LOCAL RESIDENTS OUTDOOR RECREATIONAL CONFLICT: AN INSTRUMENT DEVELOPMENT

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LOCAL RESIDENTS OUTDOOR RECREATIONAL

CONFLICT: AN INSTRUMENT DEVELOPMENT

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Abstract: Outdoor recreation are activities experienced and dependent upon the natural environment. When goals of the outdoor recreational experience are hindered due to the behavior of others outdoor recreational conflict occurs. While there are many studies that are valid and reliable, the instruments are designed for one location, set of activities, and/or user groups. Utilizing methodological approaches of validation and reliability testing provided an opportunity to create an instrument that can be utilized in a variety of outdoor recreational location, considering a variety of outdoor recreational activity, and implement different user groups without having to test the validation again. In addition data was collected to understand recreational conflict residents may perceive when utilizing the same natural resources as nature-based tourists.

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CHAPTER I

Introduction

Three aspects of tourism need to work together agreeably for an area to have success as a tourism destination (Zhang, Inbakaran, & Jackson, 2006). Those three elements are the community, the industry, and the tourist (Andriotis & Vaughan, 2003; Zhang et al., 2006). Tourism alone has been estimated as possibly the world's largest industry (Sharpley, 2014; Tisdell & Wilson, 2012). Tourism can be economically beneficial, but with those benefits, there are also detriments (Wall & Mathieson, 2006). One of those detriments can be the conflict between the tourist and the residents (Wall & Mathieson, 2006). If the cost of tourism outweighs the benefits in the eyes of the residents, their lack of support or disdain for the tourist may cause a threat to the tourism industry at that location (Lawson, Williams, Young, & Cossens, 1998).

Within the broad umbrella of tourism, one subset is nature-based tourism. Nature-based tourism is often used to benefit a local community economically and endorse conservation of the natural environment. Worldwide participation in nature-based tourism is on a steady increase (Balmford et al., 2009). There are three impacts to consider when nature-based tourism is involved in a location. Those influences include economic, ecological, and social factors (Fennell, 2014; Goeldner & Ritchie, 2009). Studying the social implications of nature-based tourism is the examination of influence nature-based tourism may have on the residents' daily lives (Fennell, 2014).

There are many reasons for tourist to be drawn towards nature-based tourism. One reason a tourist may choose nature-based tourism is to get away from the busy everyday life and connect back with nature through outdoor recreational activities. Outdoor recreation is recreational activities, events, or experiences that are involved and reliant on nature (Moore & Driver, 2005). Outdoor recreation can include activities such as hiking, mountain biking, skiing, snowmobiling, rafting, kayaking, fishing and more (Confer, Thapa, & Mendelsohn, 2005; Knopp & Tyger, 1973; Walker & Shafer, 2011).

In 2015, about 142 million or 48.4% of the population of America reported participating in outdoor recreational activities within the past year (Outdoor Foundation, 2016). Along with the growth of both nature-based tourism and outdoor recreation, and a decline of land available to the public for outdoor recreation, outdoor recreational conflict can develop (Moore & Driver, 2005).

Outdoor recreational conflict is the personal behaviors of individuals and/or parties that inhibits or challenges at least one party to achieve their recreational goals (Confer et al., 2005; Jacob & Schreyer, 1980; Knopp & Tyger, 1973; Moore & Driver, 2005; Schneider & Wynveen, 2015; Vaske, Donnelly, Wittmann, & Laidlaw, 1995; Walker & Shafer, 2011). Loud parties can cause conflict towards individuals seeking quiet and solitude. Showing up to a reserved campsite to see someone else camping in the area may lead to conflict between both parties. One causation for outdoor recreational conflict is overcrowding in natural settings (Moore & Driver, 2005). No campsites being available or not being able to get the boat into the lake due to the number of boaters and/or resource limits can lead to people perceiving crowding and conflict.

Crowding can be defined as stress that has been caused by the disproportion of one's supply and demand for space (Stokols, 1972). When one refers to a need for space, it is insinuating that one must coordinate that space with another person (Stokols, Rall, Pinner, & Schopler, 1973). This demand may lead to an impairment in the interaction with others, due to the perceived restriction and the feeling of being crowded (Stokols et al., 1973).

Recreational conflict, including crowding, can be mitigated by a variety of coping mechanisms (Manning, 2011; Moore & Driver, 2005). There are ways individuals—both tourists and residents— face or negotiate their way through crowding and/or recreational conflict (Moore & Driver, 2005). Manning (2011) lists the coping strategies like substitution, redefining, and rationalizing.

Statement of the Problem

The resident and tourist relationship can determine whether the tourists has had a fulfilling experience from their trip (Reisinger & Turner, 2002). Current research does not go into detail the scope of how residents' feelings towards tourists may potentially impact their behaviors towards tourism (Sharpley, 2014; Woosnam, 2011). Along with cultural and social benefits, residents also see negative aspects of tourism, such as crowding and congestion (Andereck, Valentine, Knopf, & Vogt, 2005). These negative aspects may lead to conflict between that resident and the tourist (Doğan, 1989). This conflict between the residents and tourists may have led residents to resist tourist/tourism efforts and retreating from areas perceived as crowded (Doğan, 1989). The resentment residents may have towards tourist may even result in an increase in crimes in theft and larceny towards the tourist (Jud, 1975). Additionally, other user-groups may perceive may perceive recreational conflict that causes one or more participants/participant-groups to employ coping strategies.

Although much of the research does study the importance of outdoor recreational conflict, there is a lack of a standardized instruments that can be utilized for outdoor recreational conflict without testing validity and reliability every time a study is to be performed (Mann & Absher, 2008; Vaske, Needham, Cline, 2007; Vittersø, Chipeniuk, Skår, & Vistad, 2004).

Significance of the Study

Leisure and recreation is an important aspect of a person's quality of life (Goodale & Godbey, 1988; Henderson, 2014; McLean & Hurd, 2015). Throughout history, when people are deprived of their leisure, people either revolt or recreate secretly (Goodale & Godbey, 1988; Henderson, 2014; McLean & Hurd, 2015). Leaders historically have changed laws to provide recreation that will assist in increasing people's perception of their quality of life (Goodale & Godbey, 1988; Henderson, 2014; McLean & Hurd, 2015). Although initially accepted and even encouraged by residents, as tourism impacts the residents' quality of life by crowding, congestion, and other factors, resistance by the residents can begin to form (Doxey, 1975).

When residents feel their quality of life is vulnerable due to tourists, residents may react with a variety of coping or negotiation strategies. A potential way to understand how nature-based tourism impacts residents may include identifying if the tourists are creating recreational conflict with the residents when utilizing the same natural resources.

Creating a standardized valid and reliable instrument may not only help in understanding the recreational conflict between local residents and tourists, but it may also be usable at other locations, comparing different factors, and considering different recreational activities.

Purpose and Hypothesis

The purpose of the study is to develop a standardized instrument that can be utilized to better understand the recreational conflict perceive within nature-based recreation. Although data collection for reliability testing focuses on the surrounding area of DuPont State Recreational Forest (DSRF), it is intended to be used in many locations, with multiple recreational activities, and with varying user groups in further research. This standardized developed instrument may help in understanding a variety of questions, such as, what impacts tourists have on residents' personal recreation choices and how those residents react to the situations they face due to tourists impacts. The research from the instrument development may help create a better understanding and management decisions related to three factors: the industry, conflict, and conflict impact.

For development of a standardized instrument, the reliability testing data collection for the location, activities, and user groups have been determined as DSRF; mountain biking, horseback riding, and hiking; and residents/tourists. This research may help define:

1. Whether there is a relationship between nature-based tourist crowding at outdoor recreational resources and resident perceived outdoor recreational conflict based on level of experience, frequency of participation, and types of outdoor recreational activities
2. The level of outdoor recreational conflict expressed by residents due to nature-based tourists will impact the degree of negotiation and/or coping strategies used by the local residence.
3. Development of a standardized instrument for future outdoor recreation conflict research.

Assumptions of the Study

Assumptions must be made for this study to be conducted:

1. The sample of this study is made of residents of some form of an active outdoor recreational location.
2. Tourist must frequently attend the outdoor recreational opportunities available in the area.
3. The residents prefer some of their recreation to be in an outdoor or nature-based setting.

Limitations of the Study

Limitations of this study are as follows:

1. Although there will be an attempt to get a larger sample size there is a possibility of a small number due to time, finances, and accessibility.
2. The sampling method of the next person by systematic random sample may cause under-representation or over-representation due to persons in the area at that time can undermine the opportunity to make generalizations (Mills & Gay, 2016).
3. Brevard, North Carolina and DSRF are located at the tip the Blue Ridge Mountains surrounded by terrain with numerous recreational opportunities. The season and weather at that time of data collection could include greater or lesser numbers of persons available to survey.
4. Due to the fear of offending tourists, many locations maybe hesitant about allowing access to collect data. This may impacted by the factor that many local residents do not attend their regular locations due to large amounts of tourists.

Definitions and Terms

Outdoor recreation: Outdoor recreation is the subset of recreational activities that are to be experienced and dependent on the natural environment (Moore & Driver, 2005). Activities in outdoor recreation and nature-based tourism can include: hiking trails, biking, skiing, snowmobiling, rafting, kayaking, and fishing, etc. (Confer et al., 2005; Edginton, Hudson, Scholl, & Lauzon, 2011; Knopp & Tyger, 1973; Walker & Shafer, 2011).

Nature-based tourism: Nature-based tourism is tourism that includes properties of a natural setting, focus on specific elements of the environment, and may have to some degree the purpose of conservation of natural areas (Hall & Boyd, 2005).

Outdoor recreational conflict: Recreational conflict is the idea that the objectives of a recreational activity being hindered due to the behavior of another outside force (Moore & Driver, 2005).

Crowding: Crowding is the concept of stress that is caused by the disproportion of one's supply and demand for space (Stokols, 1972). When one refers to the need for space, it is insinuating that one must closely coordinate that space with another person(s) (Stokols, 1972; Stokols, Rall, Piner & Schopler, 1973). The interaction with others could lead to a perceived restriction and the feeling of being crowded (Stokols et al., 1973).

CHAPTER II

Review of Literature

One subset of outdoor recreation is nature-based tourism. This subset may have the potential for developing conflict between tourists and residents due to perception of crowding and behaviors. If conflict is perceived the coping mechanism will follow. This section is structured by exploring relevant literature associated with the conceptual areas that build a foundation for this research. Areas describing the concepts of this study are as follows: outdoor recreation, recreational conflict, crowding, nature-based tourism, tourism crowding, coping, the location of the study, standardized instruments, and the summary.

Outdoor Recreation

There have been conflicting viewpoints about an actual definition for outdoor recreation (Moore & Driver, 2005). Definitions have included recreation minus the restrictions of a building, any fun outdoors, and interaction between partakers and the natural setting (Cottrell & Cottrell, 1998; Douglas, 2000; Ibrahim & Cordes, 1993). For this study, outdoor recreation consists of those recreational activities that are to be experienced in and are dependent on the quality of the natural resources (Moore & Driver, 2005). Outdoor recreation activities can include, but are not limited to activities such as summer camps, nature-based tourism, hiking trails, biking, skiing, snowmobiling, rafting, kayaking, fishing (Confer et al., 2005; Edginton et al., 2011; Knopp & Tyger, 1973; Walker & Shafer, 2011).

Outdoor recreation understanding and research evolved from the concept of just the activity to a behavioral approach (Manning, 2011). This shift in understanding outdoor recreation investigates people's motivations and satisfaction to participate in outdoor recreation (Manning, 2011). This behavioral approach suggests that many people participate in outdoor recreation with an end goal in mind versus just engaging in an activity (Crandall, 1980). These goal driven demands developed four levels of outdoor recreation desire (Driver & Brown, 1978; Haas, Driver, & Brown, 1980). First is the core desire of the activity, such as going climbing (Driver & Brown, 1978; Haas et al., 1980). Next is the want for a particular setting, such as solitude (Driver & Brown, 1978; Haas et al., 1980). Third is the motivators, such as the desire for physical exercise (Driver & Brown, 1978; Haas et al., 1980). Lastly is a search for benefits, such as a desire for better self-esteem (Driver & Brown, 1978; Haas et al., 1980). When an individual's or a party's goals of an outdoor recreational experience are inhibited by the behaviors of others, outdoor recreation conflict may begin to form.

Recreational Conflict

Outdoor recreation conflict occurs when the objectives of an outdoor recreational activity are hindered due to the behavior of another outside force (Moore & Driver, 2005). For outdoor recreational conflict to exist, there must be a contribution of an undue stress among at least one participant of the recreational activity or activities (Schneider & Wynveen, 2015), and the person's end goal of the outdoor experience must be obstructed due to the behavior of someone else (Jacob & Schreyer, 1980). The framework of Outdoor Recreational Conflict Theory has referenced goal interference (Jacob & Schreyer, 1980).

The Goal Interference or Outdoor Recreational Conflict theory evolved from two previous theories: Expectancy Theory and Discrepancy Theory (Jacob & Schreyer, 1980; Manning, 2011). Expectancy Theory suggests that human behaviors such as outdoor recreation is done with an end goal in mind (Jacob & Schreyer, 1980; Manning, 2011; Vroom, 1964). Discrepancy Theory is one's distaste towards an outdoor recreational activity due to the inability to achieve a desired goal (Jacob & Schreyer, 1980; Manning, 2011). These two theories merged into one concept referring as the interference of one achieving their goal due to the behavior of another (Manning, 2011). Goal interference developed into Outdoor Recreational Conflict Theory (Jacob & Schreyer, 1980).

Outdoor recreation, like other forms of recreation, is more than just the activity, but a means toward an experience (Clausen & Knetsch, 1966; Manning, 2011; Moore & Driver, 2005). Clausen and Knetsch (1966) identifies the outdoor recreation experience in five phases of: 1) anticipation and planning an outdoor recreation activity, 2) going to the destination of the outdoor recreation activity, 3) participation of the outdoor recreation activity, 4) the time heading home fromt the outdoor recreation activity, 5) and recollection of the outdoor recreation activity. At any point of the recreational experience, one may have their goal inhibited by another person's behavior, which could lead to outdoor recreational conflict. It does not just have to happen during the actual activity.

However, not all types of conflict are included in outdoor recreational conflict or goal interference:

1. Outdoor recreational conflict is not competitive concepts where one person is intentionally preventing another person from obtaining their objective (Jacob

& Schreyer, 1980). For example, two individuals competing in a fishing competition is not outdoor recreational conflict.

2. Poor judgment on one's own part is not outdoor recreational conflict (Jacob & Schreyer, 1980). Having to cut a hiking trip short because one does not bring enough water is poor judgement on that person's fault. This is not due to the behavior of other people, which is why it would not be outdoor recreational conflict (Jacob & Schreyer, 1980).

Outdoor recreational conflict can be perceived or observed (Manning, 2011; Vaske, Donnelly, et al., 1995; Vaske et al., 2007; Vaske, Wittman, Laidlaw, & Donnelly, 1995). Knowing that conflict can be perceived but may be and not actually witness resulted in the development of the theoretical model of social value conflict in outdoor recreation (Manning, 2011; Vaske, Donnelly, et al., 1995; Vaske et al., 2007; Vaske, Wittman, et al., 1995). This model implies that there could be a goal interference in which individuals can be elitist and believe that a natural resource should only be used for their choice of outdoor recreation. Individuals may have different philosophies of how the natural environment can be utilized; and the tolerance to accept other's lifestyles may vary (Jacob & Schreyer, 1980). Social values conflict is a major factor when considering outdoor recreation conflict (Manning, 2011; Vaske, Donnelly, et al., 1995; Vaske et al., 2007; Vaske, Wittman, et al., 1995). The social value aspect leads to the model suggesting conflict may be an observed conflict or a perceived conflict (Figure 1). An observed conflict may be multiple people at a campsite where other campers are too loud and interfere with someone's goal of peace and quiet. For example, a perceived conflict may be a situation where hikers could avoid hunters out in nature, but the hikers may

view it as a problem— a social value conflict (Vaske, Donnelly, et al., 1995; Vaske et al., 2007; Vaske, Wittman, et al., 1995).

		Perceived Problem	
		Yes	**No**
Observed	**Yes**	Interpersonal Conflict	No Conflict
	No	Social Values Conflict	No Conflict

Figure 1. Conflict Evaluations Table. From "Interpersonal Versus Social-Values Conflict," Vaske, J., Donnelly, M. P., Wittmann, K., & Laidlaw, S., 1995, *Leisure Sciences*, 17(3) 205-222. Copyright 1995 by Taylor Francis. Adapted with permission.

Outdoor recreational conflict follows four basic premises (Manning, 2011; Jacob & Schreyer, 1980). The first premise is the style, aspects, and resources of the activity of the activity such as the intensity of the activity, the skills set needed, and the expertise that is involved in the activity (Manning, 2011; Jacob & Schreyer, 1980). The activity, expertise, and resources involved may lead to an individual expressing higher or lower recreational conflict. For example, an expert surfer may or may not express more conflict if he/she has to share the same natural resources as a beginner. The next premise is the attachment to the resource and an individual's perception of how the resource should be managed (Jacob & Schreyer, 1980). This attachment can provide an individual the feeling of owning the land, referring to it as one's own backyard, and having a personal

knowledge of the area (Manning, 2011). People who maintain trails may cringe when seeing large groups on trails feeling their local resources are being overly exploited. The third premise is the expectations of the environment and the activity (Jacob & Schreyer, 1980). For outdoor recreation purposes, this would be the same as a person's emphasis on their natural environment being used for only hiking, or hunting, or even for locals only. The fourth and final premise is one's tolerance to others intentions, such as one's understanding of people using technology in the outdoor setting (Jacob & Schreyer, 1980). If a hiker sees an individual listening to music or talking on their phone on the trail than the hiker may get frustrated suggesting that nature is to get away from technology.

