

AN EVALUATION OF BECOMING AN OUTDOORS-WOMAN (BOW) PROGRAM  
EFFECTIVENESS

A Thesis

by

HILARY H. WELCH

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of  
MASTER OF SCIENCE

December 2004

Major Subject: Wildlife and Fisheries Sciences

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## ABSTRACT

An Evaluation of Becoming an Outdoors-Woman (BOW) Program Effectiveness.

(December 2004)

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The Texas Parks and Wildlife Department (TPWD) offers over 25 different outdoor recreational and outreach educational programs that target different audiences and utilize different types of delivery systems. This study was an evaluation of an educational program called Becoming an Outdoors-Woman (BOW). The evaluation produced a measurement instrument that evaluated program effectiveness and tested the instrument on past participants.

The questionnaire determined respondents': (1) history of program participation, (2) knowledge of TPWD's mission and purpose, (3) level of involvement in selected outdoor recreational activities before and after program participation, (4) knowledge of basic outdoor recreational regulations and behaviors, (5) level of compliance with a variety of outdoor recreational behaviors, (6) attitudinal position on opposing statements on outdoor recreational ethics or behaviors, and (7) demographic characteristics.

The two groups surveyed were all participants of BOW between 1993 and 1998 ( $n = 1,240$ ) and the control group ( $n = 61$ ) made of women who had signed up for the program but had not yet attended. Sampling error for the participants was high, but met the statistically acceptable range of repeatable results at  $\pm 3\%$ . The only demographic difference ( $P \leq 0.05$ ) between groups was age, i.e., BOW participants were older ( $\chi^2 = 46.3$ ) than the control group ( $\chi^2 = 40.8$ ).

Chi-square tests showed differences in awareness of the missions and goals of TPWD. GLM tests detected no differences ( $P \leq 0.05$ ) between the participants and the control group in general outdoor knowledge, behavior given various outdoor recreational scenarios and ethical positions on dichotomous statements. However, there were differences between groups on some items within each of those categories. On those items the  $r^2$  value ( $\leq 0.02$ ) showed that the difference found between groups had little to do with program participation. Respondents' comments focused on the BOW program, the questionnaire, and TPWD.

Study findings are discussed in the context of the program evaluation process. Several recommendations for future program evaluations and concluding remarks are included in this thesis.

## ACKNOWLEDGMENTS

I would like to express a sincere thank you to my committee chairman, Dr. Clark E. Adams and committee members, Dr. R. Douglas Slack and Dr. David Scott for their direction, patience, and perseverance. One sentence of appreciation and praise does not come close to covering it. Then again, neither would a book.

Thank you also to Larry Hysmith, Denise Harmel-Garza, Steve Hall, and Dr. Clark E. Adams for through the experience and recommendations provided by them, I have been able to do much.

Lastly but not least, I wish to thank Dirk, Susan, Joby, and Sarah for their unconditional support and love. It has meant more than they can imagine. God has provided much through them, and, for that, I am grateful.

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## INTRODUCTION

Many state natural resource agencies offer outreach educational programs to constituents from grade-school through adulthood. However, few have developed evaluation tools that measure the outcomes of participation in their programs.

This study evaluated the effectiveness of the Texas Parks and Wildlife Department (TPWD) education program called Becoming an Outdoors Woman (BOW). BOW programs are trademarked and offered internationally with a head office at the University of Wisconsin – Stephens Point. Participating state agencies, such as TPWD, have memorandums of understanding with the head office of the International BOW program enabling the agencies to hold BOW programs in their state. The underlying goal of the International BOW program is to supply women over the age of eighteen with a chance to get involved in a range of outdoor recreational activities such as kayaking, angling, and skeet shooting (Lueck and Thomas 1997). The all-female participant format of the BOW program allows women to take four classes over a weekend associated with angling, hunting, or non-consumptive activities that they might not have been previously exposed or felt comfortable pursuing.

## CONSTRAINTS AND MOTIVATIONS FOR LEISURE

Historically, women have been an underrepresented and underutilized segment of the possible outdoor recreation public. Outdoor program developers and researchers assumed that women's leisure mirrored that of their male counterparts. Contrary to this belief, leisure and gender research has found that there are many differences in leisure between the sexes including their constraints to leisure and motivations for leisure (Henderson and Dialeschki 1991, Caldwell and Baldwin 2004). Not only do women view leisure differently than men, some constraints

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This thesis follows the style of the Wildlife Society Bulletin.

have more impact on women than men. Examples of some of the most common constraints for women are: fear of physical violence in the outdoors, lack of entitlement to leisure, less desire for leisure, higher emphasis on others versus self, lack of opportunity for leisure, fear of fitting in, and lack of training (Ewerts 1988, Henderson 1990, Henderson and Dialeschki 1991, Jackson and Henderson 1995). There has been a focus of research into these constraints over the past fifteen years.

According to Bialeschki (2004) the fear of rape or physical violence is one of the strongest leisure constraints for women. Women's fear of physical violence is due to outdoor space being represented as being male dominated in combination with the prominent belief that women are physically vulnerable to men (Bialeschki 2004).

Henderson (1990) stated that women have less time and less desire to participate in some outdoor recreational activities than men due to societal roles. Wearing (1991) stated that men are prepared in adolescence for being competitive and aggressive for later career success. In contrast, women are prepared in adolescence for the roles of nurturer, caregiver, mother, and helpmate (Wearing 1991). Leaman and Carrington (1985) suggested that in our culture, girls are prepared for social and familial roles which channel them into caring for their family's interests and welfare before their own. These societal roles develop into a feeling of a lack of entitlement for leisure by women (Henderson and Dialeschki 1991). Women find even less time and desire for leisure as their roles in the family expand, i.e. motherhood (Grovaerts 1985 and Woodward and Green 1988). Some feminists view women's leisure as subordination of women, and an area of resistance to dominant ideologies and discourses (Wearing 1991).

Another constraint women face is the lack of access or opportunity to participate in some outdoor activities. According to Caldwell and Baldwin (In press), females have less of an opportunity for, practice in, and experience in participating in some leisure pursuits. Women

tend to be less involved in outdoor recreational activities when compared to men as well as are underrepresented in park attendance and hunting (Scott and Munson 1994, Adams and Steen 1997). Typically, an adult's participation in an outdoor activity is strongly influenced by cultural participation patterns and is centered around those activities engaged in while a youth. O'Leary, et al. (1987) found that adults were unlikely to hunt if they were not introduced to hunting as a child. Ewerts (1988) found that women were more fearful of outdoor recreation than men because of lack of training, fear of low ability, and/or fear of not fitting in.

Regardless of the constraints, motivation is an important factor in how an individual responds to the constraints (Mannell and Loucks-Atkinson In press). Motivators are the factors which encourage individuals to navigate constraints leading towards leisure participation (Jackson et al. 1993). Deem (1986, p.149) suggested motivators for women tend to be companionship, cooperation, the desire to include others, and the focus on the creative and aesthetic aspects of life. Mannell and Loucks-Atkinson (In press), suggest that many of the factors that assist with negotiating constraints are utilized regardless of whether or not constraints are encountered. Furthermore, a stronger motivation will result in higher levels of leisure participation (Mannell and Loucks-Atkinson In press). Jackson, et al. (1993) suggested that navigating constraints can result in an individual's enhanced participation in an activity.

#### BOW BACKGROUND

In 1990, a workshop was held at the College of Natural Resources at the University of Wisconsin Stevens Point to discuss women's barriers to outdoor recreation and ways to overcome them. The workshop was titled, "Breaking Down the Barriers to the Participation of Women in Angling and Hunting" (Thomas and Peterson 1993). Twenty-one constraints to outdoor recreation were identified, 14 of which were in some way related to the lack of outdoor education opportunities available to women (Ensign 1999). One outcome of the workshop was

the development of the BOW program which started in 1991 (Lueck and Thomas 1997). This program was designed to have the participants' weekend split into equal portions of hunting, angling, and non-consumptive related activities, e.g. skeet shooting, fly fishing, and kayaking, respectively (Thomas, Peterson, and Lueck 1993). The weekend format encourages women to be involved in the outdoors, by offering the opportunity to participate in outdoor activities in a setting designed to increase women's motivation and navigation of their constraints.

By its eighth year, 12,000 women in over 100 programs provided by fish and wildlife agencies and organizations in over 44 states and 9 Canadian Provinces participated in the BOW program (Ensign 1999). Texas was 1 of the original 4 states to offer the BOW program (Thomas and Peterson 1993). To date Texas has one of the largest state programs offering 4 to 5 workshops a year. In 1999, the Texas BOW budget was \$100,000 with 1 full-time and 1 half-time employee. By June of 1999, 1,429 women had been through the Texas BOW program.

The BOW program starts on a Friday afternoon and ends on Sunday mid-day to make it easier for working women to attend. A wide variety of course topics are offered to interest and involve a variety of women. One goal of the Texas BOW program is that the participants will be introduced to outdoor activities in a well-balanced manner in a non-threatening, all female participant environment. The goal of the Texas BOW program is that BOW participants will have increased levels of participation with pro-wildlife ethics and values regarding outdoor recreation. Furthermore, participants will become more informed and knowledgeable outdoor recreationists that know about TPWD's mission and purpose as a state agency responsible for the management of all wildlife in Texas. Some questionnaire respondents commented that the BOW programs helped them go beyond the outdoor activities learned in that they tried new things which increased their self esteem. In 1996, the Texas BOW program expanded to allow past participants to become more involved in activities with other women through the Advanced

BOW programs and the Texas Outdoor Women's Network (TOWN). The Advanced BOW programs offer opportunities for groups of previously trained women to test their skills and knowledge during well-planned trips with instructors. To date, there are 8 TOWN groups which meet in various cities around Texas. Each TOWN group provides women the opportunity to discuss and plan activities, learn more about the outdoors, and to encourage each other in their undertaking of nontraditional activities.

The goals of the Texas BOW program were to produce participants who have knowledge of TPWD's mission and purpose, become active in selected outdoor recreational activities, understand outdoor recreational regulations and behaviors, perform safe and legal outdoor recreational behaviors, and adopt safe and legal outdoor recreational behaviors and ethics. Lueck and Thomas (1997) found that participants in the BOW program had increased their outdoor activity levels and had more positive attitudes toward outdoor activities than the control group, i.e., women who expressed interest in the BOW program but had not yet attended a program. A study of Colorado, New Jersey, and Florida women showed that the women would increase their outdoor activities if they had access to inexpensive programs, equipment, and companions with whom to recreate (Ensign 1999). The requirements suggested in the multi-state study (Ensign 1999) are all provided by the Texas BOW program.

#### PROGRAM EVALUATION

Jacobson (1991) suggested that program evaluations provide accountability in demonstrating program's worth, offer an opportunity for receiving feedback and improving programs, furthers our understanding of the process of program development, and promote conservation education by substantiating claims about its benefits. These evaluation outcomes are important for all education programs, but are imperative for legislatively funded programs in state natural resource agencies, such as the Texas BOW program.

The overall goal of this research project was to measure the effectiveness of the BOW program offered by TPWD. Effectiveness was first determined by assessing BOW program participants' knowledge and attitudes toward natural resource stewardship and recreational ethics, their behavioral changes as a result of program participation, and their degree of awareness of the TPWD's mission and purpose. A second measure of program effectiveness was a comparison of responses by past BOW programs participants with a control group in respect to their knowledge of TPWD, outdoor activity levels, and their knowledge, attitude, and ethics toward natural resource use and stewardship. An example of BOW effectiveness would be for significantly more participants than the control group to know that TPWD enforces Texas hunting, boating and fishing laws. Likewise, participants should have the same pre-participation rates in outdoor activities than the control group as well as significantly higher post-participation rates in the same activities.

#### STUDY HYPOTHESIS

The following hypotheses were developed to test whether BOW program participation had an effect on participants' knowledge of TPWD's mission and purpose, activity levels in selected outdoor recreational activities, understanding of outdoor recreational regulations and behaviors, compliance with safe and legal outdoor recreational behaviors, and performance of safe and legal outdoor recreational behaviors and ethics. The hypotheses were based on the intended goals of the Texas BOW program.

Ha1: AGENCY AWARENESS: Participation in a BOW program gives participants more knowledge about TPWD's mission and purpose, when compared to a control group. BOW program participants should know more about the TPWD's functions and goals through 1 or more of its educational programs offered during the program.

Ha2: ACTIVITY LEVEL: Participation in a BOW program will cause an increase in hunting, fishing, and selected non-consumptive outdoor recreational activities. There should be no differences in pre-program activity levels by participants when compared to a control group.

Ha3: KNOWLEDGE: Participation in a BOW program will give participants a greater knowledge of outdoor recreational regulations and behaviors, when compared to a control group. Classes taught at BOW programs are designed to give women an understanding of the need to perform an outdoor recreational activity safely and within state and federal regulatory guidelines. Participants will more likely have a higher knowledge score on outdoor recreation safety behaviors and regulations, than a control group.

Ha4: BEHAVIOR: Participation in a BOW program will cause participants to demonstrate more compliance with safe and legal outdoor recreational behaviors, when compared to a control group. Classes taught at BOW programs give participants practice in performing outdoor recreational activities safely and within state and federal regulatory guidelines. Participants should select more correct behaviors than a control group when given scenarios they might face while participating in outdoor activities.

Ha5: ETHICS: Participation in a BOW program will give participants a greater understanding of outdoor recreational ethics, when compared to a control group. Classes taught at BOW programs provide information to participants about the ethics of outdoor recreational activities.

