, 70
F	Other Land Recreational Skills	57, 95, 96, 99, 105
G	Academic Standards	10, 11, 51, 52
H	Factors contributing to weaker programs	57, 58, 66, 76, 91, 92, 100
I	Outdoor Skills Instructor Desired Background	15, 18, 20, 73, 78
J	Required Trainings & Certifications for all Outdoor Skills Instructors	27, 63, 85
K	Required Trainings & Certifications for Wilderness Trip Leaders	26, 27, 63, 85, 101
L	Recommended Training & Certifications for Wilderness Trip Leaders	23, 30, 54, 64, 94, 102
M	Environmental Educators and Teacher Trainings	54, 59, 61, 62, 88, 104
N	Water Trainings	23, 30, 83, 101
O	Shooting Trainings	21, 22, 32, 82
P	Outdoor Skills Facility Certifications	31
Q	Rock Climbing Certifications	25, 84
R	Additional Trainings Outdoor Skills Instructor may Pursue	28, 29, 60, 79
S	Audience Needs must be met for them to enjoy Outdoor Skills Programing	4, 6, 7, 8, 15, 41, 47, 49, 71, 72, 73, 75, 93
T	The Goals of Teaching Outdoor Skills Programs to People	12, 15, 53, 54, 56, 71, 72, 74
U	School Needs to Attend an Outdoor Skills Program	10, 11, 33, 40, 41, 51, 52, 65,77
V	Outdoor Skills Program Instructors Needs to be Successful	7, 15, 18, 20, 35, 41, 50, 73, 85, 86, 102
W	There are many Different Settings for Outdoor Skills Programs to Reach their Target Audiences	39, 40, 48, 81, 88, 89, 98
X	Documenting Outdoor Skills Programs	33, 34

Y	The Importance of Using the NAAEE Nonformal Education Guidelines for Excellence while developing Outdoor Skills Programs	9
Z	Organization's Needs to Make Outdoor Programs Successful	19, 38, 42, 43, 44, 50, 72
AA	Factors that Contribute to Unsuccessful Outdoor Skills Programs	10, 15, 16, 17, 33, 41, 42, 57, 58, 66, 76, 91, 92
AB	Reasons for not taking part in a certain training	24
AC	Incorporating Environmental Education into Outdoor Skills Programs	2, 4, 12, 14, 36, 41, 44, 45, 53, 54, 55, 56, 65, 66, 67, 68, 80, 90, 95, 96, 103, 105
AD	You can adapt outdoor skills programs to fit different skill levels and abilities	3, 4, 8, 17, 45, 68, 69,70, 103
AE	Different Audiences & Settings have Different Needs	6, 7, 10, 15, 39, 40, 41, 48, 71, 77, 81, 98
AF	Outdoor Skills Instructors Different Strategies of Teaching	2, 3, 4, 6, 12, 19, 41, 47, 50, 66, 75, 86

Appendix E

Interview Themes

Theme Code	Theme Name	Supporting Categories
1	The OS programs that OS centers offer are based on the landscape of their property, their OS equipment, and their mission statement.	A, B, C, D, E, F
2	For OS programs to be successful, the needs of all stakeholders must be met.	S, U, V, Z, AE
3	Outdoor skills programs can be unsuccessful if the needs of stakeholders are not met.	H, AA
4	OS instructors' background education, experience, and comfort level teaching OS programs will determine if they are effective instructors.	I, V
5	OS curricula are typically program lesson plans compiled together into one guidebook and should be aligned with academic standards.	G, X
6	The NAAEE Nonformal Environmental Education Programs: Guidelines for Excellence are not commonly used when developing outdoor skills curricula.	Y
7	Environmental education is easy to tie into most OS programs and should be incorporated into OS programs where it is appropriate.	AC
8	Outdoor skills can be taught to various age and skill levels by advertising programs to different audiences which meet their needs.	S, W, AD, AE
9	Using multiple teaching strategies will increase an instructor's effectiveness and make the OS programs more enjoyable for the audience.	S, AF
10	People of all ages benefit greatly by participating in outdoor skills programs.	T
11	The trainings that OS instructors complete should relate to the OS programs they teach.	J, K, L, M, N, O, P, Q, R, AB
12	All OS instructors should be required to complete some trainings before teaching an OS program or leading a trip.	J, K

Appendix F

IRB Form

University of Wisconsin-Stevens Point
Institutional Review Board for the Protection of Human Subjects

Protocol for Original Submissions

A complete protocol must be submitted to the IRB for approval prior to the initiation of any investigations involving human subjects or human materials, including studies in the behavioral and social sciences.