These premises of outdoor recreational conflict led to many studies with the concept of outdoor recreation that looks at the interaction of individuals or parties partaking in different recreational activities within the same location (Manning, 2011). Studies display how recreational conflict between two different activities can be asymmetrical, like human powered versus motorized sports (Knopp & Tyger, 1973; Vaske et al., 2007; Vittersø et al., 2004). For example, canoeist may tend to be accepting of other canoeist but less tolerant towards people in motor powered watercrafts (Lucas, 1964). While human powered enthusiast may express conflict with the motorized recreational participant, individuals who enjoy motorized activity may not perceive the same conflict or conflict at all.

Studies have suggested that an outdoor recreational conflict is a form of a constraint which can incite stress (Hubbard & Mannell, 2001; Loucks-Atkinson & Mannell, 2007; Schneider & Wynveen, 2015; Son, Mowen, & Kerstetter, 2008; White,

2008). The interpersonal conflict would be how one person may react to or perceive the behavior of another individual/group (Vaske et al., 1995). An outdoor photographer may express conflict when the bird flies away due to the noise from a group of hikers (Vaske et al., 1995). It can lead to a negative stress in the recreational experience, interfering with the goal, and potentially adjusting behavior to when and where they take photography of birds to overcome that conflict or constraint (Jacob & Schreyer, 1980; Schneider & Wynveen, 2015).

Although previously stated that Outdoor Recreation Conflict Theory has similarities to the Leisure Constraints Theory, there is one significant element keeping both theories separated from each other. Outdoor recreational conflict insinuates that the stressor involved can only be due to interactions or behavior of another person or party (Confer et al., 2005; Jacob & Schreyer, 1980; Vaske, Carothers, Donnelly, & Baird, 2000). One of the aspects of Leisure Constraints Theory is that the structural constraints may have nothing to do with the factors of interaction with individuals (Crawford & Godbey, 1987; Crawford, Jackson, & Godbey, 1991). Although conflict may be a constraint not all constraints are conflict.

One aspect that may lead to conflict is when an individual's outdoor recreational goal is inhabited to the overcrowding of the natural resource. Crowding is its own concept but similar in nature to outdoor recreational conflict. Understanding crowding helps provide a better understanding of outdoor recreational conflict.

Crowding

One stressor a person or party may experience that leads to conflict, is the sense of crowding. The basic and simplest definition of crowding, from a social science

perspective: stress that was caused by the disproportion of one's supply and demand for space (Stokols, 1972). When one refers to the demand for space, it is insinuating that one must closely coordinate that space with another individual/group (Stokols et al., 1973). This demand could lead to an impairment in the interaction with others, such as reduction of enjoying a swimming hole, due to the perceived restriction and the feeling of being crowded (Stokols et al., 1973).

The highest limit of visitors to a tourist destination without initiating damage to the environment—socio-culturally, economically, and physically— and not reducing visitor satisfaction is the definition the World Tourism Organization has provided for crowding when considering tourism (Dragicevic, Klaric, & Kusen, 1997). Crowding has also been labeled as an infringement on the socially identified norm of a carrying capacity (Donnelly, Vaske, Whittaker, & Shelby, 2000; Heywood & Murdock, 2002; Manning, Valliere, & Wang, 1999; Patterson & Hammitt, 1990; Vaske & Donnelly, 2002).

Satisfaction of a recreational experience has often been labeled as a major goal of recreation (Drogin, Graefe, & Titre, 1990). As stated previously, if one's satisfaction, which could be an end goal, is interfered with, conflict may occur. As an outdoor recreational location becomes more crowded, the pleasure of the experience can lower (Stankey, 1973). It again may lead to that conflict occurrence (Stankey, 1973). Stankey's (1973) model shows how the perceived crowding between horseback riders and hikers can affect one's satisfaction (Figure 2).

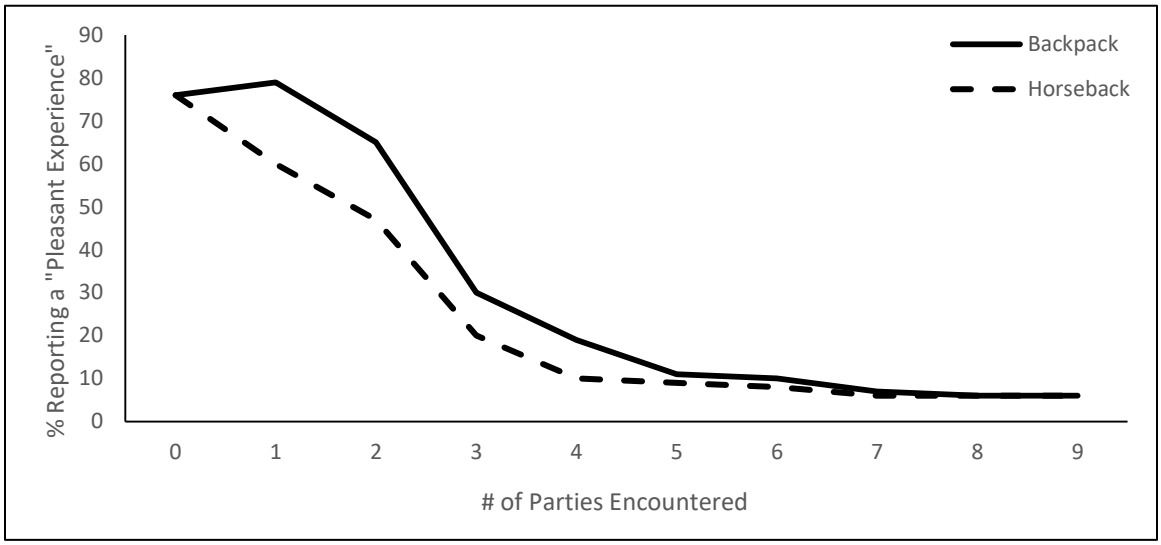

Figure 2. Satisfaction curves for encounters with hikers and horseback riders in three wilderness areas. From "Visitor Perception of Wilderness Recreation Carrying Capacity" G. H. Stankey, 1973. Copyright 1973 by U.S. Dept. of Agriculture, Forest Service. Reprinted with permission

Crowding can be influenced by an individual's demographics, expectations, and motives (Neuts & Nijkamp, 2012). Aspects that have shown significant impact on perception of crowding include cultures from the eastern and western nations, preference towards privacy, length of stay a tourist makes, and expectations (Cole & Stewart, 2002; Gillis, Richard, & Hagan, 1986; Kaya & Weber, 2003; Lee & Graefe, 2003; Russo, 2002). The expectations can be developed from previous experiences and encounters (Neuts & Nijkamp, 2012).

An individual's perceived evaluation of the concentration of people in a location is the core definition of crowding for outdoor recreation (Kuss, Graefe, & Vaske, 1990). Similar to a crowding with tourists, outdoor recreational crowding is a personal evaluation, or a perceived view of crowding (Moore & Driver, 2005). Graefe and Moore (1992) utilized a study on snorkelers to illustrate the idea of how the perception of crowding is through the eye of the beholder. Although the snorkeling location was densely populated, novice snorkelers did not sense crowding because they felt safer being

around other individuals (Graefe & Moore, 1992). A study analyzing how different cultures perceive at their national parks was performed to compare the cultures of Americans, British, and Turkish individuals (Sayan, Krymkowski, Manning, Valliere, & Rovelstad, 2013). The study reported that Turkish individuals expressed being less crowded in areas with higher traffic than compared to the British and American individuals (Sayan et al., 2013). This lack of stress was explained that Turkish felt more at ease in a social setting and actually preferred more crowded areas (Sayan et al., 2013).

Nature-based Tourism

One area of outdoor recreation is nature-based tourism. Tourism, in general, is a major worldwide industry, and at times considered the world's largest industry (Tisdell & Wilson, 2012). Tourism accounts for 11% of the world's Gross Domestic Product, 6% of global exports, and 9% of jobs worldwide (World Tourism Organization, 2016). Tourism is defined as activities resulting from the interface between the tourists, businesses providing services to the tourist, and host communities and governments of that location (Goeldner & Ritchie, 2012). The United Nations World Tourism Organization (2014) defines tourism as happenings by individuals or groups traveling outside of their usual surroundings for no longer than a year for purposes others than to be employed in said area. The purpose, theme, and reasoning for one's tourism vary depending on the individual or group (Collins & Tisdell, 2002). Tourism can be divided into categories and themes including but not limited to mass tourism, adventure tourism, historical tourism, and nature-based tourism (Goeldner & Ritchie, 2012).

Nature-based tourism is outdoor tourist activities that are focused and reliant on the natural setting (Hall & Boyd, 2005; Wolter, 2014). Nature-base tourism has been

described as the fastest growing sector of the industry of tourism (Balmford et al., 2009). There are different reasons for nature-based tourism being so large; one reason is that it encompasses areas of tourism like sport tourism, adventure tourism, and even ecotourism (Moore & Driver, 2005). Another reason for this is because the natural setting can be the primary focus of the tourist activity or it can be an addition to the main theme of the tourism activity (Moore & Driver, 2005). An individual going on a ski trip has the natural setting as the primary purpose of experience, while a family camping at a national park on the way to Disneyland is the idea of an addition. The growth of nature-based tourism over the years and the high impact of tourism in general has led to a sense of crowding and conflict.

Tourism Crowding and Conflict

Tourism crowding. Social carrying capacity, or the perceptions of crowding can be a major inhibitor for a person to enjoy or even participate in nature-based tourism (Valentine, 1992). When tourists perceive that they are beyond carrying capacity, the sense of crowding may start to form (Valentine, 1992). Conflict may arise if that crowding leads to stressors due to an interference within the end goal of another user (Manning, 2011; Moore & Driver, 2005; Stankey, 1973).

There are three crowding characteristics within tourism: 1) situational, 2) behavioral, 3) similarities (Neuts & Nijkamp, 2012). Situational characteristics of crowding are the physical and circumstantial aspects of the environment that may influence the experience and accessibility (Neuts & Nijkamp, 2012). It can be a perception issue (Manning, 2011). One may see different purposes for different areas within the same destination (Donnelly et al., 2000; Manning, 2011). This perception can

impact one's sensitivity towards crowding (Donnelly et al., 2000; Kyle, Graefe, & Vaske, 1990; Manning, 2011). Situational factors are not just limited to accessibility, but also by how a person's perception of how the quality of an area has been designed (Bonnes, Bonaiuto, & Ercolani, 1991; Yildirim & Akalin-Baskaya, 2007).

The second crowding characteristic is the behavior of the tourist (Neuts & Nijkamp, 2012). These practices and norms of one person or party do not align with the standards of another person or party (Donnelly et al., 2000; Jacob & Schreyer, 1980; Lewis, Lime, & Anderson, 1996; Manning, 2011; Tarrant & English, 1996). The norms of Turkish people in their national parks may affect the sense of crowding to Americans whose social norms differ (Sayan et al., 2013). Group size is an additional factor that may have an impact on the behaviors towards the social norms (Roggenbuck, Williams, & Watson, 1993).

The third characteristic involves one's alleged similarities, between oneself and others participating in the same recreational activity as opposed to two different recreational activities at the same location. This sharing of resources with similar and different groups influences one's perceived crowding (Yagi & Pearce, 2007). A kayaker may express less crowding because he/she has a sense of similarity with the fellow boaters versus anglers.

Tourist/resident interaction and conflict. Literature suggests that tourism can have both a positive and negative social impact on residents. Positive influences include aspects such as an increase in recreational entertainment facilities, improved community protection, and a stronger sense of community pride (Ap, 1992; Lankford, Williams, & Knowles-Lankford, 1997; Williams & Lawson, 2001). In contrast, the negative impacts

can encompass increased crime rate and pollution, the congestion of the roadways, and changes in values (Ap & Crompton, 1993; Davis, Allen, & Cosenza, 1988; Johnson, Snepenger, & Akis, 1994). While heavy traffic and crime can be a more direct negative impact, there can be indirect adverse effects such as residents sensing a loss of their autonomy and decision-making for their community (Krippendorf, 1987).

The positive and negative perceptions of nature-based tourism can be influenced by the involvement of the residents and the perception of benefits a community members feel they achieved (Andereck et al., 2005; Jones, 2005). The more a person feels connected to the local tourism industry within his/her personal life, the stronger he/she will have feelings towards nature-based tourism (Andereck et al., 2005; Jones, 2005). Jones (2005) suggested that community residents involved in community developed nature-based tourism industry found higher gain in social capital. This community involvement does not have to be a direct connection (Andereck et al., 2005). As long as a member of a nature-based tourism community feels contact directly such as employment or indirectly such as knowledge of the industry, those personal relationships can lead to a positive perception of nature-based tourism (Andereck et al., 2005). Andereck et al. (2005) did acknowledge though the larger the personal benefit received, the better the perception.

Residents, in general, tend to find the positive impacts related to tourism development in the area (Andereck et al., 2005; Liu & Var, 1986). Recreation has been reported as a gain to the community due to nature-based tourism opportunities (Andereck & Nyaupane, 2011). Andereck and Nyaupane (2011) research supported that ecotourism increased quality of life, with recreational opportunities, rated the highest.

There are also trends of negative viewpoints from the residents towards tourism being developed in an area (Andereck & Nyaupane, 2011; Ap & Crompton, 1993). The social impacts tourism has needs to be addressed when considering nature-based tourism (O'Grady, 1990). Many residents, especially in the countryside, may express concern that the visitors are of a higher economic class and have no interest in protecting the natural area but to exploit it (Valentine, 1992).

One of the most commonly referenced models of tourist and residents' interaction is the Doxey (1975) Irridex Model. This model recognizes four stages of residents' outlooks and how they evolve towards tourism (Doxey, 1975). The first stage is a delight or euphoria towards the idea of tourism or tourists coming to the area (Doxey, 1975). It is followed by apathy or indifference towards tourists (Doxey, 1975). The next stage is when the resident begins to become annoyed from the impacts tourist have made towards the areas environment, culture, and even economics (Doxey, 1975). The final stage Doxey describes when residents become the antagonist of tourism and show a negative aggression, direct or passive, towards visitors (1975). It has been suggested these stages happen as the population of tourist become larger at a location (Doxey, 1975).

On the other end of the spectrum is how tourist reacts to the behavior of the residents. Among other factors, for a tourist location to be sustainable there must be a harmonious interaction between the tourist and residents (Andriotis & Vaughan, 2003; Williams & Lawson, 2001; Zhang et al., 2006). Pizam, Uriely, and Reichel (2000) study in Israel suggest that the more frequent and personal interaction between the residents and tourist, the higher approval rating of the location came from the visitor. The less the residents interacted with tourist, the less favorable the guest felt about the area (Pizam et

al., 2000). When crowding causes conflict, participants in outdoor recreational activities will utilize coping mechanisms to overcome their conflict.

Coping

When an outdoor recreational resident feels the sense of crowding, conflict, and even constraints, coping and negotiation strategies to deal with the situation arise. There are ways individuals—both tourists and residents— cope with or negotiate their way to deal with crowding and recreational conflict (Moore & Driver, 2005). Manning (2011) lists the coping strategies as substitution, redefining, and rationalizing. Many studies have also suggested that constraints do not entirely prevent leisure, but the individual may cope or negotiate to overcome identified limitations and leisure will still occur (Jackson, Crawford, & Godbey, 1993; Jackson & Rucks, 1995; Samdahl & Jekubovich, 1997).

Substitution is when people find their situation unacceptable, and they may change or substitute the time, place, and activity (Kivel & Johnson, 2009; Manning, 2011). An angler arriving at a crowded stream may switch fishing locations, come back at a later time, or even put away the fishing rod, grab the hiking stick and go for a hike instead (Moore & Driver, 2005).

Redefining involves an individual adjusting their goal or preference toward his/her chosen recreational activity (Hendee, Stankey, & Lucas, 1990; Manning, 2011; Moore & Driver, 2005). If a camper, looking for a quiet evening, arrives at a campground to find there is a festival going on, the camper may decide to take part and socialize with the other campers shifting the goal of the intended experience.

Rationalizing is when people have devoted so much time or resources to their recreational activity that they convince themselves and others that they were satisfied with the experience (Festinger, 1957; Manning, 2011; Moore & Driver, 2005). During mid-summer, an individual may find his/her favorite swimming location crowded. Instead of substituting the activity or redefining the goals, the individual will still continue to swim and convince him/herself that it was a good time given the circumstances.

When considering crowding and the conflict it may cause, professionals can help adjust area usage to keep below the maximum carrying capacity (Moore & Driver, 2005). These approaches first must be designed by using either a formula-based approach or a standards-based approach (Moore & Driver, 2005). The formula-based approach is the utilization of scientific methods to develop a way to control crowding (Moore & Driver, 2005). The "number of people at one time" formula has been utilized by the National Park Service to assist in reacting to crowding (Van Wagtendonk, 1986). The approach is referred to as the standard-based approach (Moore & Driver, 2005). It is the method that utilizes evaluations to develop standards for the recreational area and then observes and adjusts the rules as necessary (Moore & Driver, 2005).

One way to understand how individuals react to crowding and conflict is to understand the concept that is called the Displacement Theory. Displacement Theory is the outcome due to a change in behavior caused by the interaction of a changed recreational setting (Anderson, 1980a, 1980b). It is caused by competition for space and variations in the physical or management of the recreational area (Anderson & Brown, 1984). Displacement is similar to coping mechanism as the individuals may change

activity, location, and or time do to the behavior of others. Displacement first suggested as the "invasion and succession" process (Clark, Hendee, & Campbell, 1971).

Manning (2011) has stated that many studies have been issued to address displacement. These studies have assisted in understanding evolution and assumption of Displacement Theories. For instance, people will change their recreational behavior when faced with a crowding condition and alternative options to do so (Dekker, 1976).