## LITERATURE REVIEW

Research into individual's leisure pursuits dates back to the 1960's and remains a relevant research focus today (Jackson and Scott 1999). Understanding the factors that surround people's choice of recreation, or lack thereof, is of utmost importance to those whose livelihoods depend on the leisure decisions of the community. One set of organizations that rely on the public's leisure decisions for their primary revenue source (purchases of hunting and some outdoor equipment) are state game and fish agencies. State game and fish agencies need to ensure that those who are currently purchasing licenses and purchasing equipment continue to do so while encouraging and recruiting non-participants to recreate in the out of doors. According to Jackson (1987), "Many hunter educators and wildlife managers contend, the future of hunting is in the hands of non-hunters, a group that is primarily female." Not being active in outdoor pursuits is not only a gender issue. Walker and Virden (In press) found that those of Hispanic or Black ethnicity are less likely than Whites to perceive the outdoors as a place to safely recreate (U.S. Census Bureau 2002).

Encouraging people to recreate outdoors can have at least 4 positive outcomes for state game and fish agencies. The first is positive relationships with constituents, which includes name recognition. These positive relationships might provide the needed pressure on the state legislature in crucial times. The second outcome of outdoor education is an increase in the number of outdoor participants. More constituents purchasing hunting and fishing licenses along with some outdoor equipment provides funding for the state game and fish agencies. The third outcome of training should include more safe and ethical outdoor constituents. Lastly, outdoor training will also increase constituent's knowledge of state game and fish agencies properties and program offerings. The body of literature on leisure research can provide insights into



constituent's choices and patterns that should influence a state agency's policies and program offerings.

Research has provided some insights concerning how people make their decisions concerning leisure activities. These insights included defining who the non-participants were, constraints to leisure, negotiations of these constraints, facilitation to participation, and suggestions for planning and policy makers. The understanding of the factors involved in leisure activity is the focus of this literature review.

#### NON-PARTICIPANTS IN LEISURE

According to Mannell and Loucks-Atkinson (In press), non-participants are people whose activity levels have either been modified, are less than desired, or are nonexistent. When researching the non-participants of outdoor activities, a correlation to their age, gender, ethnicity, income, and other factors come to light. Scott and Munson (1994) found that the non-users of local and regional parks tend to be older, female, minority group members, with lower levels of income and education. Other studies have shown that the non-participants in park attendance and hunting are more likely to be women than men (Scott 1994, Adams and Steen 1997). Furthermore, during certain female's life stages, such as mid-teenage years and early motherhood, women lower their physical or outdoor recreation pursuits (Brown et al. 2001, Archer and McDonald 1990). Jackson et al. (1993) state that non-participants are truly not interested in the activity, are already as involved as they care to be, or they are affected by constraints, i.e. anticipation of the activity negotiation might not be successful.

#### CONSTRAINTS TO LEISURE

To better understand the differences between participant groups it is imperative to evaluate the constraints, also known as barriers, to leisure. Scott (In press) defined constraints to leisure as, "factors that limit people's participation in leisure activities, people's use of leisure

services (e.g. parks and programs), or people's enjoyment of current activities." He also identified five principles stemming from leisure constraints research: (1) constraints influence both participation and preference (2) time commitments are the most frequently cited constraints to leisure involvement (3) constraints vary across activities and different dimensions of leisure (4) constraints vary by population groups and (5) people may negotiate the constraints.

Crawford and Godbey (1987) categorized constraints into three groupings: intrapersonal, interpersonal, and structural (Scott In press, Walker and Virden In press). Intrapersonal constraints are the psychological characteristics that influence the formation of leisure preferences. Examples of intrapersonal constraints are fear, perceived lack of skill, low self-esteem, personal attitudes, and prior experiences. Interpersonal constraints are the social constructs through which an individual forms their leisure preferences. Interpersonal constraints form from interactions with friends, family, and society and can be as simple as impeding work schedules, or not being able to schedule time to recreate with friends. Scott (In press) also indicated that interpersonal constraints may have more or less impact on individual's involvement in different activities. Interpersonal constraints, for example, may have little impact on those activities pursued in close proximity to home. Structural constraints are the limiting factors that influence an individual's activity level after the individual has formed a leisure preference. Structural constraints can come in the form lack of time, lack of funding, and lack of place to recreate.

In 1991, Crawford et al. expanded on their constraints theory by introducing the hierarchical relationship among the different constraints. According to the theory, before a person will participate in an activity they first have to work through intrapersonal constraints (e.g. feeling the "right" to recreate), then interpersonal constraints (e.g. someone with whom to recreate), and finally structural constraints (e.g. finding the time to recreate). However, Scott (In

press) used examples to show that regardless of the perceived weight of each type of constraint, the hierarchical model does not always follow the suggested pattern. For example, a person might not look for activity opportunities due to their lack of transportation (structural constraint) even though they have negotiated intrapersonal and interpersonal constraints. Regardless of the order in which a person encounters different constraints, the constraints themselves do not affect everyone in the same manner. In fact, people do not share all of the same constraints. Mannell and Loucks-Atkinson (In press) even suggested that some constraints to one could actually be a motivator for another. For example, fear of an extreme sport might be a mitigating factor for an introvert to not participate. However, the same fear surrounding an extreme sport might cause the thrill that the extrovert was seeking (Walker and Virden In press).

As mentioned in one of Scott's (In press) constraint principles, the perceived lack of time affects all population groups. There are some theories behind individual's perceived lack of time. It could be due to the competition from other activities, thus leaving people the feeling that there is too much to do with not enough time to do everything. Another reason might be that people feel the need to spend time assimilating overwhelming amounts of information with ideas on topics such as self-improvement, exercise, or family life (Scott, 1993). Godbey (In press) suggested that speeding up the pace of life in our society is a cause of the perceived lack of time for recreation that affects all people.

One constraint that affects females and ethnic groups more so than white males is fear of being assaulted. For females, the fear of sexual assault or murder are prevalent. Females tend to list fear as a main constraint to outdoor activities even if they have not been in assault situations in the past. Some gender researchers feel that this prevalent feeling of fear is actually a form of societal control, i.e. an interpersonal constraint (Bialeschki and Hicks 1999). Bialescki (In press) reported that the perception of outdoor spaces being male dominated as well as the sense of

women being physically vulnerable to men has built the foundation for women to be afraid of the outdoors. Walker and Virden's (In press) suggested that whites are less apprehensive about encounters with dangerous animals than blacks. Furthermore, they suggest that Blacks and Hispanics are more concerned about potential negative encounters with other humans in the outdoors than Whites (U S Census Bureau 2002). Walker and Virden (In press) felt that these fears may stem from mythological stories involving animals or that some people perceive outdoor environments are "not under society's norms or control."

Level of income is another factor that impacts individual's leisure by limiting access and availability of choices. People with lower incomes list lack of transportation, opportunity, information, interest, and finances as constraining factors. However those with higher incomes do not face as many access issues. Instead they list lack of time as their greatest constraints for leisure (Scott In press). Some studies have shown that as one's income increases the affect of one's ethnic background plays less of a role in the choice of activities. Furthermore, an increase in income reduced the amount of constraints to leisure for adolescents regardless of their gender (Raymore 2002).

Another factor impacting leisure is an individual's life stage. Females in their mid-teenage years and again in early motherhood show a decrease in their outdoor activity levels (Caldwell and Baldwin In press,, Brown et al. 2001). In adolescence, low self esteem affects girls more than boys and results in a higher level of perceived constraints for the girls (Caldwell and Baldwin In press). However, an increase in the sense of entitlement to leisure was noted by Shaw and Henderson (In press) in older women whose children have gained maturity and independence. Jackson (1987) suggested that recreation in adult women could enhance their lives through life satisfaction and positively enhance self concept. Both Jackson (1987) and Adams and Steen (1997) found that the women started hunting in their adult years due to the

influence of their spouse or companions. Other studies have shown that with advancing age constraints, such as the lack of someone with whom to recreate, the belief that leisure activities are only for the young, and lack of interest in activities, might increase (Scott In press).

Women's versus men's participation levels in leisure activities has been of interest in gender and constraints research for many years (Shaw and Henderson In press, Walker and Virden In press). However, it has only been the more recent research that has attempted a more complete view of why women (and men) participate. In fact, research has shown that one's gender has an affect on the opportunities, practices, and experiences which all lead to the quantity and quality of leisure (Shaw and Henderson In press, Caldwell and Baldwin In press). Caldwell and Baldwin (In press) stated that the strongest constraint to girls is gender roles which can result in a lack of interest in outdoor recreation. Raymore (2002) pointed out how one's culture dictates whether or not an activity is appropriate for one gender or another. Culture seems to play an important role in that adults were unlikely to hunt if they were not introduced to hunting as a child (O'Leary et al. 1987). Similarly, Adams and Steen's (1997) found that women were mostly involved with hunting when they can participate with family members or companions.

Caldwell and Baldwin (In press) pointed out that men seem to have more opportunities in sports and outdoor recreation activities starting in childhood and more so in adulthood. Although there are sporting leagues for girls, there are fewer choices for them especially as they grow older. Although men might have more opportunities, Shaw and Henderson (In press) found that some men face other recreation issues such as only wanting to participate in activities that make them look masculine. This can be an issue for the men who do not fit the stereotypical male image of being competitive, tough, and heterosexual.

One overarching difference in leisure between men and women is their outlook on leisure. For example, men are more apt to make time for leisure and recreation. In contrast women tend to feel less entitled to leisure, which stems in large part from an “ethic of care.” Women tend to also have less funding and a different idea of leisure than men. The ethic of care is the tendency for women to be more responsible than men for taking care of children and family, including elderly parents. This is not to say that men do not care for their children or their aging parents (Henderson and Dialeschki 1991). Crawford and Huston (1993) showed that, after a new child comes into a family, fathers rely more on the mother’s leisure choice than before the child was born. Although both men and women change their leisure to fit their current lifestyle, women have been shown to choose their leisure pursuits and timing to fit the family (Scott In press). In some cases, women would go on family outings for the primary reason of caring for the family even though the outing was not of interest to them. It seems that women working outside the home feel more empowerment for leisure pursuits than women working in the home. Henderson and Dialeschki (1991) stated that earning money enabled greater leisure desires for working women. However, those working at home felt that they had more leisure than did working women, which may be an attribute of being paid for time at work. All women in Henderson and Dialeschki’s (1991) study showed an “uncertainty about the balance between the woman’s perception of their right to leisure and their relationship with others that also constrained their leisure” since leisure itself was shown as a lower priority.

#### NEGOTIATION OF CONSTRAINTS

Another focus of leisure research is the interactions between the negotiation of individual’s constraints and motivations leading to participation in leisure. Mannell and Loucks-Atkinson (In press) summarized literature suggesting that people, “set participation goals, develop an understanding of the constraints they encounter and their cause, develop and

plan the use of strategies, experiment with their use, and attempt to exert control over their environment and behavior to achieve their leisure goals.” Jackson, Crawford, and Godbey (1993) stated that negotiating constraints involved a process that included initiation and outcome of negotiation and was influenced by the interaction of constraints related to an activity and a person’s motivation for the activity. Raymore (2002) stated that a condition needs to be seen as potentially rewarding before it will be seen as a recreational opportunity. Walker and Virden (In press) suggested that the constraints and motivations are influenced by personal experience.

Henderson, et al. (1995) categorized the negotiation of constraints into three types of responses: reactive, successful proactive, and partly successful proactive. The reactive type of response is when someone stops participating in an activity. In a successful proactive response a person does not change or reduce their participation levels regardless of their constraints. In the partly successful proactive response, a person will participate in an activity in an altered manner. For example a woman changing the time of day, activity partner, or location of a daily run on account of fear of violence would be a partly successful proactive response.

#### MOTIVATIONS FOR LEISURE

Raymore (2002) suggested that facilitators, also known as motivators, are those things that make it easier to recreate, should be included in a study of leisure constraints. Raymore further argued that the negotiation of constraints is not the primary focus of the participation decision. Instead, the person’s expectation for success in coping with the constraints is central to the decision to recreate. While the importance of the success expectation has a direct effect on the type of response a person will have to constraints, other motivators for leisure can be broken into three categories reflective of the constraints model. These three categories are intrapersonal, interpersonal, and structural (Kay and Jackson 1991). As expected, the intrapersonal motivators are personality driven factors. For example, an extrovert is more likely to take in extreme sports

than is an introvert (Walker and Virden In press). Interpersonal motivators are external societal factors such as parental influences in youth activities. Structural motivators are the opportunities provided, such as football camp being available to young males. Jackson, et al. (1993) suggested that after constraints have been negotiated there are three types of participation differences: (1) a person might have changed their schedule to fit the activity (2) the degree of a person's involvement in activity changes, and (3) the level of participation in the activity will decrease. Jackson, et al.(1993) also reported that once a person is involved in an activity, few will stop participating due to constraints. In fact, participation may actually be enhanced due to the negotiation process.

Mannell and Loucks-Atkinson's (In press) gave four suggestions for future leisure research and service delivery. First, keep variable levels consistent between attitudes and behaviors. Second, consider an individual's motivation to participate in different leisure activities. Third, when considering negotiation strategies, include behavior control and self efficacy. Finally, consider the process of negotiation as changing and developing as individual involvement changes.

The first suggestion for program evaluations is to keep the level of variables similar as means of better correlating individual's attitudes and behaviors (Mannell and Loucks-Atkinson, In press). Attitudes are the best predictors of behavior when the breadth of one's attitudes closely matches the breadth of the behavior. For example, to predict if people will attend a program they should be asked if they plan to attend a program within a given amount of time. Those who say they will attend a program within a specific timeframe are more likely to do so than people who simply "approve" of a program. Approval will not necessarily relate to participation.