For all research protocols, please submit the following:

- **1 printed copy with Faculty Mentor and Department Chair signatures** of (1) the completed protocol; (2) project abstract; and (3) samples of informed consent forms. PROTOCOLS LACKING ANY ONE OF THESE THREE ELEMENTS WILL NOT BE APPROVED.
- **A second copy of this page, with signatures.**
  Printed materials should be submitted to: **IRB/Grants Office, 204 Old Main.**
- **Electronic copies of all submission materials (multiple files are acceptable)** emailed as attachments to Jason R. Davis, IRB chair: jdavis@uwsp.edu AND Sharon Courtney, Grants Office: scourtne@uwsp.edu

PLEASE TYPE

Project Title: The Development of a Best Practices Outdoor Skills Curriculum for UWSP-Treehaven

Principal Investigator: Christopher Stephen Homeister

Department: College of Natural Resources Rank: Graduate Student

Campus Mailing Address: 5400 N. Black Oak Lake Rd. Land O' Lakes, WI 54540

Telephone: (734) 740-9770 E-mail address: chome440@uwsp.edu

Faculty Sponsor (if required): Corky McReynolds
(Faculty sponsor required if investigator is below rank of instructor.)

Expected Starting Date: 03/2012 Expected Completion Date: 05/2013

Are you applying for funding of this research? Yes _____ No X

If yes, what agency? _____

Please indicate the categories of subjects to be included in this project. Please check all that apply.

X Normal adult volunteers	_____ Minors (under 18 years of age)
_____ Incarcerated individuals	_____ Mentally Disabled
_____ Pregnant women	_____ Other _____ (specify)

(**Faculty Member**) I have completed the "Human Subjects Protection Training" (available at http://www.uwsp.edu/special/irb/start.htm) and agree to accept responsibility for conducting or directing this research in accordance with the guidelines.

_____

(Signature of Faculty Member responsible for research)

(**Department Chair or equivalent**) I have reviewed this research proposal and, to the best of my knowledge, believe that it meets the ethical standards of the discipline.

_____

(Signature of Department Chair or equivalent)

******************************* Do not write below this line – for IRB use only *******************************

IRB approval_____
Date_____
(Signature of IRB Chair)

Approval for this research expires one year from the above date.
If research is not completed by this date, a request for continuation must be filed and approved before continuing. **Revised form: September 2010**

Proposal Abstract

Write a brief description of the purpose of the proposed research project. (100-200 words)

This project will focus on developing an Outdoor Skills Curriculum for UWSP-Treehaven, located in Tomahawk, WI. Treehaven has been offering outdoor skills programs to people of all ages for several years, but they have no curriculum guide or set of standards to follow when they deliver these programs. By conducting semi-structured non-formal interviews with ten Environmental Education (EE) centers and Outdoor Education (OE) centers, I will generate a best practice Outdoor Skills Curriculum Guide for Treehaven to use in the future. The curriculum guide will have five to ten outdoor skills programs included in it. From the data collected during the interview process, I will analyze the best practices that have been used by these handpicked organizations to ensure that the target audience is successfully reached. Each outdoor skills program will have several activities included in the program guide that can be substituted in, or out, so the program becomes adaptable to different age groups and skill levels. In addition to developing the Outdoor Skills Curriculum, I will also investigate what trainings and certifications EE and OE centers require their staff to have before they teach any outdoor skills programs. Trainings and certifications can be used to increase the knowledge of the instructor of outdoor skills programs. As of now, Treehaven does not require their staff to complete any trainings or obtain any certifications to teach outdoor skills programs. That may change if it's found that many EE and OE centers do require their staff to go through certain trainings and obtain certain certifications.

Please complete the following questions for all research.

1. Describe the characteristics of the subjects, including gender, age ranges, ethnic background, health/treatment status and approximate number.

Subjects will be adult professional directors and educational program staff members of environmental education centers and summer camps. Both males and females will be interviewed; the ages of the interviewees will range from the mid 20's to the high 60's.