One study suggests individuals will adjust their logistics of their trip based on the usage of the location by other people/parties (Nielsen & Shelby, 1977). If hikers see one trail as crowded, they will take a spur trail. When canoeing along the river, a group sees their campsite is overrun by litter, they may decide to keep canoeing to another campsite.

Multiple studies have found that as people frequent an area, they adjust plans and logistics due to previous experiences at the same place (Anderson, 1980a, 1980b; Anderson, 1984; Anderson & Brown, 1984). Boaters at the Boundary Waters, lakes in upper Minnesota separating the United States and Canada, would try to utilize different boat ramps or camp at various locations based on what type of interactions happened during previous visits (Anderson, 1980a, 1980b; Anderson, 1984; Anderson & Brown, 1984; Manning, 2011). Schreyer's (1979) study noted that displacement is not only caused by human interaction but includes changes in the environment of the recreational activity.

Studies have found that one of bigger reasoning for displacement is an individual's desire for solitude (Becker, 1981; Becker, Niemann, & Gates, 1981; Shelby, Bregenzer, & Johnson, 1988). It is suggested that people are willing to travel further and

shift the season of experience in a recreational activity just to avoid crowding (Hammitt & Hughes, 1984; Wohlwill & Heft, 1977).

The substitution coping method for an outdoor recreational participant experiencing recreational conflict is referred to as displacement (Moore & Driver, 2005). Similar to the coping method of substitution, the studies previously discussed that there are three ways of displacement for individuals to react to crowding (Clark et al., 1971; Manning, 2011; Moore & Driver, 2005). The inter-site displacement is the changing of location, the intra-site shift is the evolving of the activity, and temporal displacement is when the recreational participant do their activities at a different time (Clark et al., 1971; Manning, 2011).

Facilitators may utilize coping and displacement behaviors to their benefits or to resolve their deficiencies. River companies shift their frequency and sections of rivers they use to prevent the feeling of crowding and positively utilize displacement (Becker, 1981; Becker et al., 1981; Shelby et al., 1988). Because people are willing to relocate their recreational activity (Hammitt & Hughes, 1984; Wohlwill & Heft, 1977), many agencies can utilize that knowledge to make their location more appealing than other places. To design how to develop recreational areas to meet the need, organizations, both public and private, can utilize a formula and standards-based approaches to developing a plan to interact with displacement.

Location of the Study

DuPont State Recreational Forest is located south of Brevard, NC and includes10,000 acres of protected trails, waterfalls, pond, streams, and historical features (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls,

n.d.). DSRF has been featured in the films of Last of The Mohicans and The Hunger Games (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls, n.d.). There are multiple outdoor recreational activities for both tourist and residents to enjoy including waterfall tours, hiking, fishing, horseback riding, and mountain biking (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls, n.d.). During the late spring and summer month's, DSRF gets enough visitation that parking leads out of the lot and along the roadways (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls, n.d.).

DuPont State Recreational Forest is located between Brevard, NC and Hendersonville, NC in Transylvania County (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls, n.d.). In 2005, tourism brought $70 million in revenue to Transylvania County with many of the tourist retirings in Brevard (Brevard, North Carolina, n.d.). From 2002 to 2012, tourism increased in Transylvania County from 6-20% (Lanier, 2014). Tourists spent $80.92 million in Transylvania County (Lanier, 2014). Tourism in the area created 720 jobs (Lanier, 2014). Brevard is located at the south entrance of Pisgah National Forest and runs along the French Broad River (Brevard, NC - Official Website | Official Website, n.d.). Its 250 surrounding waterfalls, yearly festivals, outdoor opportunities, and unique location is one supportive factor to tourist income brought into the county (Brevard, North Carolina, n.d; Brevard, NC - Official Website | Official Website, n.d.). Brevard population runs 33,211 and is 51% Female and 49% Male with a Median household income of $45,114 (US Census, n.d.).

Through discussions residents and businesses have expressed over the years the noticeable increase in tourism to the area. The increase in revenue and jobs due to

tourism to the area and discussion with residents within the area is why this location is an appropriate choice for the study.

Instruments

Over the years, many studies have been performed to understand the recreational conflict between people or groups with different recreational goals (Mann & Absher, 2008; Vaske et al., 2007; Vittersø et al., 2004). These studies developed instruments that were utilized to better understand conflict. These instruments were developed for specific activities, locations, or in measuring a specific types outdoor recreational conflict (Beal, Watts, Landry, Vogelsong and Wendling, 2011; Mann & Absher, 2008; Vaske, et al., 2007; Vittersø et al., 2004). Developing an instrument that can be utilized for multiple locations and recreational activities will create an ease for further research into outdoor recreational conflict. Doing so involves an understanding of what were the purposes of different instruments used, identifying similarities, extracting those usable aspects and usable survey.

Vaske et al. (2000) study looks at the conflict between snowmobilers and skiers. The instrument identifies standardized variables within its questionnaire, the questions are specific towards skiing and snowboarding. While Vaske et al. (2000) instrument provided validity and reliability results, Mann and Absher (2008) study only provides the information that the instrument is consistent with United States of America standards.

Beal et al. (2011) study identifies the experience level, and frequency one participates multiple outdoor recreational activities at Lake Gaston in North Carolina (Beal et al., 2011). The questions identify what percentage individuals participated in different water-based activities and then asks participants to rate their level of experience

in multiple water based activities (Beal et al., 2011). The next part of the Beal et al. (2011) study analyzes recreational conflict which was adapted from the Jacob and Schreyer's (1980) conflict model.

Jacob and Schreyer's (1980) conflict model is reflected in the second part of the survey (Beal et al., 2011). Beal et al. (2011) instrument looks at how the presence of anglers and watercraft users impact the survey participant's enjoyment of activities on the lake. This section is a Likert 1-7 scale (Beal et al., 2011).

The third section is an instrument with a 1-7 modified Likert scale, which was adjusted from Thapa's (1996) ski and snowboard recreational conflict instrument. Thapa (1996) reports a coefficient alpha of .90-.94 (Beal et al., 2011). This scale measures how big of a problem anglers and watercraft users present to the instrument participant (Beal et al., 2011).

The fourth section of the instrument examined participants' tolerance for recreational activities other than their own. Items originated from Thapa's (1996) instrument with influence from Jacob and Shreyer (1980) model of the concept of tolerance. Again, Beal's et al. (2011) kept this section a 1-7 Likert-style scale. Thapa's (1996) original instrument had a Coefficient Alpha .51-.80. This section identifies how acceptable participants see the behaviors of other outdoor recreationists (Beal et al., 2011).

Summary

The literature suggests crowding, if creating an unnecessary stress among an individual's achievement of their recreational goal, is recreational conflict. A concern residents may have towards tourism is congestion and crowding. If this crowding due to

tourist causes conflict for residents experiencing their outdoor recreation, they may react in multiple ways of changing location or time of the activity, changing the activity so far, and/or the resident developing an annoyance or aggressive behavior towards the tourist. All this is dependent on the perceived image the resident has towards tourist or the tourism industry. Additionally, a standardized instrument to investigate this relationship may benefit the research in this field. There have been many instruments utilized to understand recreational conflict but none of the instruments have been standardized for a general use, but instead, focused on specific activities, locations, and/or forms of conflict.

CHAPTER III

Methodology

This research was designed to create a standardized questionnaire instrument that can be used to collect data and draw conclusions about recreation conflict between nature-based different user groups who participate in outdoor recreational activities. Utilizing previous instruments, research, and concepts, the instrument was designed to identify the level of recreational conflict and methods of coping with such recreational conflict.

Instrument Development

The instrument development followed the suggested method of Churchill (1979) steps of validation by expert panel and reliability testing with internal consistency. The Delphi technique of utilizing an expert panel was the method for testing content validity (Brown, 1968; Dalkey & Helmer, 1963; Linstone & Turoff, 1975; Sackman, 1974).

Step 1: The domain. The domain of the study is achieving a better understanding of the level of outdoor recreational conflict residents express due to tourist utilizing their same natural resources.

Step 2: Items of the instrument. The 15 items of the instrument came from a four-part survey that was utilized in identifying a conflict between multiple water-based activities (Beal et al., 2011). Permission was provided to utilize this instrument (Appendix A). The survey was a set of evolved sections of Thapa and Graefe's study

on skiers and snowboarders and Jacob and Schreyer's Conflict Model (Jacob & Schreyer, 1980; Beal et al., 2011; Thapa, 1996; Thapa & Graefe, 1999). The sections of the study were evolved and evaluated for content validity through a Delphi technique so it could be standardized to change activities, protagonists, and locations. In addition, questions using other studies in outdoor recreational conflict were developed to create a 30 recreational conflict statements (Jackson, Haider, & Elliot, 2003; Vaske et al., 2007; Vittersø et al., 2004). The descriptive questions of the instrument were developed from Beal et al. (2011) descriptive items measuring frequency and skill level of outdoor recreational activities.

The second section of study reviews perception based in four areas, and the final section includes demographics: 1) Individual perceived conflict, 2) Individual tolerance, 3) Individual behavior related outdoor recreational conflict, 4) Individual expressing outdoor recreational conflict. These questions were developed from multiple studies of (Table 1):

- Anderson (1980a, 1980b)
- Anderson (1984)
- Anderson and Brown (1984)
- Beal, Watts, Clifton, Landry, Craig, Vogelsong, Hans, Wendling, and Robert (2011)
- Carothers, Vaske, and Donnelly (2001)
- Cessford (2003)
- Dekker (1976)
- Hall and Cole (2007)
- Mann and Absher (2008)
- Manning (2011)
- Moore & Driver (2005)
- Nielsen & Shelby (1977)
- Ragheb (2001)
- Thapa and Graefe (1999)
- Vaske, Carothers, Donnelly, and Baird (2000)
- Vaske, Needham, and Cline,(2007)
- Vittersø, Chipeniuk, Skår, and Vistad (2004).

Table 1 *Statements and Studies*

Instrument statement	Statements from previous studies
1. Group X do not follow the rules	Beal et al., 2011; Cessford, 2003; Thapa and Graefe, 1999; Vaske et al., 2000; Vaske et al., 2007; Vittersø et al., 2004
2. Group X litter	Mann and Absher, 2008; Ragheb, 2001
3. There are too many Group X	Beal et al., 2011
4. Group X are not friendly	Beal et al., 2011
5. Group X disrupt wildlife	Vaske et al., 2007; Vittersø et al., 2004
6. Group X are in my way	Carothers et al., 2001; Thapa and Graefe, 1999; Vaske et al., 2000
7. Group X behave in a discourteous and rude manner	Beal et al., 2011; Carothers et al., 2001; Thapa and Graefe, 1999; Vaske et al., 2000; Vaske et al., 2007
8. Group X intentionally vandalize the natural setting	Mann and Absher, 2008; Thapa and Graefe, 1999; Vittersø et al., 2004
9. Group X block/disrupt the natural views	Vittersø et al., 2004
10. Group X fail to be aware of others around them	Beal et al., 2011; Carothers et al., 2001; Thapa and Graefe, 1999; Vaske et al., 2000
11. Group X unintentionally damage the natural setting	Mann and Absher, 2008; Thapa and Graefe, 1999; Vittersø et al., 2004
12. Group X are too noisy	Mann and Absher, 2008; Thapa and Graefe, 1999; Vaske et al., 2007; Vittersø et al., 2004
13. Group X are unsafe	Beal et al., 2011; Thapa and Graefe, 1999
14. Group X do not pick up after themselves	Beal et al., 2011; Cessford, 2003; Ragheb, 2001; Thapa and Graefe, 1999; Vaske et al., 2000; Vaske et al., 2007; Vittersø et al., 2004
15. Group X block entrances and exits	Beal et al., 2011; Thapa and Graefe, 1999
16. Group X reduce my enjoyment of Outdoor Recreation Location	Beal et al., 2011; Thapa and Graefe, 1999
17. Group X cause me to feel crowded at Outdoor Recreational Location	Beal et al., 2011
18. Group X bother me at Outdoor Recreation Location	Beal et al., 2011; Thapa and Graefe, 1999
19. Group X make me feel unsafe at Outdoor Recreation Location	Thapa and Graefe, 1999
20. I do not want to interact with Group X while at Outdoor Recreation Location	Thapa and Graefe, 1999
21. I would recreate at Outdoor Recreation Location more often if there were fewer Group X	Anderson, 1980a, 1980b; Anderson, 1984; Anderson and Brown, 1984; Beal et al., 2011; Dekker, 1976; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977

Instrument statement	Statements from previous studies
22. I will go to Outdoor Recreation Location at a different time when I think there will be fewer Group X	Anderson, 1980a, 1980b; Anderson, 1984; Anderson and Brown, 1984; Beal et al., 2011; Dekker, 1976; Hall & Cole, 2007; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977
23. I will still continue to do my outdoor recreational activity even if there are a lot of Group X	Anderson, 1980a, 1980b; Anderson, 1984; Anderson and Brown, 1984; Beal et al., 2011; Dekker, 1976; Hall & Cole, 2007; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977
24. I avoid Outdoor Recreation Location if I think there will be a lot of Group X	Anderson, 1980a, 1980b; Anderson, 1984; Anderson and Brown, 1984; Beal et al., 2011; Dekker, 1976; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977
25. When arriving at Outdoor Recreation Location, if there are too many Group X I will stay but change my planned activity	Anderson, 1980a, 1980b; Anderson, 1984; Anderson and Brown, 1984; Beal et al., 2011; Dekker, 1976; Hall & Cole, 2007; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977
26. If I change my plans (timing or activity) because I think there are too many Group X, I would say something to Outdoor Recreation Location management	Ragheb, 2001
27. If I see a Group X doing something that I think is inappropriate, I would say something to the Group X	Ragheb, 2001
28. If I see a Group X doing something that I think is inappropriate, I would report it to Outdoor Recreation Location management	Ragheb, 2001
29. If I see a Group X doing something that I think is inappropriate, I would mention it to other groups or individuals	Ragheb, 2001
30. If I think there are too many Group X at Outdoor Recreation Location I would say something to Outdoor Recreation Location management	Ragheb, 2001

The Delphi technique of validity was utilized by assessing the questions repeatedly by a panel of professionals and experts in the field of outdoor recreation

(Table 2). The panel members were recruited from the literature review, membership in professional organizations, and by references from persons working in the outdoor recreation field. The request to participate was sent to 13 experts in the field and 6 agreed to participate. The minimum requirement for the expert panel at least five members (McKenzie, Wood, Kotecki, Clark, & Brey, 1999). With a panel of 5 or more, content validity ratio (CVR) of at least 50% of the panel members approving the question with an essential for question inclusion (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

Table 2 *Expert Panel*

Panelist	**Years in Field**	**Profession**
1	10	Canopy tour operator
2	10	Owner of challenge course construction and adventure training Company
3	15	Owner of challenge course construction and adventure training Company
4	20	Owner of challenge course construction and adventure training Company
5	25	Retired owner of whitewater rafting and adventure resort
6	10	National Park Ranger
7	15	Owner of adventure tourism outfitter
8	15	Lead guide in study abroad adventure tourism program
9	15	Professional snowboarder
10	10	Coordinator for collegiate outdoor adventure program
11	20	College professor in outdoor recreation and experience in instrument development
12	10	College professor in outdoor recreation and experience in instrument development
13	15	College professor in outdoor recreation and experience in instrument development

After the expert panel reviewed the instrument, changes to the instrument were made according to recommendations from the panel. The instrument was sent out again for review. This process was to repeat until the instrument was approved by the committee.

Step 3: Data collection analysis. After the instrument was deemed valid by the committee, data was collected by using inter-rater collection method providing the survey to independent participants one time for review (Mills & Gay, 2016). Utilizing an internal consistency method of analysis a principle and exploratory factorial analysis was analyzed to divide the survey into subscales (Churchill, 1979; Mills & Gay, 2016). A coefficient alpha statistical analysis was run through Statistical Package for the Social Sciences (SPSS) to confirm the reliability of survey and the subscales.

Validation

The Delphi technique of utilizing an expert panel to review a draft of the instrument for validity was the methodological approach to the validation (Brown, 1968; Dalkey & Helmer, 1963; Linstone & Turoff, 1975; Sackman, 1974). This techniques was used to identify the contenet validity of the items stating what they are intended to say (Mills & Gay, 2016). The instrument was developed based on previous questionnaires, results, and concept revolved around outdoor recreational conflict and crowding. The instrument divided into seven sections of:

1. Exploratory/descriptive of activity participation levels
2. Individual perceived conflict or expressed level of problem due to another user group activity
3. Individual Tolerance or ability to overcome conflict
4. Individual behavior related outdoor recreational conflict
5. Individual expressing outdoor recreational conflict
6. Demographics
7. Questions for the expert panel to assess the overall instrument

At the beginning of each section, the instruction was given along with an opportunity for the expert panel member to provide comments on the instructions. The exploratory questions was a modified version of Beal et al. (2011) descriptive questions. At the beginning of the exploratory questions the first four questions identified how often individuals go to DSRF during winter (December, January, February), spring (March, April, May), summer (June, July, August), and Fall (September, October, November). Then next four questions identified how often individuals participated in hiking, horseback riding, mountain biking, and fly fishing during each season. Finally, the last question in the descriptive identified the participants perceived skill levels in each activity. After each question the expert panel member was given the option to rate the question as essential, useful, but not essential, or not necessary and given an opportunity for comments (Lawshe, 1975; McKenzie et al., 1999; Ragheb, 2001).