Second, the amount of importance placed on activity outcomes needs to be considered. The level of importance relates to the amount of motivation or desire a person has to engage in a behavior. Studies by Carroll and Alexandris (1997) and Hubbard and Mannell (2001) showed that higher levels of participation were related to higher amounts of motivation. While both studies showed that higher motivation resulted in higher participation rates, the way in which constraints played in the negotiation varied between the two studies. Carroll and Alexandris (1997) found that high motivation level decreased the amount of perceived constraints. In contrast, Hubbard and Mannell (2001) reported that the level of constraint did not change, but that the high motivation level provided the encouragement to navigate around the constraints. An example of high motivation was highlighted by Stebbins (1999) in which individuals who were highly committed to an activity were most likely to persevere despite hardships and disappointments. Regardless of the role of the constraints, an individual's motivation level is pivotal to their participation in leisure.

The third set of factors that leisure models should consider are behavior control and self efficacy. When people are able to identify and understand their constraints they are better able to negotiate and participate in activities. Furthermore, an individual's confidence in his or her ability to negotiate successfully, coupled with high motivation enables him or her to be more successful while maneuvering around constraints (Mannell and Loucks-Atkinson, In press).

The fourth suggestion that has application to researchers and program coordinators alike is for the constraint-negotiation interaction to be seen as an evolving process. As individuals continue to involve themselves in an activity, their constraints, motivation, and adherence to a leisure activity will change as their stage in the activity evolves. For example, Nadirova and Jackson (2000) found that the factors limiting a person from starting participation in an activity was not necessarily the same reasons as ceasing participation. Scott and Shafer (2001) and

Mannell and Loucks-Atkinson (In press) suggested that as individuals progress in an activity, there are likely to be changes in the factors that constrain continued participation. For example, novices in an activity list lack of information, companions, and equipment as their constraints. Those who are highly active in an outdoor activity are more likely to be impacted by perceived crowding and a lack of appropriate natural areas (Walker and Virden In press).

Some leisure researchers have offered direct advice to those in policy and program coordinating positions for public leisure. Scott (1993) suggested reducing the top constraint for all individuals, perceived lack of time. The first suggestion by Scott (1993) was that state agencies offer reservations for sites and registration for programs should be available together to make it easier for the public to recreate and take full advantage of the state agency's sites. Another of Scott's (1993) suggestions was to provide the public with the typical time allowances for available recreation opportunities available before recreation begins. Thus, the public will know what to expect as well as be able to plan their activities according to their schedule. Scott (1993) also suggested that short and potentially self-directed avenues to leisure be provided to the public. Beside the time constraint, Scott (1993) also pointed out the need for the program providers to resemble the public at large with ethnic background to increase the level of comfort and understanding. Brown, et al. (2001) reported that women have less time and support enabling them to recreate due to motherhood. The implication here is to offer child or elder care when possible. Walker and Virden (In press) suggested using a broad marketing scheme to reach across the various information constraints.

For continued outdoor education program growth, there is a greater need to understand leisure constraints, negotiation strategies, and motivations for participation. It is apparent that men and women of all ages and backgrounds have different constraints and motivations to navigate before they turn from being non-participants into active participants. It should be the

goal of every outdoor activity provider to better understand constraints and facilitate individual's navigation of these factors so they can maximize participation. This is possible through continued research and program development.

## METHODS

A questionnaire was developed to measure program effectiveness in terms of the participants' knowledge of the TPWD's mission and purpose, activity levels in selected outdoor recreational activities, knowledge of outdoor recreational regulations and behaviors, compliance with safe and legal outdoor recreational behaviors, and performance of safe and legal outdoor recreational behaviors. Specific questions were developed by project investigators, collaborators, and selected TPWD personnel associated with the BOW program.

A pre-test of the questionnaire was conducted on 35 randomly selected individuals who were past participants in the angler, boater, hunter and BOW programs and selected populations of Texas A&M University (TAMU) students who represented a quasi control sample.

Pre-test responses were used to determine whether questions should be included, changed, or removed from a revised version of the questionnaire. The revised questionnaire contained those questions that the program participants and the control group either answered differently or in a way that showed that the questions could discriminate between the experimental and control group.

The final questionnaire (Appendix A) was developed into a mark sense form by National Computer Systems in Owatonna, Minnesota. The questionnaire contained items that determined respondents': (1) history of program participation, (2) knowledge of TPWD's mission and purpose, (3) level of involvement in selected outdoor recreational activities before and after program participation, (4) knowledge of basic outdoor recreational regulations and behaviors, (5) level of compliance with a variety of outdoor recreational behaviors, (6) attitudinal position on opposing statements on outdoor recreational ethics or behaviors, and (7) demographic characteristics. The questionnaire was sent to program participants using a modified Salant and Dillman (1994) methodology. The initial mailing of the questionnaire included a cover letter

explaining the purpose of the survey. After an additional two weeks, a thank you/reminder postcard was mailed to each participant. Two weeks later, a final mailing of the questionnaire was sent to those participants who had not yet responded. All past participants in the BOW programs (n = 1,240) were included in this survey. TPWD provided the names and addresses of all BOW program participants from 1993 through 1998. A control group (n = 61), of women surveyed immediately before their first BOW program, were given the same questionnaire as past BOW program participants.

Three different types of data analysis were used to test study hypotheses. The GLM analysis was used to examine the strength of BOW program participation as a predictor of questionnaire response pattern. The Duncan's Multiple Range test of mean scores and Chi-square tested demographic differences between BOW program participants and the control group or their responses to selected questions. Program participants were also compared to the general Texas population using selected demographic variables.

#### ASSIGNING SCORES

**Agency Score.** Program participants were given 11 statements that described the mission and purpose of different state agencies to discern their knowledge of the TPWD's activities, mission, and goals. Eight of the statements pertained to the TPWD (Q2, Appendix A). Agency score was the sum of answers (0 or 1) on Q2A through Q2D and Q2G through Q2J. The scoring pattern consisted of 1 for correct answer and 0 for an incorrect answer.

**Activity Score.** The pre-participation score was the sum of Q3A1 through Q3A6. The post-participation score was the sum of Q3B1 through Q3B6. The score range for pre- and post-participation levels was 0 to 14. The scoring pattern consisted of 0 points for no participation in an activity, 1 point for participating 1 to 5 times a year, and 2 points for a participating more than 5 times a year. The answer frequencies are reported as group score percentages.

**Knowledge Score.** Program participants were given 14 statements relating to regulations or facts about angling, boating, hunting, and general outdoor safety (Q4, Appendix A). The knowledge statements were a mixture of regulations and facts that may have required respondents participation in the Texas Angler, Boater, and Hunter Education programs and the BOW program to answer all of the questions correctly. Respondents could answer that they agree, disagree, or not sure with each statement. Each statement had a correct answer, as determined by TPWD staff or program facilitators. The knowledge score was the sum of Q4A through Q4N with a score range of 0 to 14, with correct answers receiving 1 point and incorrect answers 0 points. Answers of not sure were considered incorrect. The answer frequencies are reported as group score percentages.

**Behavior Score.** Program participants were given 14 statements relating to actions with which they might be faced while angling, boating, hunting, or during other outdoor activities (Q5, Appendix A). Answer choices were ALWAYS, USUALLY, RARELY, or NEVER. Each statement had a correct answer in terms of the ideal condition and responses as determined by the TPWD program leaders' expectations of participants. The score range was 0 to 14, with the correct answer receiving 1 point and all others receiving 0 points. The answer frequencies are reported as group score percentages.

**Attitude Score.** Program participants were given 14 dichotomous viewpoints relating to positions they might take about angling, boating, or hunting (Q6, Appendix A). Respondents could choose from a 1 to 5 scale of agreement between the statements. Each statement had a desired viewpoint in terms of the ideal condition and respondents' positions as determined by the TPWD program leaders' expectations of participants. The score range was 0 to 70, with 1 point being assigned to the answer most strongly agreeing with the statement on the left side of the page. Likewise the answer more strongly agreeing with the left side of the page was given 2

points, the answer of compromise in between statements was given 3 points, and the answer more strongly agreeing with the right side of the page received 4 points. The answer most strongly agreeing with the statement on the right side of the page received 5 points. Mean scores for behavior questions were determined with general linear model statistics.

## RESULTS AND DISCUSSION

### RESPONSE RATE

After 3 mailings, the adjusted (n = 1,214) response rate was 43% (n = 579). Sampling error for the participants was high, but met the statistically acceptable range of repeatable results at +/- 3 % ( $\alpha = 0.05$ ).

### DEMOGRAPHICS OF BOW PROGRAM PARTICIPANTS AND CONTROL GROUP

There were no demographic differences (Tables 1-6) between the groups except for their age. The BOW program participants were older ( $P \leq 0.05$ ) than the control group (average ages = 46.3 and 40.8 respectively). The majority of respondents from both groups were Anglo-American (>92%) with an education of some college or higher (92.4%) and annual incomes ranging from \$50,000 to \$130,000+ (67.2%). Respondents tended to be married (>50%) and lived in communities with over 50,000 individuals (>61%). Of the BOW program participants, the majority (66.9%) had attended 1 BOW program while the rest had repeated the program 1 or more times. The BOW program participants and the control group did not reflect the demographic make-up of the overall Texas female population in terms of age, marital status, race or ethnicity.

Table 1. Chi-square tests (df = 1) of outdoor education program participation by BOW program participants (n = 574) and a control (n = 61) group in Texas in 1999.

Program	% Control	% BOW Participants	$\chi^2$
Angler Education*	0.00	16.16	11.33
Boater Education	3.28	10.04	2.95
Hunter Education*	3.28	22.98	12.81
BOW*	3.28	99.03	508.96

\* =  $P \leq 0.05$



Table 2. Chi-square tests ( $df = 5$ ,  $\chi^2 = 5.72$ ,  $P > 0.05$ ) of race and ethnicity differences between BOW program participants ( $n = 574$ ) and a control ( $n = 61$ ) group in Texas in 1999.

Race/Ethnicity	% Control	% BOW Participants
White	95.10	92.80
Black	0.00	0.58
Other	3.28	0.78
Asian	1.64	3.11
Hispanic	0.00	2.14

Table 3. Chi-square tests ( $df = 5$ ,  $\chi^2 = 8.90$ ,  $P > 0.05$ ) of marital status differences between BOW program participants ( $n = 574$ ) and a control ( $n = 61$ ) group in Texas 1999.

Marital Status	% Control	% BOW Participants
Single	26.67	14.51
Married	51.67	65.57
Divorced	15.00	15.09
Separated	0.00	1.16
Widowed	6.67	3.38

Table 4. Chi-square tests ( $df = 7$ ,  $\chi^2 = 4.52$ ,  $P > 0.05$ ) of residence differences between BOW program participants ( $n = 574$ ) and a control ( $n = 61$ ) group in Texas in 1999.

Residence	% Control	% BOW Participants
Farm or Ranch	1.64	4.67
Open country	4.92	8.37
< 2,500 people	4.92	5.25
2,500 – 10,000	9.84	7.78
10,001 – 50,000	11.48	12.06
50,001 – 250,000	22.95	15.18
250,001 or more	44.26	46.50

Table 5. Chi-square tests ( $df = 8$ ,  $\chi^2 = 6.74$ ,  $P > 0.05$ ) of educational differences between BOW program participants ( $n = 574$ ) and a control ( $n = 61$ ) group in Texas in 1999.

Education Level	% Control	% BOW Participants
None	0.00	0.00
< High School	0.00	0.19
High School or GED	4.92	4.63
Military or Trade	1.64	0.58
Some College	18.03	30.69
College Graduate	49.18	38.22
Masters Degree	21.31	18.92
Doctoral Degree	1.64	1.16
Professional	3.28	4.63

Table 6. Chi-square tests ( $df = 13$ ,  $\chi^2 = 12.29$ ,  $P > 0.05$ ) of income levels of BOW program participants ( $n = 574$ ) compared to a control ( $n = 61$ ) group in Texas in 1999.

Income Level	% Control	% BOW Participants
< 10,000	3.51	0.63
10,000 to 19,999	3.51	3.55
20,000 to 29,999	5.26	7.72
30,000 to 39,999	14.04	10.44
40,000 to 49,999	8.77	10.02
50,000 to 59,999	7.02	11.90
60,000 to 69,999	8.77	8.77
70,000 to 79,999	10.53	9.39
80,000 to 89,999	7.02	7.72
90,000 to 99,999	10.53	4.18
100,000 to 109,999	3.51	6.89
110,000 to 119,999	3.51	3.97
120,000 to 129,999	3.51	2.51
130,000 or more	10.53	12.32

#### NON-RESPONSE FOLLOW UP

A non-response follow up was conducted by phone and personal conversations with repeat participants at a BOW program. Some reasons for a non-response are given below.

(1) The questionnaire was sent too long after the participants took the program. It was difficult for some participants to remember when they participated in the program(s) as well as

information learned during their selected courses. (2) The questionnaire was too difficult for participants to want to continue filling it out. Some questions covered information not specific to the BOW program courses that some respondents attended. Therefore, it was highly possible that a participant would not know many of the answers to the questions asked. Filling out the questionnaire proved to be frustrating to some participants. (3) The questionnaire was offensive to some participants due to the cartoons and wording of some questions. Some felt that the cartoons depicted scenes that were insulting to women in the outdoors. Others felt that the questions were demeaning in that they were expected to know information to which they had not been exposed. (4) Although the questionnaire arrived in an official envelope, many said that they were too busy to open and deal with excess mail.

There was a lack of respondents between 18 and 22 years of age. However, the lack of respondents in this age group has been a common pattern shown in other social research (Scott 1994, Raymore and Scott 1998).