2. Indicate how and where your subjects will be obtained. Describe the method you will use to contact subjects.

My subjects were obtained by contacting different EE Centers and Summer Camps through email and telephone to ask if individuals would be willing to volunteer for the program. Each subject will be interviewed over the telephone and asked to share information about their organization's outdoor skills programs. They will also be asked to share information on the certifications they require their program staff to have before teaching outdoor skills programs at their facility.

3. What are you going to ask your subjects to do (be explicit) and where will your interaction with the subjects take place?

Subjects will be asked to answer 11 questions in a semi-structured non-formal interview over the telephone. The interview will take up to one hour to complete.

4. Will deception be used in gathering data? Yes _____ No X
If yes, describe and justify.

5. Are there any risks to subjects? Yes _____ No X
If yes, describe the risks (consider physical, psychological, social, economic, and legal risks) and include this
description on the informed consent form.

6. What safeguards will be provided for subjects in case of harm or distress? (Examples of safeguards include having a counselor/therapist on call, an emergency plan in place for seeking medical assistance, assuring editorial rights to data prior to publication or release where appropriate.)

Subjects will be notified that their responses will be kept completely confidential. Subjects will also be notified that the researcher will not be evaluating their organization's outdoor skills programs. Since subjects are volunteering their time and information, they will not be forced to answer all of the interview questions.

7. What are the benefits of participation/involvement in this research to subjects? (Examples include obtaining knowledge of discipline, experiencing research in a discipline, obtaining course credit, getting paid, or contributing to general welfare/knowledge.) Be sure to include this description on the informed consent form.

Each subject and organization that volunteers to be interviewed for this research project will be offered a finalized copy of the Outdoor Skills Curriculum Guide that will be produced by the research. Each organization may then use the Curriculum Guide.

8. Will this research involve conducting surveys or interviews? Yes ~~X~~ No ~~—~~
   If yes, please attach copies of all instruments or include a list of interview questions.

Below is a list of the research questions that will be asked during the semi-structured interviews.

1. What outdoor skills programs do you offer at your facility?
2. If you had to pick your strongest top three outdoor skills programs, which ones would they be? And, why?
3. What makes these outdoor skills programs so strong?
4. Do you follow the *NAAEE* Nonformal Environmental Education Programs: Guidelines for Excellence when developing your outdoor skills programs?
5. To what extent do you tie environmental education into your outdoor skills curriculum?
6. How do you adapt each outdoor skills program to account for the different age and skill levels of your audience?
7. What two outdoor skills programs do you consider to be your weakest? How do you think you could make them stronger? And, why?
8. What trainings and certifications does your organization require your staff members to have prior to teaching an outdoor skills program?
9. What trainings and certifications do you feel would be ideal for all outdoor education staff members to have before teaching an outdoor skills program?
10. Does your organization have an Outdoor Skills Curriculum Guide in place for your staff members to use?
11. Can I get a copy of your organization's Outdoor Skills Curriculum Guide?

9. If electronic equipment is used with subjects, it is the investigator's responsibility to determine that it is safe, either by virtue of his or her own experience or through consultation with qualified technical personnel. The investigator is further responsible for carrying out continuing safety checks, as appropriate, during the course of the research. If electronic equipment is used, have appropriate measures been taken to ensure safety? ***Yes*** No

A tape recorder will be used to record the interviews. There will be no risk involved to the subjects by using this tape recorder.

10. During this research, what precautions will be taken to protect the identify of subjects and the confidentiality of the data?

Semi-structured interviews will be conducted over the telephone. Interviews will be recorded using a tape recorder. The researcher will transcribe each interview after they are completed. After the interviews are transcribed, the interview tapes will be destroyed. The data collected will be compiled and secured by the researcher to ensure that each subject's identity is kept confidential.

11. Where will the data be kept throughout the course of the study? What provisions will be taken to keep it confidential or safe?

The data will be kept in the researcher's office. The data will not be shared with anyone except the individual being interviewed and the researcher.

12. Describe the intended use of the data by yourself and others.

The data that is being collected through the use of semi-structured interviews over the telephone will be used to develop a best-practices Outdoor Skills Curriculum Guide for UWSP-Treehaven.