The eight items and the design for perceived conflict statements in section two came from by Beal et al. (2011). Seven additional statements and adjustments were added based on results from other studies and concepts (Carothers et al., 2001; Cessford, 2003; Mann & Absher, 2008; Ragheb, 2001; Thapa & Graefe, 1999; Vaske et al., 2000; Vaske et al., 2007; Vittersø et al., 2004). These items were adjusted to be standardized instead of focused on a particular outdoor recreational activity. For example, one of Beal et al., (2011, Appendix A) statements said, "Pleasure boaters are not friendly." This statement was adjusted to say "Group X is not friendly." Also, adjustments were added to statements to further identify conflict. Instead of asking if a group damages the natural environment one question was asked if the group damages the environment unintentionally and another questioned asked if the group intentionally damages the

natural environment. After each question the expert panel members were given the option to rate the question as essential, useful, but not essential, or not necessary and given an opportunity for comments (Lawshe 1975; Ragheb, 2001).

The third section of the statement were modified versions of previous instruments and studies (Beal et al., 2011; Thapa & Graefe, 1999). Again these statements were modified to be standardized. After each question, the expert panel members were given the option to rate the question as essential, useful, but not essential, or not necessary and given an opportunity for comments (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

The fourth section of statements were developed based on studies identifying individuals behavior and their coping mechanism when they are experiencing outdoor recreational conflict or crowding (Anderson, 1980a, 1984b; Anderson, 1984; Anderson & Brown, 1984; Beal et al., 2011; Dekker, 1976; Hall & Cole, 2007; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 1977). After each question, the expert panel members were given the option to rate the question as essential, useful, but not essential, or not necessary and given an opportunity for comments (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

The fifth sections were statements developed out of a gap in the literature. The questions ask about when and how individuals would express their outdoor recreational conflict if faced with the challenge. Would the participant say something to the group, management, or other individuals if experiencing conflict? After each question, the expert panel members were given the option to rate the question as essential, useful, but

not essential, or not necessary and given an opportunity for comments (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

The sixth section was demographics including: based on age, ethnicity, gender, level of education, zip code and how long one may have lived at that zip code. After each question, the expert panel members were given the option to rate the question as essential, useful, but not essential, or not necessary and given an opportunity for comments (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

The seventh and final section of the questions were designed to rate if the expert panel believed the instrument would cause harm to the participants and a comment section for the overall study. The expert panel was asked if the instrument would cause minimal to zero harm, some harm, or excessive harm to the participants. This was one of three methods utilized to test the consequential validity, or the social consequences, of the instrument (Mills & Gay, 2016).

Overall, a total of 30 items beyond the descriptive and demographics were developed for the expert panel to review. A formal request with a link to survey and instructions was emailed to 13 experts for instrument validation (Appendix B). Of the 13, 6 agreed to participate. The expert panel was tasked to review the instrument as a whole. They were to rate each of the item within the instrument as 1) essential, 2) useful, but not essential, or 3) not necessary. In addition to the rating of the question, the panel members were to provide comments after any statements the believed needed changing or elimination. They were also asked to provide comments on the instruction of the instrument for any recommended changes. Although not part of the validation of the instrument, the panel was requested to comment on the descriptive and demographic

questions for any recommended changes. After adjustments were made, the questionnaire was sent to the same panel for another review. This continued until all items met the CVR of essential rating from at least 50% of the expert panel (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001).

Reliability Testing

To test for internal consistency and reliability, data was collected utilizing the validated questionnaire instrument. Data collection took place around DSRF in North and South Carolina. Data collection took place from July-August 2017.

Population. The population chosen for this study were individuals who participate in outdoor recreation activities on a consistent basis of at least once a month in a given season, and live in an area where tourists come to visit and utilize the same nature-based resources for their recreation. The skill level of outdoor recreation participation may vary from person to person who mountain bike, hike trails, fishing, and ride horseback.

Specific criteria required to part of this population included: 1) the individual had to be at least 18 years of age 2) needed to live within a 35 mile driving range of DSRF, 3) Recreates at DSRF on a consistent basis of at least once a month in a given season, and 5) participated in the outdoor recreation activities of hiking, horseback riding, mountain biking, and/or fly fishing on a consistent basis of at least once a month in a given season. Because of the variety of the outdoor recreational opportunities within the area, the research focused on outdoor recreational activities of hiking, horseback riding, mountain biking, and fly fishing due to the high levels of participation.

The primary population comes from the town of Brevard, NC. Located in the at the edge of the Blue Ridge Mountains. Brevard is surrounded by the French Broad River, Pisgah National Forest, and DSRF (City of Brevard North Carolina, n.d.). This location is within 10 miles of a variety of outdoor recreation activities. The research will focuses on DSRF due to the wide range of outdoor recreation activities options and the popularity of the site.

Located south of Brevard, NC, the 10,000-acre area offers multiple outdoor recreational activities for both tourist and residents including waterfall tours, hiking, fishing, horseback riding, and mountain biking (DuPont State Forest: Waterfalls, Hikes & More., n.d.; DuPont State Forest waterfalls, n.d.).

Sample. The sample size minimum was 30 participants that fit all research criteria with a goal of collecting information from 250 participants that fit all research criteria. The sample size is based on the suggestion "…that sample size is not important for the Cronbach alpha or theta coefficients, and is stable even for a small number of items" (Ercan, Yazici, Sigirli, Ediz, & Kan, 2007, p. 302). To assist in eliminating the potential bias of the sample, the researcher accepted any finished survey from any permanent resident of Brevard and surrounding townships within an estimated 35-miles range from DSRF who participates in one of the four listed outdoor recreational at DSRF. This included people who have recently moved to the area and individuals who have lived in this area for all their lives. In an attempt to eliminate seasonal employees, seasonal residents, and tourists, the researcher did initially identify only individuals who claim Brevard or surrounding townships as their permanent residence. There are surrounding towns and residences in both North and South Carolina that participate in

recreational activities in at DSRF on a regular basis. The sample included people who reside within an estimated 35-miles range of DSRF who identify as coming to DSRF on a consistent basis. All participants were at least the age of 18. The procedure was systematic random as the system was that every next person to walk by the business was asked to participate. The methodology was convenience as only business allowing the researcher at the entrance were included. The snowball methodology included upon completion of the questionnaire. The researcher thanked the participant and requested that the participant would recommend other residents of the area to stop by and complete the survey questionnaire.

Sampling methodologies. The sampling methodologies included systematic random, convenience, and snowball sampling. After gaining permission from Brevard area businesses, the researcher stood within 10 feet of the business entrance. As an individual walked by, the researcher would ask if he/she would be willing to complete a questionnaire related to the outdoor recreational conflict. The systematic random sampling method utilized the next person passing. The researcher utilized a set script to get permission from the participants (Appendix C). If the individual was willing to participate, then the researcher would identify if the participant was a resident of Brevard or surrounding area, was at least eighteen years of age, and if they participated in the outdoor recreational activities of hiking, horseback riding, mountain biking, and/or fly fishing on a consistent basis, and if they visited DSRF for recreational purposes on a consistent basis. If the participant confirmed residency, age, their outdoor recreational participation, and visitation to DSRF the researcher continued to give the individual the questionnaire to complete. If the participant was not a resident, eighteen years of age,

their recreation did include any of the four outdoor recreation activities, or did not go to DSRF on a consistent basis, the person was thanked, and the data collection did not proceed.

The online convenience and snowball data collection occurred by posting the questionnaire link on multiple outdoor recreational clubs social network's web page. The snowball method was done by inquiring from residents on additional websites that the link to the survey could be posted. If the participant confirms both residency and age, and their outdoor recreational participation the researcher continued with the questionnaire. If the participant was not a resident, eighteen years of age, or they did not participate in the listed recreational activities the data collection was stopped.

Data Collection

Paper and online questionnaires were created. Institutional Review Board (IRB) approved both the on-site and online data collection (Appendix D). The Delphi technique was used to test the validity of the redesigned instrument. The actual data for reliability was intended to be collected during peak tourism of July-August of 2017. Residents living in Brevard, NC or surrounding area, being 18 years of age, visit DSRF on a consistent basis, and participation in hiking, horseback riding, mountain biking, and fly fishing, regardless of skill level was the focused population of the reliability testing. If the individual confirmed consent (Appendix E) and he/she meet that criterion, the researcher continued to give the individual the questionnaire to complete. The researcher recorded the answers into SPSS software following the collection of the questionnaires.

Summary

This research created an instrument for testing levels of perceived outdoor recreational conflict expressed by different user groups. An instrument was designed to be validated by a panel of experts and tested in the DSRF region of North and South Carolina. Content Validity Ratio and Alpha coefficients were analyzed to confirm the validity and reliability of the instrument.

This research was designed to create a valid and reliable questionnaire instrument that can be used to understand and draw conclusions about recreational conflict about outdoor recreational activities in multiple locations, with different activities, and with different user groups. After the panel of experts completed the Delphi study and instrument validity was determined, the reliability was calculated based on data collected at DSRF in North Carolina.

CHAPTER IV

Results

The purpose of this study was to develop a standardized instrument measuring perceived outdoor recreation conflict between user groups that could be valid and reliable even if the outdoor recreational activity and locations within the questions were to change. There were two primary intentions in this study: (1) to validate a outdoor recreational conflict instrument that can be utilized in multiple locations, with multiple user groups, and consider various outdoor recreational activities, and (2) to test the reliability of the instrument so that it can be used in future research. In addition to creating a valid and reliable instrument, this study produced data related outdoor recreational conflict residents perceive and express when sharing the same natural resources (DSRF) for the activities of hiking, horseback riding, mountain bike, and/or fly fishing with tourists

The instrument is divided into six sections. The first section was to identify the participant's outdoor recreational behavior by descriptive questions related to frequency of visiting DSRF. The descriptive questions also address the frequency of participation in hiking, mountain biking, horseback riding and fly fishing, and the perceived skill level of hiking, mountain biking, horseback riding, and fly fishing. There was a total of 9 questions in this sections.

The second section is a modified version of outdoor recreational conflict and crowding statements (Beal, et al., 2011; Carothers et al., 2001; Cessford, 2003; Mann &

Absher, 2008; Ragheb, 2001; Thapa & Graefe, 1999; Vaske et al., 2000; Vaske et al., 2007; Vittersø et al., 2004). This section is designed with 15 statements to let individuals express their perceived level of conflict based on statements pertaining to crowding, environmental concerns, and behaviors.

Section three included five statements measuring participants tolerance towards conflict. The instrument is designed to collect information on the conflict between two groups of people utilizing the same natural resources. In this case, it was comparison the outdoor recreational conflict between local residents and tourists. The next section included five statements about the level of expressed behaviors towards conflict and crowding. These statements identified how the participants would behave if they were to expect conflict or crowding issues.

The fifth section includes statements identifying participants willingness to communicate their conflict. This included five statements identifying if participants would express their conflict with management, other individuals, or with the people they would see as a problem. The final section includes demographic information of age, gender, race/ethnicity, zip code and how long the participant lived there, and level of education. Three questions were added asking participant's height, how long they talk on their cell phone, and how long they cook daily. These three variables should not correlate with the rest of the study and were used for verification of construct validity through discriminant validity.

Content Validation

Content validity is the extent to which an instrument measures expected concepts (Mills & Gay, 2016; Ragheb, 2012). Content validity evaluation can be

performed through a Delphi technique of an expert panel (Brown, 1968; Dalkey & Helmer, 1963; Linstone & Turoff, 1975; Mills & Gay, 2016; Ragheb, 2012; Sackman, 1974). Of the 13 panel experts invited to participate in the validation process of the instrument, 6 completed the reviews. The panel members who did not complete the survey was due to either conflict of interest concerns or accessibility at the time. The six panel members consisted of four professionals in outdoor recreation and two Doctoral professors with a background and research in outdoor recreation and experience in instrument development. The minimum requirement for an expert panel is least five members (McKenzie et al., 1999). Each panel member was provided each question of the survey in three parts (Appendix F): (1) the question; (2) identify whether the question is essential, useful but not essential, or not necessary; and (3) space for comments. At least 50% of the expert panel must identify each question as "essential" for the question to be considered valid (Lawshe 1975; McKenzie et al., 1999; Ragheb, 2001). The instrument was reviewed two times. After the first review, wording changes were made to 5 questions and instructions. For example, the original statement of "Group X intentionally vandalize the natural setting," changed to "Group X intentionally vandalize the natural environment." One statement was added. The statement "Group X do not follow the common unwritten rules of Outdoor Recreation Location" was added. Per the recommendations of the panel the demographic questions of age, gender/sex, and ethnicity/race were adjusted to follow the United States census. After the second review of the questions, 20 (64.52%) of the statements were identified as "essential" by all six expert panel members. Of the 31 statements listed, the following eight (25.81%)

questions were identified as “essential” by five of the six (83.33%) expert panel members.

1. Group X are in my way.
2. Group X unintentionally damage the natural environment.
3. Group X do not follow the common unwritten rules of Outdoor Recreational Area.
4. Group X’s presence reduce my enjoyment of Outdoor Recreational Area.
5. If I see a Group X doing something that I thinks is inappropriate, I would say something to the Group X.
6. If I see a Group X doing something that I think is inappropriate, I would say something to the Outdoor Recreational Area management.
7. If I see a Group X doing something that I think is inappropriate, I would say something to the other groups or individuals.
8. If I think there are too many Group X as Outdoor Recreational Area, I would say something to Outdoor Recreational Area management.

Of the total of 31 statements, the following three (9.68%) statements were identified as “essential” by four (66.67%) of the six expert panel members.

1. Group X are not friendly.
2. Group X bother me at Outdoor Recreational Area.
3. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the Outdoor Recreational Area management.

All 31 statements listed met the minimum of 50% identified as “essential” requirement by the expert panel (Table 3). The following five questions were listed as unnecessary by one-panel member.

1. Group X are not friendly.
2. Group Xs presence reduce my enjoyment of Outdoor Recreational Area.
3. Group X bother me at Outdoor Recreational Area.
4. If I change my plans (timing or activity) because I think there are too many Group X I would say something to the Outdoor Recreational Area management.
5. If I see a Group X doing something that I think is inappropriate, I would say something to the Group X.

Although it was not part of the validation process of the instrument, the panel was asked to rate the descriptive questions and to comment if any statements needed to be reworded.

All nine descriptive questions met the minimum standard of 50% identified as essential. Again, recommended changes were listed in the comments section.

Table 3 *Content Validity Questions Identified as Essential by Expert Panel*

Question	n= Essential	% Essential
1. Group X do not follow the written rules of the Outdoor Recreational Area.	6	100.00
2. Group X litter	6	100.00
3. There are too many Group X.	6	100.00
4. Group X are not friendly.	4	66.67
5. Group X disrupt wildlife.	6	100.00
6. Group X are in my way.	5	83.33
7. Group X behave in a discourteous and rude manner.	6	100.00
8. Group X intentionally vandalize the natural environment	6	100.00
9. Group X block/disrupt my natural views.	6	100.00
10. Group X fail to be aware of others around them.	6	100.00
11. Group X unintentionally damage the natural environment.	5	83.33
12. Group X are too noisy.	6	100.00
13. Group X are unsafe.	6	100.00
14. Group X do not pick up after themselves.	6	100.00
15. Group X block entrances and exits.	6	100.00
16. Group X do not follow the common unwritten rules of Outdoor Recreational Area.	5	83.33
17. Group Xs' presence reduces my enjoyment of Outdoor Recreational Area.	5	83.33
18. Group X cause me to feel crowded at Outdoor Recreational Area.	6	100.00
19. Group X bother me at Outdoor Recreational Area	4	66.67
20. Group X make me feel unsafe at Outdoor Recreational Area.	6	100.00
21. I do not want to interact with Group X while at Outdoor Recreational Area.	6	100.00
22. I would recreate at Outdoor Recreational Area more often if there were fewer Group X.	6	100.00
23. I choose to go to Outdoor Recreational Area at a time when I think there will be fewer Group X.	6	100.00
24. I will still continue my Outdoor Recreational Activity even is there are a lot of Group X present.	6	100.00
25. I avoid Outdoor Recreational Area if I know there will be a lot of Group X.	6	100.00
26. When arriving at Outdoor Recreational Area, if there are too many Group X I will stay but change my planned activity.	6	100.00

Question	n= Essential	% Essential
27. If I change my plans (timing or activity) because I think there are too many Group X I would say something to the Outdoor Recreational Area management.	4	66.67
28. If I see a Group X doing something that I think is inappropriate, I would say something to the Group X.	5	83.33
29. If I see a Group X doing something that I think is inappropriate, I would say something to the Outdoor Recreational Area management.	5	83.33
30. If I see a Group X doing something that I think is inappropriate, I would say something to other groups or individuals.	5	83.33
31. If I think there are too many Group X at Outdoor Recreational Area, I would say something to Outdoor Recreational Area management.	5	83.33

Consequential Validity

Consequential validity is the measure of social consequences a study may inflict on its participants (Mills & Gay, 2016). Consequential validity was evaluated in three ways. First, the panel was asked to rate whether or not the survey would cause minimal to zero harm, some harm, or excessive harm to the participants. All panel member expressed that the instrument would cause minimal to zero harm to the participants. Second, the IRB approval suggest the board agreed that the study would cause no further harm to the participants than any person would experience in their daily routine. Finally, through simple observation, no participants of the study showed or expressed signs of physical or emotional harm during participation.

Construct Validity

Construct validity is the degree to which the structural foundation of the instrument is based on theoretical research and hypothetical concepts (Mills & Gay, 2016; Ragheb, 2012). Construct validity is justified through multiple avenues within this study. The first is that literature supports the validity of the instrument. This process was

done through the literature and methodology section of the study. The second measure is the content validity of the study. The minimum requirements of the content validity were met when more than 50% of the expert panel suggested that each question was considered essential. The final measurement used to develop a further construct validity was analyzing the discriminant validity of the final three variables with the rest of the study. For discriminant validity to be present, the last three variables of the study identifying participants height, amount of time spent cooking, and the amount of time spent talking on the cell phone should have little to no correlation with the rest of the instrument items. These questions were developed based on different examples and concepts of discriminant validity ("Convergent & discriminant validity," 2006; Mills & Gay, 2016; O'Toole, 2014; Ragheb, 2012; Vishwanath, 2015).