#### Ha1: AGENCY AWARENESS

The BOW program experience did give participants a greater knowledge of TPWD's mission and purpose. The BOW program participants scored higher ( $\chi^2 = 5.4$ ,  $p \leq 0.05$ ) on the group of questions dealing with TPWD's mission and purpose (Table 7) than did the control group ( $\chi^2 = 4.5$ ). GLM tests indicated that little score difference ( $r^2 = 0.009$ ) could be accounted for by program participation. BOW participants that had attended more than one BOW program had significantly greater knowledge ( $\chi^2 = 5.78$ ,  $p \leq 0.05$ ) of TPWD than did the first time BOW attendees ( $\chi^2 = 5.16$ ). Twenty five percent or more of BOW program participants did not know that TPWD: (1) enforced Texas hunting, boating, and fishing laws (2) used Sportfish and Wildlife Restoration funds to support agency programs; produced Wildlife Expo (3) sold hunting and fishing licenses to fund agency programs (4) produced Wildlife Expo, and (5) managed state

cultural and historical sites. However, program participants (> 56%) were more aware than Texas residents (45%) that TPWD was the agency responsible for the management of all wildlife in Texas (Thomas and Adams 1998).

Although many of the participants did not know of the annual TPWD sponsored Expo event, several of the respondents comments did reflect enthusiasm for the event and the agency. For example, one respondent wrote, "Becoming An Outdoors Woman is a great program, and the wildlife expo - what a treat - what would we do without TPWD?" Another respondent comment reflects knowledge that TPWD not only produces the Expo event but also provides the materials for the BOW program, "Becoming an outdoor woman is one of the best programs I have ever participated in. I would go to many more if possible. I think the park and wildlife do a superb job for Texas. "Expo" is a time my grandchildren look forward to each year. I hope more money can be allocated to this great organization!" These comments reflect a positive relationship being built between TPWD and its constituents and that some of the constituents are learning about TPWD programs. Both of these results are underlying premises for TPWD hosting the BOW program being held in Texas.

Table 7. Chi-square tests (df = 1) of agency awareness by BOW program participants (n = 574) and a control (n = 61) group in Texas in 1999 as determined by correct answers to a series of statements. Statements below refer to Texas Parks and Wildlife.

Statement	% Control	% BOW Participants	$\chi^2$
Provided the materials for the program(s) in which you participated	60.66	77.41	8.32*
Responsible for the management of all wildlife in Texas	78.69	78.76	0.00
Operates State Parks in Texas	73.77	80.89	1.74
Enforces Texas hunting, boating, and fishing laws	62.30	65.44	0.24
Uses Sportfish and Wildlife Restoration funds to support some agency programs	40.98	54.83	4.20*
Produces the annual event known as the Wildlife Expo	47.54	68.34	10.54*
Sells state hunting and fishing licenses to fund agency programs	55.74	68.34	10.54*
Manages state cultural and historical sites	32.79	46.14	3.94*

\* =  $P \leq 0.05$

## Ha2: ACTIVITY LEVEL

The BOW program experience did cause an increase in hunting, fishing, and selected non-consumptive activities. The Chi-square tests determined no differences in pre-participation activity levels between the BOW participants and the control group (Table 8). The mean participation rate for BOW participants increased from 3.55 before the BOW program to 4.64 after the program. The increase in BOW participant activity levels after the BOW program reflects changes the women have made in their leisure due to the BOW program. In fact, most (60%) of the BOW program participants said that their increase in outdoor recreational activity was due to program participation.

These results suggest that the BOW program is assisting women diminish the effect of and negotiate their leisure constraints. The following questionnaire respondent comments point to the constraints of lack of knowledge, lack of companions, lack of opportunity, and fear of intimidation being lessened. ““Becoming an Outdoors Woman" programs have given me the confidence I needed to try hunting & fishing.” “Becoming An Outdoors Woman has given me, through careful instruction, more confidence in the handling and driving of my boat. Plus because I am around other women, I do not feel pressure learning as I would around men.” “Becoming An Outdoors Woman is a great program. It helped me feel comfortable trying things I would not otherwise have tried.”

The rank order of activities of respondents before BOW participation were camping, boating, fishing, photographing wildlife, and bird watching. Other activities that were written into the other category were hiking, canoe/kayaking, and shooting sports. The Chi-square tests showed that BOW participants that had been to more than one BOW program did have higher increases in camping per year ( $\chi^2 = 0.21$ ) than did first time BOW attendees ( $\chi^2 = 0.11$ ). Before

program participation, response groups reported more or as much involvement in bird watching, boating, camping, and fishing as did the general Texas population (Thomas and Adams 1998).

Table 8. Chi-square tests (df = 2) of outdoor recreation activity levels per year before participation in BOW program by BOW program participants (n = 574) and a control (n = 61) in Texas in 1999.

Program	% Control	% BOW Participants	$\chi^2$
Birdwatching			2.546*
Never	77.36	73.47	
1 to 5 Times	13.21	20.79	
More than 5 Times	9.43	5.74	
Boating			1.499
Never	28.57	35.70	
1 to 5 Times	53.57	45.36	
More than 5 Times	17.86	18.93	
Camping			0.426
Never	25.00	29.16	
1 to 5 Times	62.50	59.10	
More than 5 Times	12.50	11.74	
Fishing			1.649
Never	44.64	39.25	



Table 8. Continued

Program	% Control	% BOW Participants	$\chi^2$
1 to 5 Times	33.93	42.80	
More than 5 Times	21.43	17.95	
Hunting			0.639
Never	78.18	74.12	
1 to 5 Times	16.36	17.65	
More than 5 Times	5.45	8.24	
Photographing Wildlife			5.025
Never	70.37	58.30	
1 to 5 Times	18.52	33.40	
More than 5 Times	11.11	8.30	

\* =  $P \leq 0.05$

### Ha3: KNOWLEDGE

Participation in a BOW program did not give participants a greater ( $P = 0.11$ ) knowledge of outdoor recreational regulations and behaviors when compared to a control group (Table 9). The mean scores for BOW program participants and the control group were 7.59 and 7.08, respectively. However, BOW program participants scored higher ( $P \leq 0.05$ ) on 1 question dealing with hypothermia and another dealing with fishing on private waters in Texas. There were 10 questions in which groups answers shown by their mean scores were opposite of the TPWD program leaders' desired answers. These questions dealt with boating, fishing, hunting, and general outdoor information. For example, respondents were expected to disagree with 4C,

a fishing topic, but 77% of the BOW participants agreed with the statement. These results were the opposite of the results TPWD desired.

Although the results do not demonstrate a strong knowledge of regulations and safe behaviors, the following respondent comment show that some of this information is influencing BOW participants. “Because of the BOW program, I now teach at BOWs, have become a Hunter Education Instructor, Muzzle-loading Instructor & Level I Shotgun Instructor. I pass on this knowledge to my son, particularly safe handling of firearms.”

Table 9. Percentage of correct scores of BOW program participants (n = 574) and a control (n = 61) group in Texas in 1999 on a series of knowledge statements about angling, boating, hunting, and general outdoor recreational safety. Correct answers are in parenthesis.

	%	%
Statements	Control	BOW Participants
All boaters are required by law to wear a properly fitting personal floatation device. (Disagree)	44.8	37.1
Hypothermia is the leading cause of death among outdoor recreationists. * (Agree)	25.4	42.4
Purchasing a fishing or hunting license for someone else is not legal. (Disagree)	23.9	21.3
It is nearly impossible to plan for an accident before going on a hunting or fishing trip. (Disagree)	91.1	92.4

Table 9. Continued

	Mean Scores	Mean Scores
Statements		
Fishing limits are based on the health of the fish population. (Agree)	65.7	64.6
Hunting accidents are less frequent than boating accidents. (Agree)	20.9	21.3
The majority of boating accidents are not alcohol related. (Disagree)	76.1	84.4
A boat owner can be fined for not having a properly fitting personal floatation device for each person on the boat. (Agree)	89.6	94.1
Rural landowners are doing more to influence wildlife management in Texas than is the state game regulatory agency. (Agree)	22.4	22.1
The primary cause for extinction of wildlife is illegal hunting. (Disagree)	41.8	45.3
It is unlawful to leave fish to die. (Agree)	43.3	52.7
Adults need a license and appropriate stamps to fish in private waters of Texas. * (Disagree)	19.4	33.0
Most women who hunt do so because other family members go hunting. (Agree)	62.7	66.0

\* =  $P \leq 0.05$

#### Ha4: BEHAVIOR

Overall, participation in a BOW program did not cause participants to demonstrate more compliance with safe and legal outdoor recreational behaviors, when compared to a control group (Table 10). There was no difference ( $P = 0.29$ ) in the mean behavior scores ( $\chi = 9.03$  and  $8.67$ , respectively) between BOW program participants and the control group. Questionnaire respondents were able to choose their response to a behavior statement from always, usually, rarely, or never. Participants and the control group were usually unified in their extreme responses. For example, the average respondent would RARELY swim for the nearest shore and NEVER rely on other family members to organize (plan and pack) their hunting trip. Both groups answered over half of the questions consistent with the expectations of TPWD program leaders. BOW program participants scored higher ( $P \leq 0.05$ ) than the control group on 3 statements (Q5D, H and I, Appendix A) dealing with fishing limits, poaching, and personal floatation devices. These results suggest that some positive behavioral changes have been made in response to the information gained during a BOW program. The following BOW participant's comment implies this behavior change. "BOW has done more for my interest and participation in fishing & canoeing than any other outdoor experience. The training we received was excellent from instructors who knew their sport well and transmitted their love for it enthusiastically. I have already begun planning our next all women's canoe trip." Although some behavioral changes have been made, the fact that 33% of BOW program participants would not report poachers, including friends and relatives to authorities, shows that more work needs to be done.

#### Ha5: ETHICS

Participation in a BOW program did not give BOW program participants a greater understanding of outdoor recreational ethics, when compared to a control group (Table 11).

There was no difference ( $P = 0.1267$ ) in the mean attitude score of the BOW program participants ( $\chi^2 = 10.13$ ) and the control group ( $\chi^2 = 9.70$ ). However, both the participants and the control group responded closer to TPWD leaders' expectations on ethical questions than on the outdoor skills knowledge and behavior questions. There were 2 statements in which there were significant differences ( $p \leq 0.05$ ) between BOW participants and the control group. These statements, Q6B and Q6F, dealt with hunting issues and the use of personal floatation devices. Both groups agreed with 2 statements (Q6E and Q6M, Appendix A) concerning hunting regulation goals and boating safety topics, opposite of the answers desired by TPWD program leaders. The positive response to the hunting question is a positive outcome from the BOW program in light of Jackson's (1987) comment, "Many hunter educators and wildlife managers contend, the future of hunting is in the hands of non-hunters, a group that is primarily female."

Table 10. Percentage of correct scores of BOW program participants ( $n = 574$ ) and a control ( $n = 61$ ) group in Texas in 1999 on a series of behavior statements about angling, boating, hunting and general outdoor recreational safety. Correct answers are in parenthesis.

Statements	%	
	Control	BOW Participants
** <i>(always, usually, rarely, or never)</i>		
I will <u>(Never)</u> cross a fence with a loaded firearm, if no one else is in the area.	88.5	85.1
I will <u>(Never)</u> use someone else's hunting or fishing tags on harvested game.	98.3	96.3

Table 10. Continued

Statements **(always, usually, rarely, or never)	%	%
	Control	BOW Participants
Before going to my favorite fishing spot, I will ( <u>Always</u> ) tell someone where I am going.	67.2	74.9
If I catch a bigger fish after I have caught my limit, I will ( <u>Never</u> ) exchange the bigger fish for a smaller one on my stringer. *	49.1	63.5
If I am lost in the wilderness, I will ( <u>Never</u> ) take a compass reading and start walking.	18.0	14.1
If alcohol is consumed on my boat, I will ( <u>Always</u> ) designate a non-drinking driver.	83.6	79.9
If I found a baby deer in the woods with no sign of its mother, I would ( <u>Never</u> ) take it home and find it help.	73.8	66.8
I will ( <u>Always</u> ) report poachers, including friends and relatives to authorities. *	52.5	67.0
If there are pre-teens on my boat, I will ( <u>Always</u> ) make each child wear a personal flotation device. *	80.3	90.9
If my boat tipped over, I would ( <u>Never</u> ) swim for the nearest shore.	14.8	23.2
I ( <u>Never</u> ) retrieve hooks from fish even if the fish has swallowed it.	21.3	18.5

\* =  $P \leq 0.05$ 

\*\* Answer categories

Table 10. Continued

Statements	%	%
	Control	BOW Participants
I will ( <u>Never</u> ) buy hunting or fishing licenses and tags for other family members.	63.9	68.9
If jetskiing, I will ( <u>Never</u> ) jump the wakes as close to the back of the other boat as possible.	90.2	87.5
I will ( <u>Never</u> ) rely on other family members to organize (plan and pack) my hunting trip.	66.0	65.6

\* =  $P \leq 0.05$ 

\*\* Answer categories

Table 11. Mean scores (1 favors the desired viewpoint most strongly; 5 favors the undesired viewpoint most strongly) of BOW program participants (n = 574) and a control (n = 61) group in Texas in 1999 on a series of attitude statements about angling, boating, hunting, and general outdoor recreational safety.