13. Will the results of the study be published or presented in a public or professional setting?
    Yes ___X___ No_____
    If yes, what precautions will be taken to protect the identity of your participants? **State whether or not subjects will be identifiable directly or through identifying information linked to the subjects.**

Subjects will not be identifiable directly or through identifying information linked to the subjects.

14. State how and where you will store the data upon completion of your study as well as who will have access to it? What will be done with audio/video data upon completion of the study?

The transcribed data collected by the researcher will be kept in his office. The audio tapes used to record each interview will be destroyed as soon as they are transcribed by the researcher.

A completed protocol must include a copy of the Informed Consent Form or a statement as why individual consent forms will not be used. Revised form: January 2001

(Include this page ONLY if information on this page applies to your project)

15. Please identify personnel assisting in conducting this research project. Include students or others who will be carrying out or directly supervising the carrying out of the research.

    Name:
    Position: Campus Phone:
    Campus Address:

    Name:
    Position: Campus Phone:
    Campus Address:

    Name:
    Position: Campus Phone:
    Campus Address:

    Name:
    Position: Campus Phone:
    Campus Address:

    Name:
    Position: Campus Phone:
    Campus Address:

    Please note: Everyone having contact with human subjects must have reviewed the "Guidelines for Human Subject Research" (available at http://www.uwsp.edu/special/irb/start.htm**). The principle investigator assumes responsibility for insuring this requirement has been met.**

16. Complete the section below if you will obtain access to all or some of the subjects through cooperating institutions not under the University of Wisconsin's control. Use the following format for each institution with responsibility for human subjects participating in this activity:

    Name of official:
    Title: Phone:
    Name and address of institution:

    Subject Status: (wards, residents, employees, patients, etc)
    Number of subjects: Age Range of subjects:

17. If subjects from another institution are involved, and approval was obtained from a legally constituted IRB at that institution, please attach a copy of the approval. (Please note that this does not release you from the obligation to obtain approval from the UWSP IRB for Human Subjects.)

A completed protocol must include a copy of the Informed Consent Form or a statement as why individual consent forms will not be used.

Revised form:

January 2001

Appendix G

Informed Consent to Participate Form

Informed Consent to Participate in Human Subject Research

The purpose of this project is to develop a best practices Outdoor Skills Curriculum for UWSP-Treehaven, located in Tomahawk, WI. For this project, the researcher will be interviewing 10 different environmental education centers and summer camps to gain information on how different centers throughout the country teach different outdoor skills programs. Interviews will be conducted using a telephone and they will be in a non-formal semi-structured setting. The researcher will be asking centers and camps questions regarding what outdoor skills programs they teach, how each organization modifies each outdoor skills program to meet their specified audience's needs, and what trainings and certifications are required by each organization before a staff member can teach an outdoor skills program. Each subject will be asked to answer the same 11 questions to the best of their ability and volunteer one hour of their time to complete the interview.

Each interview conducted by the researcher will be recorded using a tape recorder. When the interview is completed, the researcher will transcribe the interview and then destroy the tapes for that interview. The transcribed interviews will be kept in the researcher's office and will not be released to the public. This will ensure the confidentiality of each subject.

As compensation for volunteering to be interviewed for this project, each subject will be offered a copy of the finalized Outdoor Skills Curriculum that is developed from the research conducted.

Since participation in this project is voluntary, if at any point a subject feels uncomfortable answering a question, they can choose to decline to comment on it. Subjects can also decline further questions and drop out of the interview at any time they feel it is necessary.

If you have any questions regarding the research project, the interview process, or results of your interview, feel free to contact the researcher at any time. Please call or write:

Chris Homeister
Field Instructor: Graduate Student
University of Wisconsin-Stevens Point
5400 N. Black Oak Lake Rd.
Land O' Lakes, WI 54540
(715) 547-1366

If you have any complaints about your treatment as participant in this study, please call or write:

Dr. Jason R. Davis, Chair
Institutional Review Board for the Protection of Human Subjects
School of Business and Economics
University of Wisconsin-Stevens Point
Stevens Point, WI 54481
(715) 346-4598

Although Dr. Davis will ask your name, all complaints are kept in confidence.

I have received a complete explanation of the study and agree to participate.

Name_____ Date _____

(Signature of subject)

This research project has been approved by the UWSP Institutional Review Board for the Protection of Human Subjects.