Demographics

As soon as the instrument was deemed valid by the expert panel and given approval by the IRB, it was distributed through an online Qualtrics link and through paper form (Appendix G). A total of 211 surveys were collected. Forty-seven of the surveys were done on paper with four being removed for non-completion. This removal of surveys left a total of 43 paper surveys usable. While Yetter and Capaccioli (2010) suggest that there is not a significant difference in participation rate in between online and papers surveys, McCabe et.al. (2006) suggest that there could be a significant difference. Of the 164 online surveys distributed, 81 of the online surveys were usable. Eight surveys were just previews and removed from the list. Thirty-five of the surveys were not fully completed. Twenty-one of the participant questionnaires were removed from the study due to them not identifying as a resident to the area. Nineteen of the

participants responded that they do not participate in the outdoor recreational activities of hiking, horseback riding, mountain biking, or fly fishing; thus, those questionnaires were removed. The removal of the unusable online surveys left a total of 124 usable surveys between online and paper total.

The ages of the participants ranged from 18 to over 65 years. The most frequent age range was adults between the ages of 35-44 years. Thirty-six (29%) of the participants were in this age range. The smallest age range was 12 (9.7%) adults reporting at 65 years or older. Of the 124 participants of the survey, 47 (37.9%) of them identified as male, 75 (60.5%) identified as female, and 2 (1.6%) preferred not to disclose their gender. While O'Neill, Marsden, Matthis, Raspe, and Silman (1995) suggest that females are more likely to participate in surveys, Yetter and Capaccioli (2010), suggest that the difference is minimal at best. Of the 124 participants, 2 (1.6%) identified as Hispanic descent, while 122 (98.4%) identified as non-Hispanic descent. One-hundred and sixteen of participants identified as White. One (.8%) individual identified as Black/African American and one (.8%) individuals identified as American Indian/Alaska Native. Five (4%) of the participants identified their race as other, and one (.8%) did not provide an answer to determine race (Table 4).

Residents were considered individuals who lived within 35 mile range of DSRF. This range of participants from areas of Brevard NC, expanding Asheville, NC, to Sapphire, NC, and leading into the upper northeastern region of SC. The most frequent resident was a total of 54 (43.5%) individuals residing in the zip code 28712. Two (1.6%) of the individuals did not provide a zip code (Table 5). Of the 124 participants, the highest frequency was 47 (37.9%) individuals stating they had lived at their current

zip code between 1-5 years with the second highest being more than 15 years at 26 (21%) of the individuals. Less than one year was the least frequently identified time span individuals identified living at their current residence. Thirteen (10.5%) individuals reported living at their residents less than a year (Table 6).

Table 4 *Age Range, Gender, Ethnicity, and Race Frequency*

Demographics	Responses	Frequency	Percent
Age	18-24	14	11.3
	25-34	24	19.4
	35-44	36	29.0
	45-54	19	15.3
	55-64	19	15.3
	65+	12	9.7
Gender	Male	47	37.9
	Female	75	60.5
	Prefer not to say	2	1.6
Hispanic Descent	Yes	2	1.6
	No	122	98.4
Race	White	116	93.5
	Black/African American	1	.8
	American Indian/Alaska Native	1	.8
	Other	5	4
	No Answer	1	.8

Table 5 *Number of Residents at Zip Codes*

Zip code	Frequency	Percent
28712	54	43.5
28768	21	16.9
28718	5	4.0
29671	4	3.2
28739	3	2.4
28766	3	2.4
28791	3	2.4
28804	3	2.4
28806	3	2.4
29635	3	2.4
29690	3	2.4
No Response	2	1.6
28711	2	1.6
28792	2	1.6
29609	2	1.6
29611	2	1.6
29617	2	1.6
29687	2	1.6
29349	1	0.8
29640	1	0.8
29644	1	0.8
29650	1	0.8
29681	1	0.8

Table 6 *Length of Time at Residence*

Length	Frequency	Percent
Less than 1 year	13	10.5
1-5 years	47	37.9
5-10 years	22	17.7
10-15 years	16	12.9
15+ Years	26	21.0

The data collected included the level of education. Of the 124 participants, 44 (35.5%) had completed a four-year degree, followed by 32 (25.8%) receiving a

Masters/Professional degree, and 25 (20.2%) receiving some college. All the participants finished high school or earned their General Education Degree (Table 7).

Table 7 *Highest Level of Education Earned*

Education	Frequency	Percent
Less than High school	0	0.0
High school Diploma or GED	5	4.0
Some College	25	20.2
2 Year degree or associates	12	9.7
4-year degree r bachelors	44	35.5
Professional or Masters	32	25.8
Doctorate	6	4.8

Descriptive Statistics

Descriptive information was collected to identify how frequently the participants went to DSRF and how often they go hiking, mountain biking, horseback riding, and fly fishing. Also, the participants identified their perceived skill levels of hiking, mountain biking, horseback riding and fly fishing.

The participant was asked how frequently they go to DSRF on a monthly basis within each of the four seasons of winter (December, January, February), spring (March, April, May), summer (June, July, August), and fall (September, October, November). During all four season, 1-3 days per month was most frequently identified as how often the participants went to DSRF. Twenty-six (21%) participants said they do not go DSRF during the winter months. The spring and fall months tend to see more frequency of visitation. Summer visitation tended to have a reduction in visitation from residents (Table 8).

Table 8 *DuPont State Recreational Forest Visitation*

	Winter		Spring		Summer		Fall	
Days	Frequency	%	Frequency	%	Frequency	%	Frequency	%
0	26	21.0	8	6.5	18	14.5	8	6.5
1-3	50	40.3	43	34.7	35	28.2	44	35.5
4-6	25	20.2	40	32.3	34	27.4	30	24.2
7-9	8	6.5	18	14.5	15	12.1	18	14.5
10+	15	12.1	15	12.1	22	17.7	24	19.4

Note. Winter: Dec, Jan, Feb; Spring: Mar, Apr, May; Summer: Jun, Jul, Aug; Fall: Sep, Oct, Nov

Hiking was the most frequented outdoor recreational activity partaken by the survey participants at 120 (96.8%). Mountain biking followed this at 54 (43.5%), horseback riding at 49 (39.5%), and finally, fly fishing at 44 (35.4%) (Table 9). Of the 124 participants, 84 (67.7%) of them claimed they participated in more than one of the outdoor recreational activities.

Table 9 *Participation frequency in outdoor recreational activities*

	Winter		Spring		Summer		Fall	
Days	f*	%	f	%	f	%	f	%
Hiking								
N/A	4	3.2	4	3.2	4	3.2	4	3.2
0	18	14.5	5	4.0	6	4.8	6	4.8
1-3	43	34.7	36	29.0	35	28.2	35	28.2
4-6	31	25.0	41	33.1	39	31.5	37	29.8
7-9	6	4.8	16	12.9	20	16.1	18	14.5
10+	22	17.7	22	17.7	20	16.1	24	19.4

	Winter		Spring		Summer		Fall	
Days	f*	%	f	%	f	%	f	%
Horseback Riding								
N/A	75	60.5	75	60.5	75	60.5	75	60.5
0	25	20.2	24	19.4	25	20.2	23	21.0
1-3	13	10.5	7	5.6	9	7.3	11	8.9
4-6	6	4.8	11	8.9	10	8.1	10	8.1
7-9	2	1.6	2	1.6	1	0.8	1	0.8
10+	3	2.4	5	4.0	4	3.2	4	3.2
Mountain Biking								
N/A	70	56.5	70	56.5	70	56.5	70	56.5
0	23	18.5	17	13.7	19	15.3	19	15.3
1-3	11	8.9	13	10.5	14	11.3	14	11.3
4-6	8	6.5	10	8.1	5	4.0	6	4.8
7-9	4	3.2	5	4.0	7	5.6	6	4.8
10+	8	6.5	9	7.3	9	7.3	9	7.3
Fly Fishing								
N/A	86	69.4	86	69.4	86	69.4	86	69.4
0	23	18.5	21	16.9	22	17.7	22	17.7
1-3	8	6.5	5	4.0	6	4.8	4	3.2
4-6	4	3.2	8	6.5	8	6.5	7	5.6
7-9	1	0.8	1	0.8	0	0.0	2	1.6
10+	2	1.6	3	2.4	2	1.6	3	2.4

Note.* f = frequency
Winter: Dec, Jan, Feb; Spring: Mar, Apr, May; Summer: Jun, Jul, Aug; Fall: Sep, Oct, Nov

The winter months were the time participants took part in their outdoor recreation the least (Figure 3). Hiking participation increased in the spring, leveled off in the summer and again increased in the fall. Both horseback riding and mountain biking peaked in the spring and lowered in the summer and fall. Fly fishing had higher participation in the spring and fall but lower participation in the summer.

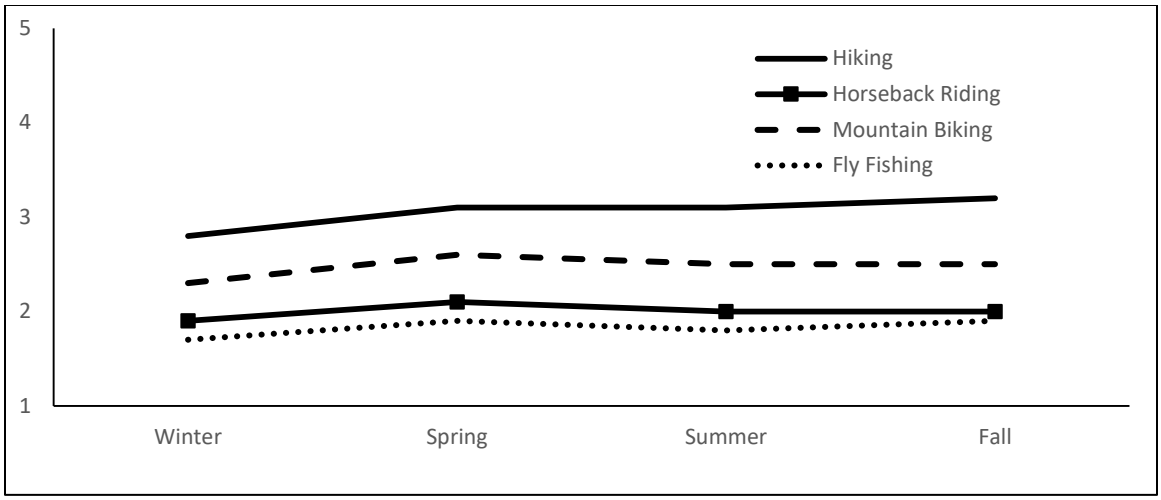

Figure 3 Outdoor recreational participation through the seasons. Y axis: 1 = 0 days; 2 = 1-3 days; 3 = 4-6 days; 4 = 7-9 days; and 5 = 10+ days per month.

Along with frequency in participation, the instrument gathered participants perceived skill level in the outdoor recreational activities of hiking, horseback riding, mountain biking, and fly fishing. A majority at 53 (42.7%) of the hikers perceived their skills at an intermediate level. The rest of the activities were mostly beginners if the non-applicable participants were removed from the calculations. Hiking and mountain biking was recorded as the most experts versus horseback riding and fly fishing (Table 10).

Table 10 *Participants Skill Levels of Outdoor Recreational Activities*

	Hiking		Horseback		Mt. Biking		Fly fishing	
Days	f*	%	f	%	f	%	f	%
N/A	4	3.2	75	60.5	70	56.5	86	69.4
Beginner	9	7.3	22	17.7	19	15.3	15	12.1
Intermediate	53	42.7	17	13.7	17	13.7	9	7.3
Advanced	41	33.1	8	6.5	6	4.8	9	7.3
Expert	17	13.7	2	1.6	12	9.7	5	4.0

Note. * f = frequency

Factor Analysis

A principle factor analysis divided the instrument into four factors. Bartlett's Test of Sphericity suggest there is homogeneity of variance within the sample of the

population ($p < .05$). In addition, the Kaiser-Meyer-Olkin score of .916 suggest that the sample is adequate for a factor analysis. An exploratory factor analysis was performed and recommended which item belonged in each factor/subscale. The first subscale contained items 1-16. The commonalities of these statements related to perceptions of tourist behavior being a potential problem. Labelling factors is based on finding commonalties within each subscale (Yong, & Pearce, 2013). This subscale was labeled "Perceptions of Behavior." The second subscale contained items 17, 18, 22, 23, 25, and 26. The commonality within this subscale related to participants' tolerance towards crowding. This subscale was labeled "Tolerance with Crowding." The third subscale contained items 19, 20, 21, 24, 27, and 31. The commonality within this subscale related to participants' tolerance towards interactions with tourists. This subscale was labeled "Tolerance with Interaction." The fourth and final subscale contained items 28, 29, and 30. The commonality within this subscale related to participants' expressing their conflict. This subscale was labeled "Expressing Conflict." A few statements lined in multiple subscales. All statements with alignment in multiple subscales were placed in the subscale noting the highest factor loading score (Table 11).

Table 11 *Exploratory Factor Analysis*

Statements	Behavior	Crowding	Interaction	Express
1. Tourists do not follow the written rules of the DuPont State Forest.	.88			
2. Tourists litter.	.80			
3. There are too many tourists.	.48			
4. Tourists are not friendly.	.71			
5. Tourists disrupt wildlife.	.73			
6. Tourists are in my way.	.41			
7. Tourists behave in a discourteous and rude manner.	.77			

Statements	Behavior	Crowding	Interaction	Express
8. Tourists intentionally vandalize natural environment.	.71			
9. Tourists block/disrupt my natural views.	.60			
10. Tourists fail to be aware of others around them.	.72			
11. Tourists unintentionally damage the natural environment.	.74			
12. Tourists are too noisy.	.66			
13. Tourists are unsafe.	.73			
14. Tourists do not pick up after themselves.	.83			
15. Tourists block entrances and exits.	.69			
16. Tourists do not follow the common unwritten rules of DuPont State Forest.	.80			
17. Tourists presences reduce my enjoyment of DuPont State Forest.		.66		
18. Tourists cause me to feel crowded at DuPont State Forest.		.73		
19. Tourists bother me at DuPont State Forest.			.62	
20. Tourists make me feel unsafe at DuPont State Forest.			.44	
21. I do not want to interact with tourists while at DuPont State Forest.			.54	
22. I would recreate at DuPont State Forest more often if there were fewer tourists.		.71		
23. I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.		.75		
24. I will still continue to do my planned Hiking/Mtn Biking/Horseback riding /Fishing even if there are a lot of tourists present.			-.55	
25. I avoid DuPont State Forest if I know there will be a lot of tourists.		.77		

Statements	Behavior	Crowding	Interaction	Express
26. When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity.		.62		
27. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.			.63	
28. If I see a tourist doing something that I think is inappropriate, I would say something to the tourist.				.58
29. If I see a tourist doing something I think is inappropriate, I would report it to DuPont State Forest management.				.78
30. If I see a tourist doing something that I think is inappropriate, I would say something to other groups or individuals.				.75
31. If I think there are too many tourists at DuPont State Forest, I would say something to DuPont State Forest management.			.57	

Reliability

An internal consistency measured by coefficient alpha reliability testing method was utilized to analyze the reliability of each subscale in the instrument. The survey separated into four sections, not including the demographics or descriptive segments. The first subscale evaluated whether the participants perceived to what extent behaviors at DSRF were a problem. The second subscale was related to participants' tolerance with crowding. The third subscale factored around the concept of participant's tolerance towards interaction with another user group (tourists). The fourth and final subscale was how participants might express their conflict with another user group (tourists). In the first subscale, statement 3 (There are too many tourists) had the highest mean score ($\bar{x}$ = 3.23). Statement four (Tourists are not friendly) had the lowest mean score ($\bar{x} = 2.00$).

The second subscale included statements related to crowding. These statements measured if the participants of the survey agreed with statements from strongly disagree (1) to strongly agree (5) with a neutral score in the middle (3). Of the second subscale, statement 23 (I choose to go to DuPont State Forest at a time when I think there will be fewer tourists) had the highest mean score ($\bar{x} = 4.16$). Statement 26 (When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity) had the lowest mean score ($\bar{x} = 2.86$).

The third subscale, contained statements related to the interactions between the participants and tourists. The statements measured if the participants of the survey agreed with statements from strongly disagree (1) to strongly agree (5) with a neutral score in the middle (3). Of the third subscale, statement 24 (I will still continue to do my planned Hiking/Mtn. Biking/Horseback riding /Fishing even if there are a lot of tourists present) had the highest mean score ($\bar{x} = 3.31$). Statement 27 (If I change my plans {timing or activity} because I think there are too many tourists, I would say something to the DuPont State Forest management) had the lowest mean score ($\bar{x} = 1.70$).

The final component, included statements related to participants expressing their outdoor recreational conflict. These statements measured if the participants of the survey agreed with statements from strongly disagree (1) to strongly agree (5) with a neutral score in the middle (3). Of the fourth component, statement 28 (If I see a tourist doing something that I think is inappropriate, I would say something to the tourist) had the highest mean score ($\bar{x} = 3.60$). Statement 27 (If I see a tourist doing something that I think is inappropriate, I would say something to other groups or individuals) had the lowest mean score ($\bar{x} = 3.04$) (Table 12).