Statements	Mean Scores	Mean Scores	Statements
	Control	BOW participants	
Drinking alcohol while operating a boat is less dangerous than drinking alcohol while driving a car.	3.55	3.40	Drinking alcohol while operating a boat is more dangerous than drinking alcohol while driving a car. #

Table 11. Continued

Statements	Mean Scores		Statements
	Control	BOW participants	
Hunting is a necessary means of managing the white-tailed deer population in Texas. * #	2.22	1.76	Management of the white-tailed deer population in Texas is not necessary. *
You are not breaking hunting, fishing, or boating laws unless you get caught.	4.75	4.88	Breaking hunting, fishing, or boating laws is not an option for me. #
It is fun to be spontaneous and go camping, hunting, or fishing without formalized plans.	3.75	3.97	You should plan every detail of a camping, hunting, or fishing trip before you leave home. #
Hunting safety regulations are designed to protect people from other participants. **	3.21	3.34	Hunting safety regulations are designed to protect people from themselves.
Personal flotation devices are primarily for people who cannot swim or cannot swim well. *	4.43	4.83	Personal flotation devices are for all people when on or near water. * **

\* =  $P \leq 0.05$ 

\*\* = Correct answers



Table 11. Continued

	Mean Scores		Mean Scores	
Statements	Control	BOW	Statements	
		participants		
While boating, children are in the most danger of drowning.	3.98	4.25	While boating, everyone is in equal danger of drowning.	**
Game animal harvest limits are random numbers picked by the state's regulatory agency.	4.77	4.76	Game animal harvest limits are based on the careful counting of game conducted by the state's regulatory agency.	**
Planning for camping, hunting, or fishing trips should be one person's responsibility.	4.30	4.64	Everyone going on camping, hunting, or fishing trips should be involved with and know the plan by heart.	**
Take all of the game you want, regardless of the limit.	4.86	4.82	Take only the amount of game you use, regardless of the limit.	**

\* =  $P \leq 0.05$ 

\*\* = Correct answers

Table 11. Continued

Statements	Mean Scores		Statements
	Control	BOW participants	
Some fish (Carp, Gar, or Hard heads) have importance to the ecosystem. **	<b>1.54</b>	<b>1.48</b>	<b>Some fish (Carp, Gar, or Hard heads) should be thrown on the shore to die.</b>
Purchasing hunting or fishing license is a good way to contribute to wildlife management efforts. **	1.45	1.30	Purchasing hunting or fishing licenses is not necessary to fund wildlife management efforts.
Learning to operate a personal watercraft safely is less difficult than learning to operate a motorboat.	3.20	3.12	Learning to operate a personal watercraft safely is more difficult than learning to operate a motorboat. **
A group of women should not go camping by themselves.	4.44	4.59	A group of women should take every opportunity to go camping by themselves. **

\* =  $P \leq 0.05$ 

\*\* Answer categories

## RECOMMENDATIONS FOR FUTURE RESEARCH

This study has provided valuable insights into the manner in which future evaluations of TPWD's BOW program might be conducted. Some of these insights are listed below.

- (1) The measurable outcomes that TPWD program leaders expect of program participants, such as knowledge, performance, and ethical attitudes, need to be more fully developed or explicitly articulated by the education department.
- (2) Program participants should expect to complete an evaluation instrument as an entry and exit activity to program participation. Program evaluation needs to take place as close as possible to the entry and exit dates of program participation. This would eliminate the problems of information recall, interpretation of the questions, problems of relocated participants, and the considerable wasted expense of postal delivery from undeliverable or non-response reminders.
- (3) Study results demonstrated that level of performance on the majority of questionnaire items could not be attributed to program participation. Completion of a pre- and post-test, using a different set of questionnaires that measure the same intended outcomes can measure program participation effect. One way to determine the effect of individual courses would be to use pre- and post-tests with BOW participants enrolled in those courses (i.e. boating, fishing, or hunting related courses) versus those BOW participants who did not take these courses. This would be one way to assess the effects of the courses. There are several approaches in the administration of pre- and post-tests. None of the approaches will produce a bias-free set of results. The approach that would have the least amount of impact on actual program participation would be an online survey for each potential participant to fill out as part of the enrollment process (i.e. program enrollment is contingent upon a completed and returned questionnaire).

Furthermore, program completion and certification, if appropriate, would be contingent upon a completed post-test before leaving the program. Another suggestion is to mention the importance of the post-test questionnaire, and offer a reward to participants for filling out a questionnaire at the end of the BOW program. A suggested reward for questionnaire completion would be a ticket for the programs good-bye outdoor item raffle give-away. Most BOW participants would be more willing to fill out the pre- and post-test questionnaires if they felt they were helping the program make adjustments and improvements.

- (4) The age, education, and gender need to be reconsidered for further evaluations. It is important to write the questionnaire with just the BOW audience in mind, i.e. a group of middle-aged, educated, financially stable women who voluntarily pay to take part in the BOW program. For example, several comments about the questionnaire being gender biased (written by a male) or insulting to women (a cartoon figure that some thought looked like a woman in high-heeled hiking boots) were received.
- (5) The BOW program needs to be evaluated in terms of the personnel and budget allocation on a per capita investment. The evaluation not only includes the individual state fish and wildlife conservation agency's support of the program as a whole, but also the registering repeat and out of state attendees. In cases where registration for a BOW program fills quickly, many states will offer registration to first time participants prior to opening program registration to repeat attendees. Offering registration to first time attendees opens the BOW opportunity to as many women as possible. Meanwhile, the state maintains a positive relationship with repeat attendees who want to learn how to participate in activities that they did not have exposure to in previous BOW programs. Those applying from out of state could be subject to the same type of registration

process as repeater attendees if necessary. Each state BOW program needs to make the assessment on the program acceptance of repeat and out of state attendees based on their program goals, agency outlook, and financial means.

- (6) The scantron based questionnaire design should be retained. Filling in bubbles is a common method of test taking and recognized by most participants. Questionnaires were custom designed for this study and can be redesigned as is appropriate for future evaluations. Furthermore, results can be generated and analyzed quickly and inexpensively.
- (7) Program evaluation is not a one-time event. It should become an integral part of operations in the TPWD Education Division. Program evaluation is a difficult process and requires personnel with specialized training. Program evaluation that is considered a casual process or an afterthought, will only produce anecdotal information at best. Evaluating a program should be considered as a part of the program development including the establishment of goals, questionnaire development, survey administration, data accumulation and analysis, and communication of the status of information.
- (8) The BOW program is designed to introduce women over the age of 18 to outdoor activities. It is assumed that once introduced to the activities that women will start participating in the activities on their own (Ashley Matthews, Texas Parks and Wildlife, personal communication). For some women, the way to remain motivated and negotiate constraints can be obtained through a BOW program, especially if they attend more than once. Information from a TPWD BOW 2003 post test survey showed that 80% of repeat BOW participants noted an increase in their interest in all outdoor activities as a result from participation in the TPWD BOW program. These same repeat BOW participants were more likely to have joined conservation or outdoor related organizations, and on

average spent \$500 on outdoor expenditures per year (Ashley Matthews, Texas Parks and Wildlife, unpublished report).

- (9) Retention of the women in outdoor activities is important financially to TPWD.

Although Jackson et al. (1993) showed that once a person is involved in an activity they will most likely not stop participating in the activity due to constraints, it is important to follow the participants in their outdoor activity progress. Mannell and Loucks-Atkinson (In press) suggest that as people evolve in their pursuits of a leisure activity that their constraints will change. Research into women's progression through outdoor activities might provide insights into the most desirable and profitable organization of Advanced BOW programs.

## MANAGEMENT IMPLICATIONS

There are four main benefits to conducting an evaluation. They are: (1) provide accountability in demonstrating a program's worth; (2) offer an opportunity for receiving feedback and improving programs; (3) further understanding of the process of program development; and (4) promote conservation education by substantiating claims about its benefits. TPWD's recognition of the benefits of educational program evaluation shows their Education Division as being progressive in thought and deed. In this study, the values of the BOW program were determined by program participant's awareness of TPWD's mission and purpose, level of involvement in outdoor recreational activities and the degree which the participants were informed practitioners of outdoor recreational skills and ethics. Since no benchmark was set in any of the measurement criteria prior to program evaluation, it is the task of TPWD to judge whether the BOW program participants have reached the desired end points. This task may be difficult and certainly subjective given the fact that program leaders did not define specific goals and desired outcomes from program participation. This study did provide an opportunity to receive feedback, promote conservation education by substantiating claims of its benefits and improving BOW programming. Listed below is a set of recommendations for future programs based on study findings and conversations with BOW program participants, the program leaders, project collaborators and instructors.

1. Set concise and measurable goals for programming. It is difficult to measure the BOW goal of encouraging women to be involved in outdoor activities without defining "involvement." Is going hiking once a year in a state park considered involvement?
2. Follow up on past attendees and their outdoor activities. Past attendee's activity levels and continued activity barriers will provide program leaders with information

on how to better serve their constituents. State agencies want to encourage BOW program participants to continue their outdoor activity involvement through license sales, park attendance fees, and/or political clout through votes or phone calls during critical game and fish department budgeting issues. TPWD has shown a commitment to the women of Texas through assisting TOWN groups and offering advanced BOW programs around the state. Through these offerings TPWD is providing women with companions with whom to recreate and continued educational opportunities.

3. Find ways to keep better track of past participants after program participation. It was difficult to find past attendees because of incorrect addresses which was compounded by some women being listed in telephone listings under their husband's name.
4. Continue holding Advanced BOW activities to encourage continued involvement in an activity. Many women commented that they enjoyed the BOW program, however some of them do not continue in the activity due to a lack of a partner. TOWN groups and Advanced BOWs are ways to provide partners. However, if retention is part of the BOW program goals, other ways to keep women involved in outdoor activities needs to be pursued. For example, Adams and Steen (1997) showed that continued participation in outdoor recreational activities by women is contingent upon family, significant other, or spousal involvement. The need for expanded markets for family outdoor programs was shown in the questionnaire comments and has been accomplished in other states with great results.
5. More strongly encourage TOWN groups during the weekend. Although women might know that there is a TOWN group in their area, they might not approach the



group after the weekend unless they have prior encouragement or involvement. One approach would be to have representatives of TOWN groups available in a designated area to “meet and greet” while providing information about their group and activities. Another possibility would be to have a poster listing the TOWN groups established along with a sign up sheet for women who want more information about the group in their area. The interested women’s names and contact information could be sent on to the corresponding TOWN group officers for follow-up. Another possibility would be to house the BOW participants with others from their area to foster making of friends/activity buddy relationships. Making a point of encouraging women to meet and potentially plan a future outdoor activity might prove fruitful.

6. More strongly advertise Advanced BOW events. Although Advanced BOW classes are discussed and flyers sent to appropriate women (those who have taken pre-requisite classes) it might be helpful to post the upcoming events in a central meeting place during the weekend. Having the events listed with descriptions, dates, and contact information might encourage more attendance at Advanced BOW events. Another option would be to look into changing the prerequisite from having to have been trained during a BOW program to accepting other training that would fit within safety regulations. BOW programs are not the only outdoor activity training opportunity for women. State agencies need to remain flexible in their programs and prerequisites which will allow for education program development growth.
7. Prepare a registration framework for meeting the needs of first time participants along with out of state and repeat BOW attendees. The question should be raised if

the goals of the Texas BOW program are to support women with multiple BOW programs or other state's repeat attendees. If there is registration space within a BOW program and the registration fees cover the cost of each participant, there is no reason for the repeat or out of state attendees not to be admitted. It is when the registration space is limited that the first time attendees need to become the priority. It usually proves to more of a benefit to the state to apply the same customer service principles to each participant without enacting any hard and fast rules that might not have application in the long run.

8. Encourage more interaction between women and instructors. Although there are many chances for women to interact with each other through different classes, cabin assignments, and evening programs, interaction with the instructors was mostly limited to during instruction. Providing activities or time for interchange between instructors and participants to would allow for more information, personal exchange, and a better image of the state agency program. The instructors are role models for the participants. Having increased interactions might provide the interpersonal support, encouragement, or information that a participant needs to become active in the outdoors.
9. One benefit of the BOW program has always been the advertisement through word of mouth from past participants. One challenge has been involving women who do not "fit" the typical parameters of a BOW participant. Finding effective means of attracting women of different backgrounds into the program and encouraging these women with female and/or minority instructors can prove difficult, but remains a goal for which TPWD needs to strive. Although advertising budgets remain tight, press releases, appearances on TV or radio stations, speeches given to organizations,

and working booths at fairs usually reach women that might not have heard of the BOW program otherwise.

10. Women say they will engage in outdoor activities if inexpensive training and gear is available (Ensign, 1999). If scholarships are available, the BOW program is a perfect outlet for women to gain the training. It should be a goal of TPWD to continue to offer scholarships to attract women who may not otherwise be able to afford the \$175 registration fee. Free raffles of outdoor equipment, gear, or trips during the weekend event would be another way to encourage retention in outdoor activities after the BOW program. Since the induction of the BOW program, the sporting gear market has seen an increase in women's gear enabling women to be more comfortable and successful in the outdoors. This is an important trend that will hopefully continue to grow.

Finally, this study furthered our understanding of the process of program development, particularly in relation to the program evaluation process. The program evaluation process, as outlined above, revealed a proactive, dynamic, ongoing activity that substantiates the very existence of a program. This study was an exploration and education in the evaluation process. It was not intended to be a one-time event. Rather, this study might represent the framework for developing program evaluations as an integral part of program development.

## STUDY LIMITATIONS

The questionnaire tried to assess too many educational programs (Texas Angler Education, Texas Boater Education, and Texas Hunter Education). A questionnaire aimed more specifically to a set of better-defined BOW leader goals would lend a better evaluation of the BOW program. However, this study did lend itself well to providing TPWD with data about its BOW participants. This study did help TPWD program leaders validate their support of the BOW program. Further research into the BOW program should focus on the effects of individual activity training during and after a BOW program.