Table 12 *Participants Perceived Conflict at DuPont State Recreational Forest*

Statements	Mean	SD
Perceptions of Behavior		
1. Tourists do not follow the rules of the DuPont State Forest.	2.75	1.36
2. Tourist litter.	3.01	1.39
3. There are too many tourists.	3.23	1.48
4. Tourists are not friendly.	2.00	1.11
5. Tourists disrupt wildlife.	2.52	1.29
6. Tourists are in my way.	2.50	1.39
7. Tourists behave in a discourteous and rude manner.	2.22	1.30
8. Tourists intentionally vandalize the natural environment.	2.05	1.26
9. Tourists block/disrupt my natural views.	2.24	1.38
10. Tourists fail to be aware others around them.	2.89	1.38
11. Tourists unintentionally damage the natural environment.	2.76	1.38
12. Tourists are too noisy.	2.36	1.29
13. Tourists are unsafe.	2.50	1.34
14. Tourists do not pick up after themselves.	2.90	1.37
15. Tourists block entrances and exits.	2.66	1.44
16. Tourists do not follow the common unwritten of DuPont State Forest	2.70	1.34
Tolerance with Crowding		
17. Tourists presences reduce my enjoyment of DuPont State Forest.	3.06	1.31
18. Tourists cause me to feel crowded at DuPont State Forest.	3.29	1.43
22. I would recreate at DuPont State Forest more often if there were fewer tourists.	3.22	1.44
23. I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.	4.16	1.23
25. I avoid DuPont State Forest if I know there will be a lot of tourists.	3.75	1.43
26. When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity.	2.86	1.42
Tolerance with Interactions		
19. Tourists bother me at DuPont State Forest.	2.70	1.31
20. Tourist make feel unsafe at DuPont State Forest.	2.03	1.14
21. I do not want to interact with tourists while at DuPont State Forest.	2.52	1.36
24. I will still continue to do my planned Hiking/Mtn. Biking/Horseback riding /Fishing even if there are a lot of tourists present.	3.31	1.38
27. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.	1.70	1.07

Statements	Mean	SD
31. If I think there are too many tourists at DuPont State Forest, I would say something to DuPont State Forest management.	2.22	1.34
Expressing Conflict		
28. If I see a tourist doing something that I think is inappropriate, I would say something to the tourist.	3.60	1.24
29. If I see a tourist doing something I think is inappropriate, I would report it to DuPont State Forest management.	3.37	1.21
30. If I see a tourist doing something that I think is inappropriate, I would say something to other groups or individuals.	3.04	1.28

Reliability of all four sections developed four coefficients: Perceived behavior statements consisted of 16 items (α = .959), crowding statements subscale consisted of 6 items (α = .871), the interactions statements consisted of 6 items (α = .531), and the outdoor recreational conflict expression statements consisted of 3 items (α = .600). The analysis suggested that removing certain statements would increase the reliability of the instrument. Eliminating statement 26 (When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity) from the second subscale would increase the alpha from .871 to .891. The statement 26 was removed.

The third subscale had an unacceptable reliability (α = .531). Removing statement 24 (I will still continue to do my planned Hiking/Mtn. Biking/Horseback riding /Fishing even if there are a lot of tourists present) raised the alpha from .531 to .772 which was acceptable. Statement 24 was removed. The final subscale (expression statements) was an unacceptable reliability alpha (α = .600). Removing any of the questions did not increase the alpha to an acceptable level. This subscale and associated statements were removed.

The first subscale (Perceives of Behavior) of the inventory was found to be highly reliable (16 items; α = .959). The correlations of the statements varied from as low as .35

to as high as .82 (Appendix H). The second subscale (Tolerance with Crowding) of the inventory measured a reliable score (6 items; α = .878). The correlations of the statements varied from as low as .28 to as high as .82. It was suggested to remove the statement 26, (When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity), to raise the reliability coefficient alpha to a five item α=.891 (Table 13).

Table 13 *Second Subscale Correlation, Coefficient Alpha, and Coefficient Alpha if the Statement is Removed*

Tolerance with Crowding	17.	18.	22.	23.	25.	26.	α if deleted	Alpha
17. Tourists presences reduce my enjoyment of DuPont State Forest.	1.0						.840	.871
18. Tourists cause me to feel crowded at DuPont State Forest.	.82	1.0					.836	
22. I would recreate at DuPont State Forest more often if there were fewer tourists.	.72	.70	1.0				.834	
23. I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.	.51	.54	.56	1.0			.849	
25. I avoid DuPont State Forest if I know there will be a lot of tourists.	.53	.55	.62	.69	1.0		.84	
26. When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity.	.28	.30	.34	.40	.46	1.0	.891	

The third subscale (Tolerance with Interactions) of the inventory was not reliable (6 items; α = .531). The correlations of the statements varied from as low as .19 to as high as .62. It was suggested to remove the statement 24, (I will still continue to do my planned Hiking/Mtn. Biking/Horseback riding /Fishing even if there are a lot of tourists present), to raise the coefficient alpha to a reliable of a five item α = .772 (Table 14). Removing statement 24, also, removed all negative correlations.

Table 14 *Third Subscale Correlation, Coefficient Alpha, and Coefficient Alpha if the Statement is Removed*

Tolerance with Interactions	19.	20.	21.	24.	27.	31.	α if deleted	Alpha
19. Tourists bother me at DuPont State Forest.	1.0						.337	.531
20. Tourist make feel unsafe at DuPont State Forest.	.62	1.0					.370	
21. I do not want to interact with tourists while at DuPont State Forest.	.67	.42	1.0				.387	
24. I will still continue to do my planned Hiking/Mtn. Biking/Horseback riding /Fishing even if there are a lot of tourists present.	-.38	-.30	-.28	1.0			.772	
27. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.	.31	.37	0.29	-.25	1.0		.410	
31. If I think there are too many tourists at DuPont State Forest, I would say something to DuPont State Forest management.	.30	.35	0.19	-.21	0.58	1.0	.423	

The finale subscale (expression statements) of the inventory was found to be not reliable (3 items; α =.600). The correlations of the statements varied from as low as .26 to as high as .43. Removing of any of these questions would raise alpha but not to an acceptable alpha. Removal of all three statements eliminated the fourth subscale (Table 15).

Table 15 *Fourth Subscale Correlation, Coefficient Alpha, and Coefficient Alpha if the Statement is Removed*

Expressing Conflict	28.	29.	30.	α if deleted	Alpha
28. If I see a tourist doing something that I think is inappropriate, I would say something to the tourist.	1.0			.605	.600
29. If I see a tourist doing something I think is inappropriate, I would report it to DuPont State Forest management.	.26	1.0		.47	
30. If I see a tourist doing something that I think is inappropriate, I would say something to other groups or individuals.	.31	.43	1.0	.471	

Re-analyzing the reliability with the statements removed and only three subscales developed three coefficients: Perception of Behavior statements consisted of 16 items (α = .959); Tolerance with Crowding statements subscale consisted of five items (α = .891); the Tolerance with Interactions statements consisted of five items (α = .772).

A correlation matrix was run to determine how each of the factored components correlated with each other. The crowding and behavior subscales had a .65 correlation while interaction had a correlation of .69 with the behavior subscale and a .58 with the crowding subscale (Table 16).

Table 16 *Reliability and Correlation of the Three Remaining Factor Subscales*

Subscales	Problem	Crowding	Interaction
Behavior	.959*		
Crowding	.65	.891*	
Interaction	.69	.58	.772*

* The coefficient alpha for each factored subscale

Discriminant Validity

A Pearson correlation was run to identify if the correlations were significant along with discriminant validity. These measures further justified construct validity. There was significance correlation ($p < .05$) with all three subscales (Perception of Behavior,

Tolerance with Crowding, and Tolerance with Interactions) with each other. When comparing height, time spent cooking, and time spent talking on the cell phone, there was little to no correlation ($p > .05$) when comparing to the subscales (Table 17).

Table 17 *Pearson's Correlation for Significance and Discriminant Validity*

	Behavior	Crowding	Interaction	Tall	Cooking	Cell
Behavior	1.0	.65*	.69*	0.059	0.056	0.051
Crowding		1.0	.58*	0.040	0.043	0.043
Interaction			1.0	-0.009	0.038	0.027

*. Correlation is significant at the 0.01 level (2-tailed).

Conclusion

This study was designed to develop a standardized instrument that could measure perceived outdoor recreation conflict between user groups at various locations participating in a variety of outdoor recreation activities. Through the expert panel reviews and data collection at DSRF, validity and reliability, as well as factor analysis, indicate that the instrument developed is valid with three subscales. The reliability of the instrument considering the user groups to be residents and tourists, and the listed outdoor recreation activities was found to be reliable. Utilizing this instrument at different locations, with different outdoor recreation activities, and with different user groups could maintain its validity and would potentially only need reliability calculations.

CHAPTER V

Discussion

The purpose of the study was to develop a valid and reliable instrument measuring outdoor recreational conflict. This instrument was developed to be utilized in different locations, changing outdoor recreational activities, and changing the user groups of the study without having to go through the validation and reliability process for each use of the instrument. To this end, an instrument was developed utilizing research from previous studies, literature review, and expert input. It was tested for content validity, construct validity, and consequential validity, then tested for reliability, and discriminate validity.

During the content validity portion of the study, each of the 31 questions was given the approval rating of "essential" by at least four (66.67%) of the six expert panel members. These approvals achieved the minimum requirement of Lawshe's criteria of 50% (Lawshe 1975; Ragheb, 2001). The result of this suggests the original instrument meets the criteria of content validity.

Consequential validity was measured in three ways. The first was by panel review, the second was by IRB approval, and finally, it was estimated by observing individual participating the study. All panel members expressed the investigation would cause no to minimal harm to the participants. The IRB panel agreed in the study would not cause any further damage to the participants than what they would have experienced

in their daily routine. Finally, through observations, the participants showed no signs of physical, emotional, or physiological harm while participating in the study.

Construct validity was considered through multiple avenues. The literature review suggests the instrument meets construct validity. The expert panel approved the content validity which indicates the study is created to measure outdoor recreational conflict. Pearson's correlation further justifies that the instrument has construct validity was valid by referring to the significance subscales correlating to each other. The Perception of Behavior and Tolerance with Crowding subscales correlate $r = .65$ ($p < .05$). The Perception of Behavior and Tolerance with Interactions subscales correlate $r = .69$ ($p < .05$). Finally, the Tolerance with Crowding and Tolerance with Interactions subscales correlate $r = .58$ ($p < .05$). In addition Pearson's correlation suggests that the discriminant validity was valid by referring to the subscales and that they are not correlated to variables of the study related to height, amount of time each day spent cooking, and amount of time each day talking on the cell phone. The problem subscale was not correlated to height, time talking on cell phone, and time spent cooking with $r = .0059$ ($p > .05$) for height, $r = .0056$ ($p > .05$) cell phone, and $r = .0051$ ($p > .05$) cooking. The crowding subscale was not correlated to height, time talking on cell phone, and time spent cooking with $r = .0040$ ($p > .05$) for height, $r = .0043$ ($p > .05$) cell phone, and $r = .0043$ ($p > .05$) cooking. The interaction subscale was not correlated to height, time talking on cell phone, and time spent cooking with $r = -.009$ ($p > .05$) for height, $r = .0038$ ($p > .05$) cell phone, and $r = .0027$ ($p > .05$) cooking.

A factor analysis was run on the results of the study. The initial principle factor analysis provided a Kaiser-Mayer-Olkin (KMO) result for sampling adequacy. The

KMO for the study was a .916 which suggests the sample was adequate for factoring (Kaiser, 1974). Although there is debate about how large a sample size should be, the study produces an eigenvalue of 13.634. A higher eigenvalue is suggested the sample, n = 124, is a robust representation of the population (Yurdugul, 2008). The exploratory factor analysis suggested four subscales. The first subscale includes statements where the participants perceived behavior as a problem. The second subscale had a commonality of statements relates to the participants tolerance with crowding issues. The third section of the study refers to the participant's tolerance with interactions. Finally, the fourth subsclae provides statements about the participants communicating or expression conflict.

The four factors were was analyzed through an inter-rater reliability and internal consistency of coefficient alpha analysis. Reliability of all four sections developed four coefficients: Perception of Behavior statements consisted of 16 items ($\alpha = .959$), Tolerance with Crowding statements subscale consisted of 6 items ($\alpha = .871$), the Tolerance with Interactions statements consisted of 6 items ($\alpha = .531$), and the Expressing Conflict statements consisted of 3 items ($\alpha = .500$). A total of five questions were suggested to be removed to raise coefficient alphas. This removal resulted in only three subscales. Reliability analysis was rerun for the three subscales with questions removed. The problem statements consisted of 16 items ($\alpha = .959$); the crowding statements subscale consisted of five items ($\alpha = .891$); the interactions statements consisted of five items ($\alpha = .772$) (Table 18).

Table 18 *Final Subscales and Coefficient Alphas*

Statements	α
Perceived Behavior	.959
1. Tourists do not follow the written rules of the DuPont State Forest.	
2. Tourists litter.	
3. There are too many tourists.	
4. Tourists are not friendly.	
5. Tourists disrupt wildlife.	
6. Tourists are in my way.	
7. Tourists behave in a discourteous and rude manner.	
8. Tourists intentionally vandalize natural environment.	
9. Tourists block/disrupt my natural views.	
10. Tourists fail to be aware of others around them.	
11. Tourists unintentionally damage the natural environment.	
12. Tourists are too noisy.	
13. Tourists are unsafe.	
14. Tourists do not pick up after themselves.	
15. Tourists block entrances and exits.	
16. Tourists do not follow the common unwritten rules of DuPont State Forest.	
Tolerance with Crowding	.891
17. Tourist's presences reduce my enjoyment of DuPont State Forest.	
18. Tourists cause me to feel crowded at DuPont State Forest.	
19. I would recreate at DuPont State Forest more often if there were fewer tourists.	
20. I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.	
21. I avoid DuPont State Forest if I know there will be a lot of tourists.	
Tolerance with Interactions	.772
22. Tourist bother me at DuPont State Forest.	
23. Tourist make feel unsafe at DuPont State Forest.	
24. I do not want to interact with tourists while at DuPont State Forest.	
25. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.	
26. If I think there are too many tourists at DuPont State forest I would say something to DuPont State Forest management.	

While there is not an entirely similar study to this one, previous studies were used to develop statements for this study. Statements four, seven, and 24 had similar means as to Beal's et al. (2011). Statements that were similar with only up to a .05 difference on a five-point scale. Statements 10, 13, 15, 17, and 19 had a more significant mean

separation to Beal's et al. (2011) study with .40 difference in means difference and up to 1.34 mean difference on the five-point scale. Questions eight, 11, 12, and 21 means had a larger mean difference of Thapa and Graefe's (2003) study with a .16-1.18 means difference on a five-point scale. Additional mean differences were not comparable to the other studies or the statements. Although these means can be compared, it can also be viewed as not relevant because the previous studies were comparing recreational activities and were not transferable to other areas, activities, and user groups.

Items 3, 6, 9, 10, 15, 18, 19, 20, 21, 25, 26 addresses Crowding Theory by having participants identify whether their perceived crowding in an area is an issue and how they tolerate crowding in an area (Graefe & Moore, 1992; Stankey, 1973; Stokols, 1972). Items 20, 21, and 23 addresses Displacement Theory and coping mechanism by having the participant identify their coping mechanism based on their tolerance with crowding and interactions (Anderson, 1980a, 1980b; Anderson, 1984; Anderson & Brown, 1984; Beal et al., 2011; Dekker, 1976; Hall & Cole, 2007; Manning, 2011; Moore & Driver, 2005; Nielsen & Shelby, 19770.

Jacob and Schreyer (1980) address four major factors in of outdoor recreational conflict: 1) Activity attachment, 2) Natural resource attachment, 3) Goal of being in the natural environment, and 4) Tolerance of others. Through utilizing descriptive questions such as frequency, skill level, frequency of going to an outdoor recreational location, this instrument can identify as a whole the attachment a participant has towards activities, their natural resources and how their tolerance and perceived behavioral problems in the area when interacting with other people/parties may outdoor recreational conflict.

Implications

After the validity and reliability testing of this instrument, it can be utilized to understand outdoor recreational conflict and crowding further. The analysis of the study is supported by evidence of existing literature and previous studies. The correlations of the subscale may suggest that the three factors may impact each other when measuring outdoor recreational conflict. Crowding and interactions could influence perceived problems in outdoor recreation conflict, each other and vice-versa.

While other studies were confirmed as reliable and valid, it was unclear whether they were usable for other locations or recreational activities (Beal et al., 2011; Mann & Absher, 2008; Vaske, et al., 2007; Vittersø et al., 2004). This study provides further opportunity for outdoor recreational conflict to be studied at multiple sites, with participants engaging in different recreational activities, and changing the variable of the user groups within the survey.

This study compares residents' perceptions of tourists when utilizing the same natural resources. Further analysis of the results needs to be done. A comparison of the frequency of visitation to natural resources, the rate of active participation, the activities, and skill levels can assist in understanding different levels of outdoor recreational conflict. Natural resource departments utilize crowding concerns to manage land and water usage (Moore & Driver, 2005). This instrument may help management identify if there is conflict between user groups, such as residents and tourist. Identifying whether there is a concern for conflict may provide managements with information beneficial for planning and managing recourses. As previously stated, it may be important for the resource managers to understand users and perceived conflict to maintain the outdoor

recreation industry. Proper management of the outdoor recreational resources can assist in keeping the outdoor recreation industry a potentially sustainable economic resource.

Limitations to the Study

A limitation to the study occurred during the collection of data from the paper survey. One week of data collection was limited due to road blocks to a data collection location.

Another limitation was the online version of the questionnaire was restricted to only five of the 13 requested social club sites due to technical and accessibility issues. Although only five clubs posted the questionnaire on their sites, this provided additional opportunity for residents to complete the questionnaire.

One potential limitation was a potential lower sample size than optimal. However, Kaiser (1974) and Yurdugul (2008) suggests that KMO being .916 and the eigenvalue being 13.634 to be sufficient. Thus, the sample size should be adequate for validity and reliability testing. Finally, time of year/season may have had an effect on data collection. If data collection were completed during multiple seasons, results may have varied. Additionally, more residents may have been in the area at times other than summer, which is noted as an increased tourist time.