This study tried to evaluate the BOW program from a set of goals that unfortunately, do not lend themselves to easy testing. A more concrete and measurable set of TPWD's BOW program goals would directly lead to more productive evaluation questions and measurable outcomes. The further definition might initially take time not easily found, but would make TPWD's next evaluation process much easier and smoother.

After the evaluation was complete, it was discovered that TPWD indeed had a database of women who had inquired into the BOW program without ever attending the program. This set of women would make an excellent control group. Keeping such a database up to date would assist the next evaluation process considerably.

Another study limitation was not asking demographic information enabling researchers to determine respondents who were single mothers. TPWD is currently interested in starting an outdoor educational program for single mothers. The information gathered from this study could have been used as a guide for the new program as well as baseline for future research.

## SUMMARY AND CONCLUSIONS

Restated, the hypotheses of this study were that the BOW program participants would demonstrate: (1) higher awareness of TPWD's mission and purpose (2) higher activity levels after attending a BOW program (3) better understanding of outdoor activity information (knowledge) (4) would report more safe and natural resource decisions (behavior), and (5) would agree with safer or more environmentally friendly action statements (ethics) than a control group. Except for a higher awareness of TPWD's mission and purpose along with increased outdoor recreational activity levels, the intended outcomes from program participation by TPWD program leaders were not realized. BOW participants did not demonstrate that they had improved their outdoor skills knowledge, behavior, and ethics toward angling, boating, hunting, and non-consumptive outdoor activities. Participant's ability to only take four courses during a program makes it difficult for them to receive training in all of the categories, angling, boating, hunting and non-consumptive. The following BOW participant comment shows the lack of training in all of the categories. "I enjoyed my "Becoming An Outdoor Woman" classes! I would like to take the boater safety class as well as fishing and bird watching. Hunting is not for me. ;-). Thanks for sponsoring this program!" The lack of training in each category is one of the inherent causes for the lack of improvement in outdoor activity knowledge, behavior, and ethics.

Although not all of the intended outcomes for the Texas BOW program were reached, the goals of participants gaining knowledge of TPWD and increasing their outdoor activity levels were attained. Not only were the Texas BOW participants able to report more about TPWD than the control group and the general public of Texas, positive relationships between the state agency and their constituents were formed (Thomas and Adams 1998). One of the benefits for a state agency to have positive relationships with its constituents is the support provided to

the agency in times of need. In In press, BOW participants made calls to their state legislature in support of TPWD while it was facing impending budget cuts.

The other realized goal of the Texas BOW program was an increase in outdoor activity levels due to the participation in the BOW program. Many questionnaire comments reflect BOW participants desire to be active in the outdoors after their involvement with the Texas BOW program. The participant comments also show that the Texas BOW program helped women negotiate their interpersonal, intrapersonal, and structural constraints. The most common constraints were lack of knowledge (intrapersonal), the lack of companions (interpersonal), along with lack of time, lack of money, and lack of opportunities (structural). The following participant comments suggest that the format of Texas BOW program provides the support, education, motivation, and opportunities needed by some women to navigate their way into becoming involved in outdoor activities. “I took fly fishing & fly tying, canoeing & kayaking at the outdoor woman seminar; I really enjoy fishing, have a license and hope to purchase a kayak this year to do more fishing.” Another comment implying constraint negotiation was, “I completed this form while camping ... perfect weather. I became interested in the outdoors after my husband saw an ad in the newspaper for Becoming An Outdoors Woman - I attended 2 and loved them.” The last comment shows the finding of outdoor activity opportunities (structural constraint) while highlighting participation in outdoor activities with her sons (interpersonal constraint negotiation). “BOW has made me more aware of the wonderful opportunities available. Also has given me more in common with my sons and more activities to share with them.”

However, there were also comments that show that individuals have different constraints due to their personal experience (Walker and Virden In press). For example, “One of the best programs to come along is the Becoming an Outdoors Woman program. The main reason I

haven't continued participating in programs is no buddy. However, my family has given me a fishing rod and reel. I guess I need to strike out alone.” Followed by the comment, “These (BOW programs) should be more frequent and less expensive and easily accessible events to go to for women to encourage them.” These BOW participant comments highlight interpersonal constraints (lack of companionship) and structural constraints (funding and opportunity) that will continue to affect women beyond the positive influence provided by the Texas BOW program.

Another interesting evaluation finding is the large number of women who attend more than one BOW. Of the BOW questionnaire respondents, 33% had been to more than one BOW program. According to TPWD staff, the majority of the repeat BOW participants will attend three or four programs before they “leave the nest” to practice outdoor leisure on their own (Ashley Matthews, Texas Parks and Wildlife, personal communication).

According to BOW participants’ comments, BOW programs represent an opportunity for women to be trained in new skills and information, to be in companionship with other women with the same goals, and knowledgeable of other outdoor opportunities. One participant wrote, “All my outdoor education programs have been through ‘Becoming an Outdoors Woman’ (Texas & Okla.) GREAT PROGRAM!! - They are mini crash courses, but give you a taste of the sport...” Another comment received was, “I've attended 4 Becoming an Outdoors Woman seminars. All have been excellent learning experiences and opens opportunities for me to explore more of what Texas has to offer outdoors.” The last comment highlights the need for companions, societal support in outdoor activities, and the motivation to provide other women the same opportunity. “Becoming an outdoors woman + Texas Outdoors woman network are the best things that I have ever been involved in. I started a network here in Arkansas that is now a non-profit corporation that supports women in the outdoors!!!”

Overall, the BOW program meets women's physical needs (housing and food) while providing women learning opportunities with encouraging companions, equipment, and safety. The typical constraints of a leisure novice such as, lack of equipment, lack of opportunity, and lack of companions are alleviated during the Texas BOW program. Thus, it can be said that the Texas BOW program provides some women with motivations, lowered constraints, and negotiation strategies that evolve into participation in outdoor activities.



## LITERATURE CITED

- Adams, C. E., and S. J. Steen. 1997. Texas females who hunt. *Wildlife Society Bulletin* 25, no. 4: 796-802.
- Archer, J. and M. McDonald. 1990. Gender roles and sports in adolescent girls. *Leisure Studies* 9, no. 3: 225-240.
- Bialeschki, M. D. In press. Fear of violence: contested constraints by women in outdoor recreation activities. E.L. Jackson, editor. *Constraints to Leisure*. State College, Pennsylvania: Venture Publishing
- Bialeschki, M. D., and H. Hicks. 1999. "I refuse to live in fear": the influence of fear of violence on women's outdoor recreational activities. [www.unc.edu/depts/recreate/LSAfeare.html](http://www.unc.edu/depts/recreate/LSAfeare.html).
- Brown, P. R., W. J. Brown, Y. D. Miller and V. Hansen. 2001. Perceived constraints and social support for active leisure among mothers with young children. *Leisure Sciences* 23, no. 3: 131-145.
- Caldwell, L. L., and C. K. Baldwin. In press. A developmental approach to understanding constraints to adolescent leisure. In E.L. Jackson, editor. *Constraints to Leisure*. State College, Pennsylvania: Venture Publishing
- Carroll, B., and K. Alexandris. 1997. Perception of constraints and strength of motivation: their relationship to recreational sport participation in Greece. *Journal of Leisure Research* 29: no. 3: 279-299.
- Crawford, D. W., and G. Godbey. 1987. Reconceptualizing barriers to family leisure. *Leisure Sciences* 9, no. 2: 119-127
- Crawford, D. W., and T. L. Huston. 1993. The impact of the transition to parenthood on marital leisure. *Personality and Social-Psychology Bulletin* 19: 34-46.
- Crawford, D. W., and E. L. Jackson. In press. Leisure constraints theory: dimensions, directions, and dilemmas. In E.L. Jackson, editor. *Constraints to Leisure*. State College, Pennsylvania: Venture Publishing
- Crawford, D. W., E. L. Jackson. and G. Godbey. 1991. A hierarchical model of leisure constraints. *Leisure Sciences* 13: 309-320.
- Deem, R. 1986. *All Work and No Play? The Sociology of Women and Leisure*. Milton Keynes, England: Open University Press.
- Elliott, D. S. 1991. "Hunter Ethics: A Look at Hunter Behavior and Hunter Education in the U.S. and Canada." Federal Aid Grant No. 14-16-00090-90-1218. Izaak Walton League of America, Unpublished Wildlife Report. Washington D.C., USA.

- Ensign, J. D. 1999. Becoming an Outdoors-Woman: factors that enhance or inhibit the participation of women in fish and wildlife-based recreation. Thesis, University of Wisconsin, Stevens Point, USA.
- Ewerts, A. 1988. The identification and modification of situational fears associated with outdoor recreation. *Journal of Leisure Research* 20, no. 2: 106-17.
- Godbey, G. In press. Time as constraint to leisure. In E.L. Jackson, editor. *Constraints to Leisure. State College, Pennsylvania: Venture Publishing*
- Govaerts, F. 1985. Social indicators of leisure and the quality of life: the issue of the status of women and the elderly. *World Leisure and Recreation* 27, no. 2: 49-51.
- Henderson, K. A. 1990. The meaning of leisure for women: an integrative review of the research. *Journal of Leisure Research* 22, no. 3: 228-43.
- Henderson, K. A. 1996. One size doesn't fit all: the meanings of women's leisure. *Journal of Leisure Research* 28, no. 3: 139-54.
- Henderson, K. A., L. H. Bendini, L. Hecht and R. Schuler. 1995. Women with physical disabilities and the negotiation of leisure constraints. *Leisure Studies*, 14: 17-31.
- Henderson, K. A., and M. D. Dialeschki. 1991. A sense of entitlement to leisure as constraint and empowerment for women. *Leisure Sciences* 13, no. 1: 51-65.
- Hubbard, J., and R. C. Mannell. 2001. Testing competing models of the leisure constraint negotiation process in a corporate employee recreation setting. *Leisure Sciences* 23:145-163
- Jackson, E. L., D. W. Crawford and G. Godbey. 1993. Negotiation of leisure constraints. *Leisure Sciences* 15, no. 1: 1-11.
- Jackson, E. L., and Karla A. Henderson. 1995. Gender-based analysis of leisure constraints. *Leisure Sciences* 17: 31-51.
- Jackson, E. L., and D. Scott. 1999. Constraints on leisure and recreation. Pages 299-321 in E.L. Jackson and T. L. Burton, editors. *Leisure Studies: Prospects for the Twenty-First Century. State College, Pennsylvania: Venture Publishing*
- Jackson, R. M. 1987. The characteristics and formative experiences of female deer hunters. *Women in Natural Resources* 9: no. 3: 17-21.
- Jacobson, S. K. 1991. Evaluation model for developing, implementing, and assessing conservation education programs: examples from Belize and Costa Rica. *Environmental Management* 15, no. 2: 143-50.
- Kary, T., and G. Jackson. 1991. Leisure despite constraints: the impact of leisure constraints in leisure participation. *Journal of Leisure Research* 23: 301-313.

- Leaman, O., and B. Carrington. 1985. Athleticism and the reproduction of gender and ethnic marginality. *Leisure Studies* 4: 205-17.
- Lueck, D. H., and C. L. Thomas. 1997. Effect of the Becoming an Outdoors-Woman program on attitudes and activities of the participants. *Women in Natural Resources* 19, no. 1: 4-8.
- Mannell, R. C., and A. Loucks-Atkinson. In press. Why don't people do what's "good" for them? Cross-fertilization among the psychologies of non-participation in leisure, health, and exercise behaviors. In E.L. Jackson, editor. *Constraints to Leisure. State College, Pennsylvania: Venture Publishing*
- Nadirova, A., and E. L. Jackson. 2000. Alternative criterion variables against which to assess the impacts of constraints to leisure. *Journal of Leisure Research* 32: 396-405.
- O'Leary, J. T., J. Behrens-Tepper, F.A. McGuire, and F.D. Dottavio. 1987. Age of first hunting experience: results from a national recreation survey. *Leisure Science* 9, no. 4: 225-33.
- Raymore, L. A. 2002. Facilitators to Leisure. *Journal of Leisure Research* 34, no. 1: 37-51.
- Salant, P., and D. A. Dillman. 1994. *How to Conduct Your Own Survey. New York, New York: John Wiley & Sons.*
- Scott, D. In press. The relevance of constraints research to leisure service delivery. In E.L. Jackson, editor. *Constraints to Leisure. State College, Pennsylvania: Venture Publishing*
- Scott, D. 1993. Time scarcity and its implication for leisure behavior and leisure delivery. *Journal of Park and Recreation Administration* 11:51-60.
- Scott, D., and W. Munson. 1994. Perceived constraints to park usage among individuals with low incomes. *Journal of Park and Recreation Administration* 12, no. 1: 52-69.
- Scott, D., and C. S. Shafer. 2001. Recreational specialization: a critical look at the construct. *Journal of Leisure Research* 33, no. 3: 319-343.
- Shaw, S. M., and K. Henderson. In press. Gender analysis and leisure constraints: an uneasy alliance. In E.L. Jackson, editor. *Constraints to Leisure. State College, Pennsylvania: Venture Publishing*
- Stebbins, R. A. 1999. *New Directions in the Theory and Research of Serious Leisure. New York, New York: The Edwin Mellen Press.*
- Thomas, J. K. and C. E. Adams. 1998. Statewide survey of the Texas public for Texas outdoors: a vision of the future. Texas Parks and Wildlife unpublished report. Austin, Texas, USA.
- Thomas, C. L., and T. A. Peterson. 1993. Becoming an Outdoors-Woman. *Women in Natural Resources* 15, no. 3: 16-21.
- Thomas, C. L., T. A. Peterson, and D. Lueck. 1993. *The becoming an outdoors-woman planning guide. University of Wisconsin, Stephens Point, USA.*

- U.S. Census Bureau. 2002. American community survey. United States Census Bureau, 2002 edition. *Washington, D.C., USA*
- Walker, G. J., and R. J. Virden. In press. Constraints on outdoor recreation. E.L. Jackson, editor. *Constraints to Leisure. State College, Pennsylvania: Venture Publishing*
- Wearing, B. 1991. Leisure and women's identity: conformity or individuality? *Loisir Et Societe* 14, no. 2: 575-86.
- Woodward, D., and E. Green. 1988. "Not tonight, dear!" The social control of women's leisure. *Relative Freedoms* 131-146.

APPENDIX A  
QUESTIONNAIRE

### Outdoor Education Program Evaluation

1. Listed below are four outdoor education programs. Please identify the education programs in which you have been a participant, when and where you received your training, and who was your instructor.

A. Did you participate in Texas Angler Education?

Yes \_\_\_ No \_\_\_ Go to Texas Boater Education

1. During which year(s) did you receive your training? (Check all that apply)

- a. 1998 \_\_\_
- b. 1997 \_\_\_
- c. 1996 \_\_\_
- d. 1995 \_\_\_
- e. 1994 \_\_\_
- f. 1993 \_\_\_
- g. other \_\_\_ Which year(s)? \_\_\_\_\_

2. Where did you receive your training? (Check all that apply)

- a. public school \_\_\_
- b. home study \_\_\_
- c. public workshop \_\_\_
- d. camp \_\_\_
- e. marina \_\_\_
- f. shooting range \_\_\_
- g. other \_\_\_ Where? \_\_\_\_\_

3. Who was your instructor? (Check all that apply)

- a. school teacher \_\_\_
- b. volunteer \_\_\_
- c. game warden/  
law enforcement \_\_\_
- d. 4-H leader \_\_\_
- e. other youth leader \_\_\_
- f. coast guard auxiliary/  
power squadron \_\_\_
- g. other \_\_\_ Who? \_\_\_\_\_
- h. do not remember \_\_\_

## B. Did you participate in Texas Boater Education?

Yes \_\_\_ No \_\_\_ Go to Texas Hunter Education

## 2. During which year(s) did you receive your training? (Check all that apply)

- a. 1998 \_\_\_
- b. 1997 \_\_\_
- c. 1996 \_\_\_
- d. 1995 \_\_\_
- e. 1994 \_\_\_
- f. 1993 \_\_\_
- g. other \_\_\_ Which year(s)? \_\_\_\_\_

## 2. Where did you receive your training? (Check all that apply)

- a. public school \_\_\_
- b. home study \_\_\_
- c. public workshop \_\_\_
- d. camp \_\_\_
- e. marina \_\_\_
- f. shooting range \_\_\_
- g. other \_\_\_ Where? \_\_\_\_\_

## 3. Who was your instructor? (Check all that apply)

- a. school teacher \_\_\_
- b. volunteer \_\_\_
- c. game warden/  
law enforcement \_\_\_
- d. 4-H leader \_\_\_
- e. other youth leader \_\_\_
- f. coast guard auxiliary/  
power squadron \_\_\_
- g. other \_\_\_ Who? \_\_\_\_\_
- h. do not remember \_\_\_

## C. Did you participate in Texas Hunter Education?

Yes \_\_\_ No \_\_\_ Go to Becoming an Outdoors Woman

## 3. During which year(s) did you receive your training? (Check all that apply)

- a. 1998 \_\_\_
- b. 1997 \_\_\_
- c. 1996 \_\_\_
- d. 1995 \_\_\_
- e. 1994 \_\_\_
- f. 1993 \_\_\_
- g. other \_\_\_ Which year(s)? \_\_\_\_\_

## 2. Where did you receive your training? (Check all that apply)

- a. public school \_\_\_
- b. home study \_\_\_
- c. public workshop \_\_\_
- d. camp \_\_\_
- e. marina \_\_\_
- f. shooting range \_\_\_
- g. other \_\_\_ Where? \_\_\_\_\_

## 3. Who was your instructor? (Check all that apply)

- a. school teacher \_\_\_
- b. volunteer \_\_\_
- c. game warden/  
law enforcement \_\_\_
- d. 4-H leader \_\_\_
- e. other youth leader \_\_\_
- f. coast guard auxiliary/  
power squadron \_\_\_
- g. other \_\_\_ Who? \_\_\_\_\_
- h. do not remember \_\_\_



## D. Did you participate in Becoming an Outdoors Woman?

Yes \_\_\_ No \_\_\_ Go to Question 2

## 4. During which year(s) did you receive your training? (Check all that apply)

- a. 1998 \_\_\_
- b. 1997 \_\_\_
- c. 1996 \_\_\_
- d. 1995 \_\_\_
- e. 1994 \_\_\_
- f. 1993 \_\_\_
- g. other \_\_\_ Which year(s)? \_\_\_\_\_

## 2. Where did you receive your training? (Check all that apply)

- a. public school \_\_\_
- b. home study \_\_\_
- c. public workshop \_\_\_
- d. camp \_\_\_
- e. marina \_\_\_
- f. shooting range \_\_\_
- g. other \_\_\_ Where? \_\_\_\_\_

## 3. Who was your instructor? (Check all that apply)

- a. school teacher \_\_\_
- b. volunteer \_\_\_
- c. game warden/  
law enforcement \_\_\_
- d. 4-H leader \_\_\_
- e. other youth leader \_\_\_
- f. coast guard auxiliary/  
power squadron \_\_\_
- g. other \_\_\_ Who? \_\_\_\_\_
- h. do not remember \_\_\_

2. Each of the following statements on the left side of the table below describes a Texas state agency. Please write in the name of the agency on the line underneath the descriptive statement. If you do not know the name of the state agency, please leave the space blank.

- a. Provided the materials for the program(s) in which you participated.
- b. Responsible for the management of all wildlife in Texas.
- c. Operates Texas State Parks.
- d. Enforces Texas hunting, boating, and fishing laws.
- e. Enforces traffic laws.
- f. Manages Texas State Forests.
- g. Uses Sportfish and Wildlife Restoration funds to support some agency programs.
- h. Produces the annual event known as the Wildlife Expo.
- i. Sells state hunting and fishing licenses to fund agency programs.
- j. Manages state cultural and historical sites.
- k. Maintains rest-area parks along highways.

3A. BEFORE you were a participant in the program(s) you listed in question #1, how often did you take special trips to do any of the following activities? For each activity mark one response that represents you level of participation.

1. Birdwatching
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
2. Boating
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
3. Camping
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
4. Fishing
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
5. Hunting
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
6. Photographing wildlife
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
7. Other \_\_\_\_\_
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year

3B. After you were a participant in the program(s) you listed in question #1, how often did you take special trips to do any of the following activities? For each activity mark one response that represents your level of participation.

1. Birdwatching
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
2. Boating
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
3. Camping
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
4. Fishing
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
5. Hunting
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
6. Photographing wildlife
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year
  
7. Other \_\_\_\_\_
  - a. Never
  - b. 1-5 times per year
  - c. More than 5 times per year

3C. If there were changes in your level of participation in the above activities, were these changes due to your participation in the program(s) you listed in question #1? Mark one response only.

Yes \_\_\_      No \_\_\_      No Change \_\_\_

4. Please indicate whether you agree or disagree with the below statements. If you neither agree nor disagree, mark “not sure”. Mark one answer only.

	Agree	Disagree	Not Sure
A. All boaters are required by law to wear a properly fitting personal floatation device.	___	___	___
B. Hypothermia is the leading cause of death among outdoor recreationists.	___	___	___
C. Purchasing a fishing or hunting license for someone else is not legal.	___	___	___
D. It is nearly impossible to plan for accidents before going on a hunting or fishing trip.	___	___	___
E. Fishing limits are based on the health of the fish populations.	___	___	___
F. Hunting accidents are less frequent than boating accidents.	___	___	___
G. The majority of boating accidents are not alcohol related.	___	___	___
H. A boat owner can be fined for not having a properly fitting personal floatation device for each person on the boat.	___	___	___
I. Rural landowners are doing more to influence wildlife management in Texas than is the state game regulatory agency.	___	___	___
J. The primary cause for extinction of wildlife is illegal hunting.	___	___	___
K. It is unlawful to leave fish to die	___	___	___
L. Adults need a license and appropriate stamps to fish in private waters of Texas.	___	___	___
M. Safety regulations for motorboats do not apply to personal watercraft.	___	___	___
N. Most women who hunt do so because other family members go hunting.	___	___	___

5. Please fill in the blank space in each of the following statements by selecting the word Always, Usually, Rarely, or Never. Please respond to each statement regardless of your level of participation in the activities mentioned.

	Always	Usually	Rarely	Never
A. I will ___ cross a fence with a loaded firearm, if no one else is in the area.	___	___	___	___
B. I will ___ use someone else's hunting or fishing tags on harvested game.	___	___	___	___
C. Before going to my favorite fishing spot, I will ___ tell someone where I am going.	___	___	___	___
D. If I catch a bigger fish after I have caught my limit, I will ___ exchange the bigger fish for a smaller one on my stringer.	___	___	___	___
E. If I am lost in the wilderness, I will ___ take a compass reading and start walking.	___	___	___	___
F. If alcohol is consumed on my boat, I will ___ designate a non-drinking driver.	___	___	___	___
G. If I found a baby deer in the woods with no sign of its mother, I would ___ take it home and find it help.	___	___	___	___
H. I will ___ report poachers, including friends and relatives, to authorities.	___	___	___	___
I. If there are pre-teens on my boat, I will ___ make each child wear a personal floatation device.	___	___	___	___
J. If my boat tipped over, I would ___ swim for the nearest shore.	___	___	___	___
K. I ___ retrieve hooks from fish even if the fish has swallowed it.	___	___	___	___
L. I will ___ buy hunting or fishing licenses and tags for other family members.	___	___	___	___
M. If jetskiing, I will ___ jump wakes as close to the back of the other boat as possible.	___	___	___	___
N. I will ___ rely on other family members to organize (plan and pack) my hunting trip.	___	___	___	___

6. Indicate the extent that you agree with the following list of opposite viewpoints. (1 favors the LEFT viewpoint most strongly; 5 favors the RIGHT most strongly; 3 compromises.) Please respond to each statement regardless of your level of participation in the activities mentioned. Mark only one response number on each line.

	1	2	3	4	5	
A. Drinking alcohol while operating a boat is less dangerous than drinking alcohol while driving a car.						Drinking alcohol while operating a boat is more dangerous than drinking alcohol while driving a car.
B. Hunting is a necessary means of managing the white-tailed deer population in Texas.						Management of the white-tailed deer population in Texas is not necessary.
C. You are not breaking hunting, fishing, or boating laws unless you get caught.						Breaking hunting, fishing, or boating laws is not an option for me.
D. It is fun to be spontaneous and go camping, hunting, or fishing without formalized plans.						You should plan every detail of a camping, hunting, or fishing trip before leaving home.
E. Hunting safety regulations are designed to protect people from other participants.						Hunting safety regulations are designed to protect people from themselves.
F. Personal floatation devices are primarily for people who can not swim or can not swim well.						Personal floatation devices are for all people when on or near water.
G. Planning for camping, hunting, or fishing trips should be one person's responsibility.						Everyone going on camping, hunting, or fishing trips should be involved with and know the plan by heart.
H. Take all of the game you want, regardless of the limit.						Take only the amount of game you use, regardless of the limit.
I. Game animal harvest limits are random numbers picked by the state's regulatory agency.						Game animal harvest limits are based on the careful counting or game conducted by the state's regulatory agency.
J. While boating, children are in the most danger of drowning.						While boating, everyone is in equal danger of drowning.
K. Some fish (Carp, Gar, Hard heads) have importance in the ecosystem.						Some fish (Carp, Gar, Hard heads) should be thrown on shore to die.
L. Purchasing a hunting or fishing license is a good way to contribute to wildlife management efforts.						Purchasing hunting or fishing licenses is not necessary to fund wildlife management efforts.

	1	2	3	4	5	
M. Learning to operate a personal watercraft safely is less difficult than learning to operate a motorboat.						Learning to operate a personal watercraft safely is more difficult than learning to operate a motorboat.
N. A group of women should not go camping by themselves.						A group of women should take every opportunity to go camping by themselves.