Recommendations for Future Research and Conclusion

Further analysis of the data collected to see if there is a significant difference between different variables of frequency visiting DSRF; the different and the frequency of participation in the outdoor recreational activities of hiking, horseback riding, mountain biking, and fly fishing; and skill levels in the activities is the first recommendations of the study. It is also recommended analyzing how perceived conflict

is impacted by demographics, length of residency, and distances resident live from DSRF.

It is recommended to continue to test the reliability of the study at additional location reviewing different recreational activities and defining different variable user groups. Further analysis may provide a larger samples sizes for the reliability of the instrument. Larger samples may reveal if it is still suggested to eliminate certain questions in different scenarios.

Outdoor recreational locations that are known to be areas of potential conflict between user groups such as surf beaches, kayaking rivers, and climbing locations might be additional suggested locations for this research.

It is recommended to see how employees of the outdoor industry perceive conflict with user groups utilizing the same natural resources, and if it differs from those persons not working in the industry.

The "expressing conflict" subscale statements and statements 25 and 26 were developed within the original instrument to identify if participants of the survey would express their concerns with conflict to other individuals or parties. Previous studies do not appear to include whether individuals express their concerns of conflict or crowding (Beal et al., 2011; Carothers, et al., 2001; Cessford, 2003; Hall & Cole 2007; Mann & Absher 2008; Thapa & Graefe 1999; Vaske, et al., 2000; Vaske, et al., 2007; Vittersø, et al., 2004). Further research into the willingness for an individual to express concerns of conflict or crowding to other people or parties is needed.

Finally, it is recommended to utilize this instrument with other studies such as leisure satisfaction, leisure motivation, experiential education, etc. to see how outdoor

recreational conflict might interact with leisure aspects of motivation, satisfaction, and more.

In conclusion, the research study has provided a valid and reliable instrument that can continue to be used in a variety of natural resource locations with various outdoor recreational activities, and considering different user groups, and still be considered valid (Appendix I). This instrument may open up new opportunities for further research to gain a further understanding of the outdoor recreational conflict.

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APPENDICES

Appendix A

You and Donald Beal aren't connected on Facebook

Works at City of Raleigh

Lives in Raleigh, North Carolina

JAN 12TH, 12:08PM

Curtis: Dr. Beal, I have been sorry to bother you through facebook, but this is all I have found. I am currently working on my dissertation which is about the outdoor recreational conflict between tourist and residents. I would like to use your instrument from your dissertation as the template for my study but having difficulty finding some information. You mentioned in your paper your instrument was modified from Jacob and Scheyer's primary conflict instrument and Thapas instrument from skiing and snowboarding. I see how you tested for reliability but do not see if it was a general test of test for yourrecreational activities only. Essentially I would like to use your instrument with the modification of instead of water sports they would be hikers, horseback, mountain bikers, and anglers (flyfisherman). And at the location of Dupont State Recreational Forest. Would this be possible or would I have to completely retest the instrument? And if I do, would you be aware of any instruments that I could utilize in that format? You can get a hold of me through here or curtis.clemens@okstate.edu or 864-643-9981.

Beal: Hey man...that was for my masters thesis over 5 years ago...I honestly don't remember...if you really need the information my advisor was dr.clifton Watts at ecu. If you could get up with him he may could explain it better. He is a pretty nice and helpful guy if you can catch him. I hope this helps and feel free to ask me anything if need be..are you going for M.s. or phd?

Curtis: PhD Thank you very much I will see what I can do.

Beal: Oh nice well I hope it works out for you. He could probably be more helpful..it's just been a while since I've been in the academia world

Curtis: Good Morning, I know it has been a while but I just wanted to check with you to make sure it is ok for me to use your instrument you developed for your masters for my PhD dissertation. I did adapt itfor my study. Thank you very much. I hope the holidays are treating you well.

Beal: That’s great man... I wish you the best..Did you ever get in contact with cliff watts?

Curtis: Yep. It all worked out great. I appreciate it.

Beal: Man that’s awesome I’m so glad you have been able to use that

Appendix B

Committee Members Letters and Instructions

Dear _____:

I am writing to request your assistance as a juror in validating an instrument that is being developed to collect data on outdoor recreational conflict. You are being invited to participate in this process because of your expertise, work, knowledge, and interest in some aspect of outdoor recreation.

Participation in this process will include two or more reviews of the draft instrument. I would estimate that each review would take you approximately 15-30 minutes to complete. Should you accept my invitation to serve as juror, click on the following link that includes a copy of the draft instrument and instructions for completing the reviews:

https://okstatecoe.az1.qualtrics.com/jfe/form/SV_7X9LvG5WnZYPKHH

Thank you for considering this request. Please contact me via e-mail or telephone by (insert date) to let me know of your decision. I look forward to hearing from you soon.

Sincerely,

Curtis Clemens
OSU Ph.D. Student
864-643-9981
Curtis.clemens@okstate.edu

Appendix C

Scripts for collecting data

Paper Survey:

(After approaching participants)

"Hello, I am collecting data in regard to Outdoor Recreational Conflict and Crowding. This information will be utilized for Ph.D. research towards my dissertation in developing a reliable instrument of measure. Would you mind answering few questions?"

Participants Say "No."-"Thank you for your time. "

Participants say "Yes."- We will proceed the consent information and survey.

"Thank you for your time."

Online Survey:

Good Morning/Afternoon,

My name is Curtis Clemens and I am collecting data for my dissertation research. Your participation will be extremely helpful in moving forward in a developing a new instrument for research, a better understanding of outdoor recreational behavior, and new understanding of local resident perceptions with tourists. The survey will take between 5-10 minutes. No personal identification information will be asked. If you so choose to participate please click on the following anonymous link. If you have any questions or concerns do not hesitate to contact me at 864-643-9981 or Curtis.clemens@okstate.edu.

https://okstatecoe.az1.qualtrics.com/jfe/form/SV_cXYmFvzrRUAjG6h

Appendix D

Oklahoma State University Institutional Review Board

Date:	Monday, July 10, 2017
IRB Application No	ED1776
Proposal Title:	Outdoor recreation conflict/crowding instrument validation

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 7/9/2020

Principal Investigator(s):

Curtis Clemens
2001 N Perkins Rd Q192
Stillwater, OK 74078

Donna Lindenmeier
182 Colvin Center
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1.Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2.Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3.Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4.Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

Appendix E

Online Survey

Default Question Block

Consent.

PARTICIPANT INFORMATION
OKLAHOMA STATE UNIVERSITY

Title: Outdoor Recreation Conflict/Crowding Instrument Reliability

Investigator(s): Curtis Clemens

Purpose: The purpose of the research study is to develop a valid and reliable instrument for measuring outdoor recreational conflict and crowding, and to identify levels of outdoor recreational conflict local residents perceive in relation to tourists utilizing the same recreational resources. You must be 18 years or older to participate.

What to Expect: Participation in this research will involve completion of a survey questionnaire. The questionnaire includes information related to descriptive behavior about your outdoor recreational participation, potential factors of outdoor recreational conflict local residents perceive when interacting with tourists, tolerance towards tourists, and actions taken if there is conflict present, the level a local resident will express their conflict, and demographic information. You are requested to complete the questionnaire once. It should take you approximately 10 minutes to complete.

Risks: There are no risks associated with this project which is expected to be greater than those ordinarily encountered in daily life.

Benefits: There are no direct benefits to you. However, you may gain insight into outdoor recreation behavior and research in the area of outdoor recreation.

Compensation: There is no compensation for participation in the study

Your Rights and Confidentiality: Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this research at any time.

Confidentiality: No personal identification information will be collected during this survey.
The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored on a password-protected computer in a locked office, and only researchers and individuals responsible for research oversight will have access to the records. Data will be destroyed no later than three years after the study has been completed.

Contacts: You may contact any of the researchers at the following addresses and phone numbers, should you desire to discuss your participation in the study and/or request information about the results of the study: Curtis Clemens, Colvin Recreation Center 180, Dept. of SAHEP Oklahoma State University, Stillwater, OK 74078, 864 -643-9981. If you have questions about your rights as a research volunteer, you may contact the IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu

If you choose to participate: Please, click NEXT/arrow if you choose to participate. By clicking NEXT/arrow, you are indicating that you freely and voluntarily and agree to participate in this study, and you also acknowledge that you are at least 18 years of age.

It is recommended that you print a copy of this consent page for your records before you begin the study by clicking below.

Appendix F

Outdoor Recreation Validity

Instructions Thank you for agreeing to serve as a member of the Panel of Experts for this research. The purpose of this research study is to create a valid instrument to better understand the Outdoor Recreational Conflict between user group experiences. For example, if a backpacker on a trail experiences undue stress due to the presence of mountain bikers. For the purpose of creating a valid instrument, the terms used will include Group X to indicate a potential conflicting user group, and Outdoor Recreation Location to indicate a specific location in which the data collection might take place. Once the instrument is validated through the work with the Panel of Experts, the reliability will be conducted with the specific activities of: Hiking, Mountain Biking, Fly Fishing, and Horseback Riding. Future data collection will be conducted to determine the reliability of other specific activities. As a member of the Panel of Experts, you are requested to review each question and respond with one of the following options: 1) Essential, 2) Useful, but not essential, or 3) Not necessary. There will also be a place to comment on each question. This comment area will be a place to ask questions, make notations or wording change suggestions, or provide clarification of your thoughts on the question. When reviewing each question, consider if this question would be useful in trying to determine if there might be Outdoor Recreational Conflict between different user groups, and if so to what degree. Also, consider if the question appears that it would be appropriate if used in a variety of outdoor recreation locations. At the end of the instrument, there is a place for additional and overall comments. Please include any thoughts about the potential predictive level of conflict that the instrument might have, additional questions that should be included, and additional instructions that might need to be included. The instrument is divided into seven sections, including: 1) Exploratory/Descriptives = activity participation levels 2) Individual Perceived Conflict = level of problem due to another user group activity 3) Individual Tolerance = ability to overcome conflict 4) Individual behavior related outdoor recreational conflict5) Individual expressing outdoor recreational conflict 6) Demographics = general information about respondent 7) Questions for the Expert panel to assess the overall instrument Please respond no later than June 13. Once responses are received, adjustments will be made, and the instrument will be redistributed for the Panel of Experts to review. This process will continue until there is consensus that each question in the final instrument is essential. Thank you again for your willingness to serve.

Name Expert Panel Name: (Note: Name will not be asked of the survey participants)

Q1_1a On average, during the months of December, January, and February, how many days per month do you participate in outdoor recreational activities at ***Outdoor Recreational Location***

- ○ 0
- ○ 1-3
- ○ 4-6
- ○ 7-9
- ○ 10+

Q1_1b Expert Panel Response to Question Q1_1a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_1c Expert Panel Comments to Question Q1_1a

Q1_2a On average, during the months of March, April, and May, how many days per month do you participate in outdoor recreational activities at ***Outdoor Recreational Location***

- ○ 0
- ○ 1-3
- ○ 4-6
- ○ 7-9
- ○ 10+

Q1_2b Expert Panel Response to Question Q1_2a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_2c Expert Panel Comments to Question Q1_2a

Q1_3a On average, during the months of June, July, and August how many days per month do you participate in outdoor recreational activities at ***Outdoor Recreational Location***

- ○ 0
- ○ 1-3
- ○ 4-6
- ○ 7-9
- ○ 10+

Q1_3b Expert Panel Response to Question Q1_3a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_3c Expert Panel Comments to Question Q1_3a

Q1_4a On average, during the months of September, October, and November, how many days per month do you participate in outdoor recreational activities at ***Outdoor Recreational Location***

- ○ 0
- ○ 1-3
- ○ 4-6
- ○ 7-9
- ○ 10+

Q1_4b Expert Panel Response to Question Q1_4a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_4c Expert Panel Comments to Question Q1_4a

Q1_5a On average, during the months of December, January, and February, how many days per month do you participate in the following activities?

	Not Applicable	1-3	4-6	7-9	10+
Hiking	○	○	○	○	○
Mountain Biking	○	○	○	○	○
Fly Fishing	○	○	○	○	○
Horseback Riding	○	○	○	○	○

Q1_5b Expert Panel Response to Question Q1_5a

- ○ Necessary
- ○ Useful, but not essential
- ○ Not necessary

Q1_5c Expert Panel Comments to Question Q1_5a

Q1_6a On average, during the months of March, April, and May, how many days per month do you participate in the following activities?

	Not Applicable	1-3	4-6	7-9	10+
Hiking	○	○	○	○	○
Mountain Biking	○	○	○	○	○
Fly Fishing	○	○	○	○	○
Horseback Riding	○	○	○	○	○

Q1_6b Expert Panel Response to Question Q1_6a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_6c Expert Panel Comments to Question Q1_6a

Q1_7a On average, during the months of June, July, August, how many days per month do you participate in the following activities?

	Not Applicable	1-3	4-6	7-9	10+
Hiking	○	○	○	○	○
Mountain Biking	○	○	○	○	○
Fly Fishing	○	○	○	○	○
Horseback Riding	○	○	○	○	○

Q1_7b Expert Panel Response to Question Q1_7a

- ○ Necessary
- ○ Useful, but not essential
- ○ Not necessary

Q1_7c Expert Panel Comments to Question Q1_7a

Q1_8a On average, during the months of September, October, November, how many days per month do you participate in the following activities?

	Not Applicable	1-3	4-6	7-9	10+
Hiking	○	○	○	○	○
Mountain Biking	○	○	○	○	○
Fly Fishing	○	○	○	○	○
Horseback Riding	○	○	○	○	○

Q1_8b Expert Panel Response to Question Q1_8a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_8c Expert Panel Comments to Question Q1_8a

Q1_9a How would you rate your level of experience in the following activities?

	Not Applicable	Beginner	Intermediate	Advanced	Expert
Hiking	○	○	○	○	○
Mountain Biking	○	○	○	○	○
Fly Fishing	○	○	○	○	○
Horseback Riding	○	○	○	○	○

Instructions Think about your experiences at ***Outdoor Recreational Location*** with ***Group X.*** To what extent are the following conditions a problem at ***Outdoor Recreational Location***? Using a

scale of 1-5 where “1” meaning not a problem and “5” meaning serious problem. Select the number that best reflects your opinion.

Q1_9b Expert Panel Response to Question Q1_9a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q1_9c Expert Panel Comments to Question Q1_9a

Ins1 Expert panel comments on instructions

Q2_1a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X do not follow the rules	○	○	○	○	○

Q2_1b Expert Panel response to question Q2_1a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_1c Expert Panel comments Q2_1a

Q2_2a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X litter	○	○	○	○	○

Q2_2b Expert Panel response to question Q2_2a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_2c Expert Panel comments Q2_2a

Q2_3a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
11. There are too many Group X	○	○	○	○	○

Q2_3b Expert Panel response to question Q2_3a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_3c Expert Panel comments Q2_3a

Q2_4a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X are not friendly	○	○	○	○	○

Q2_4b Expert Panel response to question Q2_4a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_4c Expert Panel comments Q2_4a

Q2_5a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X disrupt wildlife	○	○	○	○	○

Q2_5b Expert Panel response to question Q2_5a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_5c Expert Panel comments Q2_5a

Q2_6a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X are in my way	○	○	○	○	○

Q2_6b Expert Panel response to question Q2_6a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_6c Expert Panel comments Q2_6a

Q2_7a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X behave in a discourteous and rude manner	○	○	○	○	○

Q2_7b Expert Panel response to question Q2_7a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_7c Expert Panel comments Q2_7a

Q2_8a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X intentionally vandalize the natural setting	○	○	○	○	○

Q2_8b Expert Panel response to question Q2_8a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_8c Expert Panel comments Q2_8a

Q2_9a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X block/disrupt the natural views	○	○	○	○	○

Q2_9b Expert Panel response to question Q2_9a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_9c Expert Panel comments Q2_9a

Q2_10a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X fail to be aware of others around them	○	○	○	○	○

Q2_10b Expert Panel response to question Q2_10a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_10c Expert Panel comments Q2_10a

Q2_11a .

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X unintentionally damage the natural setting	○	○	○	○	○

Q2_11b Expert Panel response to question Q2_11a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_11c
Expert Panel response to question Q2_11a

Q2_12a Survey Question

	1 - Not a problem	2	3	4	5 - Serious Problem
Group X are too noisy	○	○	○	○	○

Q2_12b Expert Panel response to question Q2_12a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_12c Expert Panel comments Q2_12a

Q2_13a Survey Question

	1 - Not a problem	2	3	4	5 - Serious problem
Group X are unsafe	○	○	○	○	○

Q2_13b Expert Panel response to question Q2_13a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_13c Expert Panel comments Q2_13a

Q2_14a Survey question

	1 - Not a problem	2	3	4	5 - Serious problem
Group X do not pick up after themselves	○	○	○	○	○

Q2_14b Expert Panel response to question Q2_14a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_14c Expert Panel comments Q2_14a

Q2_15a Survey question

	1 - Not a problem	2	3	4	5 - Serious problem
Group X block entrances and exits	○	○	○	○	○

Q2_15b Expert Panel response to question Q2_15a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q2_15c Expert Panel comments Q2_15a

Instructions Think about your experiences at ***Outdoor Recreational Location*** with ***Group X***. To what extent do you agree with the following statements? Using a scale of 1 = "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," and 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.

Ins2 Expert Panel comments on instructions

Q3_1a Survey question

	1	2	3	4	5
Group X reduce my enjoyment of Outdoor Recreation Location	○	○	○	○	○

3-1b Expert Panel response question Q3_1a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

3-1c Expert Panel comments to question Q3_1a

Q3_2a Survey Question

	1	2	3	4	5
Group X cause me to feel crowded at Outdoor Recreational Location	○	○	○	○	○

Q3_2b Expert Panel response to question Q3_2a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q3_2c Expert Panel comments to question Q3_2a

Q3_3a ***Group X*** bother me at ***Outdoor Recreation Location***

	1	2	3	4	5
Group X bother me at Outdoor Recreation Location	○	○	○	○	○

Q3_3b Expert Panel response to question Q3_3a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q3_3c Expert Panel comments to question Q3_3a

Q3_4a Survey Question

	1	2	3	4	5
Group X make me feel unsafe at Outdoor Recreation Location	○	○	○	○	○

Q3_4b Expert Panel response to question Q3_4a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q3_4c Expert Panel comments to question Q3_4a

Q3_5a Survey question

	1	2	3	4	5
I do not want to interact with Group X while at Outdoor Recreation Location	○	○	○	○	○

Q3_5b Expert Panel response to question Q3_5a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q3_5c Expert Panel comments to question Q3_5a

Instructions Think about your experiences at ***Outdoor Recreational Location*** with ***Group X***. To what extent do you agree with the following statements? Using a scale of 1 = "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," and 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.

Ins3 Expert Panel comments on instructions

Q4_1a Survey question

	1	2	3	4	5
I would recreate at Outdoor Recreation Location more often if there were fewer Group X	○	○	○	○	○

Q4_1b Expert Panel response to question Q4_1a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q4_1c Expert Panel comments to question Q4_1a

Q4_2a Survey question

	1	2	3	4	5
I will go to Outdoor Recreation Location at a different time when I think there will be fewer Group X	○	○	○	○	○

Q4_2b Expert Panel response to question Q4_2a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q4_2c Expert Panel comments to question Q4_2a

Q4_3a Survey Question

	1	2	3	4	5
I will still continue to do my Outdoor Recreational Activity even if there are a lot of Group X	○	○	○	○	○

Q4_3b Expert Panel response to question Q4_3a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q4_3c Expert Panel comments to question Q4-3a

Q4_4a Survey question

	1	2	3	4	5
I avoid Outdoor Recreation Location if I think there will be a lot of Group X1	○	○	○	○	○

Q4_4b Expert Panel response to question Q4_4a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q4_4c Expert Panel comments to question Q4_4a

Q4_5a Survey question

	1	2	3	4	5
When arriving at Outdoor Recreation Location, if there are too many Group X I will stay but change my planned activity	○	○	○	○	○

Q4_5b Expert Panel response to question Q4_5a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q4_5c Expert Panel comments to question Q4_5a

Instruction Think about your experiences at ***Outdoor Recreational Location*** with ***Group X***. To what extent do you agree with the following statements? Using a scale of 1 = "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," and 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.

Ins5 Expert Panel comments on instruction

Q5_1a Survey Question

	1	2	3	4	5
If I change my plans (timing or activity) because I think there are too many Group X, I would say something to Outdoor Recreation Location management	○	○	○	○	○

Q5_1b Expert Panel response to question Q5_1a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q5_1c Expert Panel comments on question Q5_1a

Q5_2a Survey Question

	1	2	3	4	5
If I see a Group X doing something that I think is inappropriate, I would say something to the Group X	○	○	○	○	○

Q5_2b Expert Panel response to question Q5_2a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q5_2c Expert Panel comments on question Q5_2a

Q5_3a Survey Question

	1	2	3	4	5
If I see a Group X doing something that I think is inappropriate, I would report it to Outdoor Recreation Location management	○	○	○	○	○

Q5_3b Expert Panel response to question Q5_3a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q5_3c Expert Panel comments on question Q5_3a

Q5_4a Survey Question

	1	2	3	4	5
If I see a Group X doing something that I think is inappropriate, I would mention it to other groups or individuals	○	○	○	○	○

Q5_4b Expert Panel response to question Q5_4a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q5_4c Expert Panel comments on question Q5_4a

Q5_5a Survey Question

	1	2	3	4	5
If I think there are too many Group X at Outdoor Recreation Location I would say something to Outdoor Recreation Location management	○	○	○	○	○

Q5_5b Expert Panel response to question Q5_5a

- ○ Essential
- ○ Useful, but not essential
- ○ Not necessary

Q5_5c Expert Panel comments on question Q5_5a

Instructions Please respond to the following demographic statements.

Q6_1 Age

- ○ 18-29
- ○ 30-45
- ○ 45-65
- ○ 65+

Q6_2 Gender/Sex

- ○ Male
- ○ Female

Q6_3 Ethnicity/Race

- ○ White/Caucasian
- ○ African American/Black
- ○ Hispanic/Latin
- ○ Native American/Alaskan Native/Pacific Islander
- ○ Asian/Asian American
- ○ Middle Eastern/Middle Eastern American
- ○ Other

Q6_4 Zip code of residence

Q6_5 How long have you lived at your current Zip code

- ○ Less than 1 year
- ○ 1-5 years
- ○ 6-10 years
- ○ 10-15 years
- ○ More than 15 years

Q6_6 What is your highest level of education completed

- ○ Less than high school
- ○ High school graduate or GED
- ○ Some college
- ○ 2 year degree or Associates
- ○ 4 year degree or Bachelors
- ○ Professional or Masters
- ○ Doctorate

Com Comments on Demographics

Q7_1 How harmful "physically and/or psychologically" do you think this instrument could be towards the participants taking this survey.

- ○ Minimal to zero harm
- ○ Some harm
- ○ Excessive harm

Q7_2 Expert Panel overall comments about the survey

Appendix G

Outdoor Recreational Conflict/Crowding Survey

On average, during the months of December, January, and February, how many days per month do you participate in outdoor recreational activities at DuPont State Forest?

	0 Days	1-3	4-6	7-9	10+
Days Participated	0	1	2	3	4

On average, during the months of March, April, and May, how many days per month do you participate in outdoor recreational activities at DuPont State Forest?

	0 Days	1-3	4-6	7-9	10+
Days Participated	0	1	2	3	4

On average, during the months of June, July, and August, how many days per month do you participate in outdoor recreational activities at DuPont State Forest?

	0 Days	1-3	4-6	7-9	10+
Days Participated	0	1	2	3	4

On average, during the months of September, October, November, how many days per month do you participate in outdoor recreational activities at DuPont State Forest?

	0 Days	1-3	4-6	7-9	10+
Days Participated	0	1	2	3	4

On average, during the months of December, January, and February, how many days per month do you participate in following activities?

	Not Applicable	0 Days	1-3	4-6	7-9	10+
Hiking	NA	0	1	2	3	4
Horseback Riding	NA	0	1	2	3	4
Mountain Biking	NA	0	1	2	3	4
Fly Fishing	NA	0	1	2	3	4

On average, during the months of March, April, and May, how many days per month do you participate in following activities?

	Not Applicable	0 Days	1-3	4-6	7-9	10+
Hiking	NA	0	1	2	3	4
Horseback Riding	NA	0	1	2	3	4
Mountain Biking	NA	0	1	2	3	4
Fly Fishing	NA	0	1	2	3	4

On average, during the months of June, July, and August, how many days per month do you participate in following activities?

	Not Applicable	0 Days	1-3	4-6	7-9	10+
Hiking	NA	0	1	2	3	4
Horseback Riding	NA	0	1	2	3	4
Mountain Biking	NA	0	1	2	3	4
Fly Fishing	NA	0	1	2	3	4

On average, during the months of September, October, and November, how many days per month do you participate in following activities?

	Not Applicable	0 Days	1-3	4-6	7-9	10+
Hiking	NA	0	1	2	3	4
Horseback Riding	NA	0	1	2	3	4
Mountain Biking	NA	0	1	2	3	4
Fly Fishing	NA	0	1	2	3	4

How would you rate your level of experience in the following activities?

	Not Applicable	Beginner	Intermediate	Advanced	Expert
Hiking	N/A	1	2	3	4
Horseback Riding	N/A	1	2	3	4
Mountain Biking	N/A	1	2	3	4
Fly Fishing	N/A	1	2	3	4

Think about your experiences at DuPont State Forest with tourists. To what extent are the following conditions a problem at DuPont State Forest? Using a scale of 1 (not a problem) to 5 (serious problem) circle the number that best reflects how your opinion.	**Scale**				
	Not a Problem	→			**Serious Problem**
Tourists do not follow the written rules of the DuPont State Forest.	1	2	3	4	5
Tourists litter.	1	2	3	4	5
There are too many tourists.	1	2	3	4	5
Tourists are not friendly.	1	2	3	4	5
Tourists disrupt wildlife.	1	2	3	4	5
Tourists are in my way.	1	2	3	4	5
Tourists behave in a discourteous and rude manner.	1	2	3	4	5
Tourists intentionally vandalize natural environment.	1	2	3	4	5
Tourists block/disrupt my natural views.	1	2	3	4	5
Tourists fail to be aware of others around them.	1	2	3	4	5
Tourists unintentionally damage the natural setting.	1	2	3	4	5
Tourists are too noisy.	1	2	3	4	5
Tourists are unsafe.	1	2	3	4	5
Tourists do not pick up after themselves.	1	2	3	4	5
Tourists block entrances and exits.	1	2	3	4	5
Tourists do not follow the common unwritten rules of DuPont State Forest.	1	2	3	4	5

Think about your experiences at DuPont State Forest with tourists. To what extent do you agree with the following statements? Using a scale of 1= "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.	Scale				
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Tourists' presences reduce my enjoyment of DuPont State Forest.	1	2	3	4	5
Tourists cause me to feel crowded at DuPont State Forest.	1	2	3	4	5
Tourist bother me at DuPont State Forest.	1	2	3	4	5
Tourist make feel unsafe at DuPont State Forest.	1	2	3	4	5
I do not want to interact with tourists while at DuPont State Forest.	1	2	3	4	5

Think about your experiences at DuPont State Forest with tourists. To what extent do you agree with the following statements? Using a scale of 1= "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.	Scale				
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would recreate at DuPont State Forest more often if there were fewer tourists.	1	2	3	4	5
I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.	1	2	3	4	5
I will still continue to do my planned Hiking/Mtn Biking/Horseback riding /Fishing even if there are a lot of tourists present.	1	2	3	4	5
I avoid DuPont State Forest if I know there will be a lot of tourists.	1	2	3	4	5
When arriving at DuPont State Forest, if there are too many tourists I will stay but change my planned activity.	1	2	3	4	5

Think about your experiences at DuPont State Forest with tourists. To what extent do you agree with the following statements? Using a scale of 1= "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.	**Scale**				
	Strongly disagree	**Somewhat disagree**	**Neither agree nor disagree**	**Somewhat agree**	**Strongly agree**
If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.	1	2	3	4	5
If I see a tourist doing something that I think is inappropriate, I would say something to the tourist.	1	2	3	4	5
If I see a tourist doing something I think is inappropriate, I would report it to DuPont State Forest management.	1	2	3	4	5
If I see a tourist doing something that I think is inappropriate, I would say something to other groups or individuals.	1	2	3	4	5
If I think there are too many tourists at DuPont State forest I would say something to DuPont State Forest management.	1	2	3	4	5

Please circle Demographic information:

Age:

18-24	25-34	35-44	45-54	55-64	65+

Gender/Sex:

Male	Female	Other	Prefer not to say

Are you of Hispanic/Latin descent?

Yes	No

Ethnicity/Race:

White	American Indian/Alaska Native	Native Hawaiian/Pacific Islander
Black/African American	Asian	Other

Zip code

_____

How long have you lived at your current Zip code?

Less than 1 year	1-5 years	**6**-10 years
10-15 years	More than 15 years	

What is your highest level of education completed?

Less than high school	High school graduate or GED	Some college	2 year degree or Associates
4 year degree or Bachelors	Professional or Masters	Doctorate	

How tall are you?

On average how much time per day do you spend cooking?

On average how much time per day do you spend taking on the phone?

Appendix H

First subscale correlation, coefficient alpha, and coefficient Alpha if the statement is removed

Perceived Behavior	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	α if deleted	Alpha
1. Tourists do not follow the rules of the DuPont State Forest.	1.0																.956	.959
2. Tourist litter.	.75	1.0															.956	
3. There are too many tourists.	.50	.57	1.0														.957	
4. Tourists are not friendly.	.62	.61	.51	1.0													.957	
5. Tourists disrupt wildlife.	.62	.60	.54	.66	1.0												.956	
6. Tourists are in my way.	.37	.45	.70	.56	.45	1.0											.958	
7. Tourists behave in a discourteous and rude manner.	.66	.61	.54	.74	.62	.61	1.0										.955	
8. Tourists intentionally vandalize the natural environment.	.60	.56	.35	.54	.54	.40	.61	1.0									.958	
9. Tourists block/disrupt my natural views.	.53	.55	.61	.57	.55	.74	.68	.60	1.0								.956	
10. Tourist fail to be aware others around them.	.66	.59	.61	.64	.59	.61	.72	.54	.65	1.0							.955	
11. Tourists unintentionally damage the natural environment.	.65	.58	.57	.45	.59	.38	.53	.51	.51	.61	1.0						.957	
12. Tourists are too noisy.	.57	.63	.70	.67	.71	.57	.63	.49	.63	.60	.54	1.0					.956	
13. Tourist are unsafe.	.62	.50	.38	.56	.50	.39	.62	.60	.50	.60	.49	.54	1.0				.958	
14. Tourists do not pick up after themselves.	.72	.82	.63	.62	.67	.50	.68	.64	.61	.67	.70	.65	.57	1.0			.955	
15. Tourists block entrances and exits.	.66	.56	.63	.56	.62	.50	.67	.49	.61	.69	.59	.62	.51	.65	1.0		.956	
16. Tourists do not follow the common unwritten of DuPont State Forest	.79	.71	.60	.59	.66	.50	.66	.60	.64	.71	.69	.66	.57	.77	.69	1.0	.955	

Appendix I

Outdoor Recreational Conflict/Crowding Survey

Think about your experiences at DuPont State Forest with tourists. To what extent are the following conditions a problem at DuPont State Forest? Using a scale of 1 (not a problem) to 5 (serious problem) circle the number that best reflects how your opinion.	Scale				
	Not a Problem				Serious Problem
1. Tourists do not follow the written rules of the DuPont State Forest.	1	2	3	4	5
2. Tourists litter.	1	2	3	4	5
3. There are too many tourists.	1	2	3	4	5
4. Tourists are not friendly.	1	2	3	4	5
5. Tourists disrupt wildlife.	1	2	3	4	5
6. Tourists are in my way.	1	2	3	4	5
7. Tourists behave in a discourteous and rude manner.	1	2	3	4	5
8. Tourists intentionally vandalize natural environment.	1	2	3	4	5
9. Tourists block/disrupt my natural views.	1	2	3	4	5
10. Tourists fail to be aware of others around them.	1	2	3	4	5
11. Tourists unintentionally damage the natural environment.	1	2	3	4	5
12. Tourists are too noisy.	1	2	3	4	5
13. Tourists are unsafe.	1	2	3	4	5
14. Tourists do not pick up after themselves.	1	2	3	4	5
15. Tourists block entrances and exits.	1	2	3	4	5
16. Tourists do not follow the common unwritten rules of DuPont State Forest.	1	2	3	4	5

Think about your experiences at DuPont State Forest with tourists. To what extent do you agree with the following statements? Using a scale of 1= "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.	Scale				
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
17. Tourist's presences reduce my enjoyment of DuPont State Forest.	1	2	3	4	5
18. Tourists cause me to feel crowded at DuPont State Forest.	1	2	3	4	5
19. I would recreate at DuPont State Forest more often if there were fewer tourists.	1	2	3	4	5
20. I choose to go to DuPont State Forest at a time when I think there will be fewer tourists.	1	2	3	4	5
21. I avoid DuPont State Forest if I know there will be a lot of tourists.	1	2	3	4	5
Think about your experiences at DuPont State Forest with tourists. To what extent do you agree with the following statements? Using a scale of 1= "Strongly disagree," 2 = "Somewhat disagree," 3 = "Neither agree nor disagree," 4 = "Somewhat agree," 5 = "Strongly agree," select the response that best describes the level you agree with the following statements.	**Scale**				
	Strongly disagree	**Somewhat disagree**	**Neither agree nor disagree**	**Somewhat agree**	**Strongly agree**
22. Tourist bother me at DuPont State Forest.	1	2	3	4	5
23. Tourist make feel unsafe at DuPont State Forest.	1	2	3	4	5
24. I do not want to interact with tourists while at DuPont State Forest.	1	2	3	4	5
25. If I change my plans (timing or activity) because I think there are too many tourists I would say something to the DuPont State Forest management.	1	2	3	4	5
26. If I think there are too many tourists at DuPont State forest I would say something to DuPont State Forest management.	1	2	3	4	5

VITA

Curtis Clemens

Candidate for the Degree of

Doctor of Philosophy

Thesis: LOCAL RESIDENTS OUTDOOR RECREATIONAL CONFLICT: AN INSTRUMENT DEVELOPMENT

Major Field: Leisure Studies

Education:

Completed the requirements for the Doctor of Philosophy in Health, Leisure and Human Performance at Oklahoma State University, Stillwater, Oklahoma in December, 2017.

Completed the requirements for the Master of Education in Divergent Learning at Columbia College, Columbia, SC in 2007.

Completed the requirements for the Bachelor of Science in Recreation and Leisure Studies at Winona State University, Winona, MN in 2002.

Experience:

- Graduate Assistant 08/2014-Present Oklahoma State University
- Challenge Course Installer/Facilitator 06/2013-Present (contract) Vertical Engineering
- Canopy Tour Installer 06/2013 (contract) Geronimo Construction
- Assistant Director of Adventure Based Programming 03/2008-09/2011 Clemson University Youth Learning Institute
- Academic Enrichment Coordinator 08/2007-03/2008 SCDJJ
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