7. Are you Male \_\_\_ or Female \_\_\_
8. What is your year of birth? 19\_\_
9. What is your race/ethnicity? White\_\_\_ Black \_\_\_ Asian \_\_\_ Hispanic \_\_\_ Other \_\_\_
10. What is your marital status? (Mark one)  
 Single \_\_\_ Married \_\_\_ Divorced \_\_\_ Separated \_\_\_ Widowed \_\_\_
11. Which of the following categories best describes the place you live now? (Mark one)  
 \_\_\_ On a farm or ranch  
 \_\_\_ In open country but not a farm or ranch  
 \_\_\_ Community with fewer than 2,500 people  
 \_\_\_ Community with 2,500 – 10,000 people  
 \_\_\_ Community with 10,001 – 50,000 people  
 \_\_\_ Community with 50,001 – 250,000 people  
 \_\_\_ Community with 250,001 or more people
- 11B. What is your zip code? \_\_\_\_\_
12. What is the highest grade or level of education you have completed? (Mark one)  
 \_\_\_ None  
 \_\_\_ Less than High School  
 \_\_\_ High school graduate or GED  
 \_\_\_ Military or trade school  
 \_\_\_ Some college  
 \_\_\_ College graduate  
 \_\_\_ Master's degree  
 \_\_\_ Ph.D.  
 \_\_\_ Professional (law, medicine, veterinarian)
13. What was your approximate total household income before taxes in 1997? (Mark one)  
 \_\_\_ Less than 10,000  
 \_\_\_ 10,000 – 19,999  
 \_\_\_ 20,000 – 29,999  
 \_\_\_ 30,000 – 39,999  
 \_\_\_ 40,000 – 49,999  
 \_\_\_ 50,000 – 59,999  
 \_\_\_ 60,000 – 69,999  
 \_\_\_ 70,000 – 79,999  
 \_\_\_ 80,000 – 89,999  
 \_\_\_ 90,000 – 99,999  
 \_\_\_ 100,000 – 109,999  
 \_\_\_ 110,000 – 119,999  
 \_\_\_ 120,000 – 129,999  
 \_\_\_ 130,000 +

Comments Section:

APPENDIX B  
NONRESPONSE TELEPHONE QUESTIONNAIRE

Hi, may I please speak to..... Hi....., my name is ..... and I am a graduate student at Texas A&M University. I have been contracted by Texas Parks and Wildlife to evaluate four of its educational programs through a questionnaire format. In my records from Texas Parks and Wildlife, I see that you have participated in at least one Becoming an Outdoors Woman program. I am hoping that you will let me ask you a couple questions about the BOW program, which will only take about 5 minutes of your time. If yes...

First, did you receive a questionnaire in a large white envelope with cartoons entitled Outdoor Education Program Evaluation in February?

Did you open it? \_\_\_ Did you fill it out? \_\_\_

**If NO**

May I ask what stopped you from doing so?

Is there anything that could have been added to the questionnaire to encourage you to complete it?

**If YES**

What encouraged you to return the questionnaire?

**BOW**

Do you feel that the BOW program influenced your desire or provided encouragement for you to participate in outdoor activities?

Do you feel that the BOW program increased your knowledge and skills in outdoor activities?

Are there any comments that you would like to make about the BOW program?

**TPW**

As I said earlier, Texas Parks and Wildlife is responsible for providing the BOW program. Can you tell me of any other Texas Parks and Wildlife activities or functions?

**If didn't attend a BOW, I will thank them for their time.**

APPENDIX C

QUESTIONNAIRE RESPONDENTS' COMMENTS

## 1999 Questionnaire Respondents Comments

BOW is great

- Becoming an Outdoor Woman and TX Parks & Wildlife - Urban programs are important in educating Texans to use and respect our natural resources. My family & I take part in more outdoor activities because of these programs.
- BOW has made me more aware of the wonderful opportunities available. Also has given me more in common with my sons and more activities to share with them.
- Becoming an Outdoors Woman is a great program and a good venue for women to enjoy learning outdoor activities
- Love Becoming an Outdoors Woman! Need something for men, couples & families now!
- Keep those Outdoor Woman activities and events! They're Great!
- Becoming an Outdoor Woman is an excellent program. Keep the Advanced BOW and other special interest programs Coming!!!
- Keep up the women outdoor activities
- Outdoor Women's Workshop was on of the best outdoor experience I've had and I gained confidence and knowledge, However, I still need more such experience before I will be confident enough to go on my own.
- I have attended several BOW weekends & have really been impressed by the level of knowledge & commitment of the instructors. I think more should be done to support & promote the program including the purchase of equipment specifically designated to the BOW program.
- I completed this form while camping (30 degrees low - 70 degree high) perfect weather. I became interested in the outdoors after my husband saw an ad in the newspaper for Becoming An Outdoors Woman - I attended 2 and loved them.
- Cannot remember the year I participated in Becoming an Outdoors Woman. Was a few years ago - really enjoyed it.
- Enjoy Becoming Outdoor Woman and want to participate in more Advanced BOW events
- I'll attend my second BOW in Texas shortly. I've attended 6 BOW's in Louisiana. I live in Louisiana so not helpful with your Q2. Could probably guess some answers but your instructions say don't answer if don't know.
- The Becoming an Outdoors Woman programs are great fun, as well as being very educational - handled very well. Enjoyed them very much & learned a great deal.
- Outdoor Women is a wonderful pgm Only wish I had more time + \$ to go. More people should be able to take advantage of the pgm.
- I thoroughly enjoyed camp and am more interested in outdoor activities now than I was before. Am particularly interested in birding and shooting range.
- I took fly fishing & flytying, canoeing & kayaking at the outdoor woman seminar; I really enjoy fishing, have a license and hope to purchase a kayak this year to do more fishing.
- I took Basketweaving, dyeing with natural subotances, first aid, canoeing Next time outdoor photos, sailing
- T.O.W.N. is the greatest I hope they will soon have outings that include your child.
- Becoming An outdoors woman workshops are a great opportunity for women to learn about the outdoors.
- I loved the Becoming an Outdoors Woman at Waldemar. I learned what a network there is to help me in a variety of outdoor skills. I particularly liked the bird-watching & plant i.d.

walks with Noreen Damude. I did this more as a vacation than as a way to start a new hobby.

- Instructors on BOW were great! I thoroughly enjoyed Camp Balcones Spring last Aug ('98) Plan on going every year and doing more outdoor activities.
- I thoroughly enjoyed the BOW experience and plan to participate again in the future.
- The Tx Parks & Wildlifes Outdoor Womens Program is great! Thanks for providing it. I'd like to see one for kids...that is hands on & held w/ a womens program a family program.
- I enjoyed Being a Out Doors women, and attending the workshops. Thanks goes to Debbie Bunch for keeping it going. Angie Obanan. I do boat/camp/fish with my 7-year-old son.
- BOW is a great program + is very important for women + their children I hope it continues for many years.
- Becoming An Outdoors Woman Program is GREAT!
- LOVE THE OUTDOOR WOMENS OPPORTUNITIES!
- The "Becoming An Outdoor Women" Program is a fabulous opportunity to learn about wildlife and our environment. TX Parks & Wildlife should be commended for their efforts and support!
- I love the Outdoors women programs. Would like to see something similar for teenagers (both male and female).
- The Texas Outdoors women event was the most unforgettable weekend of my life. It was at the HEB Camp in Leakey and worth the trip & the money. I would recommend it to all women.
- "Becoming an Outdoors Woman" Programs have given me the confidence I needed to try hunting & fishing.
- I loved the Becoming an Outdoors Woman programs. It was very educational and fun!
- Lot's of fun. I wish I could do it again. A real winner. Thanks wildlife department.
- Enjoy the Outdoors Woman Program very much.
- I've attended 4 Becoming an Outdoors Woman seminars. All have been excellent learning experiences and opens opportunities for me to explore more of what Texas has to offer outdoors.
- BOW is a great program!!
- All my outdoor education programs have been through "Becoming an Outdoors Woman". (Texas & Okla.) GREAT PROGRAM!! - They are mini crash courses, but give you a taste of the sport. - I am a sailor. We need more regulations on the lakes of Texas.
- Becoming An Outdoors Woman has given me, through careful instruction, more confidence in the handling and driving of my boat. Plus because I am around other women, I do not feel pressure learning as I would around men.
- I enjoyed the "outdoors Woman" experience very much. I hope to participate again sometime.
- I was so excited about going to my outdoors woman program in '93. I was newly married to the quintessential outdoors guy and thought I'd be prepared to keep up with him. However, 2 babies later, I rarely get out of the house! This explains my answer to question 3 a-c.
- Please continue these programs. They are most informative and really lot's of fun. I would like to see more women and whole families involved, too. Your programs are better each year. Thanks. Thanks for helping to save our wildlife too.
- These should be more frequent + less expensive + easily accessible events to go to for women to encourage them

- Becoming an outdoors woman + Texas Outdoors woman network are the best things that I have ever been involved in. I started a network here in Arkansas that is now a non-profit corporation that supports women in the outdoors!!!
- Programs for women are Great! It's about Damn Time! Thanks -
- The BAOW program has introduced new interests and given me the tools to experience many things from kayaking Matagorda Island to trail riding in the Caprock. I will continue to explore Texas and the outdoors the rest of my life.
- Enjoyed BOW have not been able to participate in follow up activities but still plan to in the future.
- One of the best programs to come along is the Becoming an Outdoors Woman program. The main reason I haven't continued participating in programs is no buddy. However, my family has given me a fishing rod and reel. I guess I need to strike out alone.
- When Becoming an Outdoor Woman has a class at Camp Tyler again, I'd like to be there.
- The Becoming an Outdoors Woman session I went to was in Tyler Texas at Camp Tyler. If it is held there again I would go in a heartbeat.
- I had a great time on my Becoming an Outdoor Women! I will definitely be doing another one!!
- I think BOAW is a fantastic program - it has made an incredible difference in my life! Thank you!
- Outdoors woman would've helped me be more involved with camping and canoeing if I wasn't already active with local organizations - good program.
- Sorry I couldn't complete this sooner but its my busy time till 2/28. Thanks for your patience. My daughters and I have enjoyed and benefited from the several BOW workshops we attended.
- Becoming An Outdoors Woman is a great program. and the wildlife expo - what a treat - what would we do without TPWD?
- I am a hunter, boater, and angler ed instructor. Plus - I teach at the Becoming an Outdoors Woman program at least 3 times a year - I am also very active in the boy scout (venturing division) and a founder of the Texas Outdoors Woman Network and life member of NRA - and member of TSRA and Women Shooting Sports Foundation.
- Outdoors Woman was a wonderful experience and I recommend it highly, plan to get involved again soon. Thank you for the opportunity to broaden my personal horizons, I am a better person because of these experiences and long for others to know the same things.  
Donna Ziccardi - 972-380-5660
- The becoming an outdoor woman program is great. It has introduced many ladies to the out of doors, camping, fishing, hunting, canoeing, nature, etc. In the past I have taught outdoor living skills of the American camping association. Been there - Done that!
- Becoming an outdoors woman is by far the most rewarding program I have ever participated in!
- Becoming an Outdoors woman is an excellent program for women - very educational and informative.
- Becoming an Outdoors Woman is a terrific program. Debbie Bunch & Karl Cloninger of TxDPW, do a great job.
- Because of the BOW program, I now teach at BOWs, have become a Hunter Education Instructor, Muzzle-loading Instructor & Level I Shotgun Instructor. I pass on this knowledge to my son, particularly safe handling of firearms.

- I've loved the outdoors woman program and go every chance I get - it is expensive for me though. I also wish I knew more after doing this survey and had more opportunities to get out amongst the wildlife and in the parks.
- Outdoor woman program is the best thing that I've ever been involved in. If not for it I would never have experienced some of the things I've done. I recommend it to everyone I know. Can't wait for next one.
- I enjoyed my "Becoming An Outdoor Woman" classes! I would like to take the boater safety class as well as fishing and bird watching. Hunting is not for me. ;-). Thanks for sponsoring this program!
- I am no longer a member of the Texas Outdoors Woman Network. I've given up membership since I had my child in 1997. It was a wonderful and educational opportunity for me. My intentions are to return to the group once my child is a little older!
- Not only have I become more active in the outdoors, but as a result of my participation in BOW, my husband and daughter and friends have joined me. In addition, we have spent more of outdoor permits/licenses and sporting equipment than ever before. I have joined my local TOWN group and North Texas Orineteer Assoc. (NTOA) and participate monthly.
- I enjoyed the Becoming an Outdoors Woman seminar that I attended in 1997, and hope to attend more when our baby daughter gets a little older. My husband and I look forward to spending lots of time outdoors with her as she grows. Thanks for including me in your study.
- Becoming an outdoor woman is one of the best programs I have ever participated in. I would go to many more if possible. I think the park and wildlife do a superb job for Texas. "Expo" is a time my grandchildren look forward to each year. I hope more money can be allocated to this great organization!
- Especially enjoyed the Birdwatching lecture and field trip on my outdoors woman weekend. Instructor was great - I am pursuing more birding opportunities /training because of this great program - met nice people too!
- I thoroughly enjoy going to "Becoming an outdoors woman" workshops. I've learned a lot and I enjoy meeting the instructors and the women who come to participate in learning also.
- Would like to have more shotgun shooting programs, like 5-stand skeet sporting clays.
- Have always been an outdoor person from 8 or 9 years old, but going to becoming an outdoor woman has added so much to my skills. Kayaking has become a favorite.
- BAOW has done more for my interest and participation in fishing & canoeing than any other outdoor experience. The training we received was excellent from instructors who knew their sport well and transmitted their love for it enthusiastically. I have already begun planning our next all women's canoe trip. We Love It !
- I enjoyed "The Outdoor Women" program very much. I hope to go to another one in the future.
- Becoming an outdoors woman is a wonderful way to learn activities that women wouldn't always have the opportunity to learn.
- I love the Outdoor woman program!
- BOW is a great class! My mom and I have taken several together and really enjoy the time together.
- I think the BOW program is an outstanding program; especially for women who live in cities. I live in the "Boonies" but enjoy the program very much.
- I went on the outdoor womens weekend trip soon after moving to Texas so I know little about the various agencies - hopefully to become more familiar with Texas meet people...I



also had just had a baby and this has restricted me from participating in more trips which I hope to do in the future.

- Becoming An Outdoors Woman is a great program. It helped me feel comfortable trying things I would not otherwise have tried.
- I participated in the Outdoor Women program for fun. Most rules & regulations about hunting and fishing are un-known to me.
- I enjoyed the "Becoming an Outdoors Woman" and hope to attend more camps!
- I really enjoyed the phase 2 hunting trips that Becoming an Outdoor woman has for us.
- I was pleased with the Becoming an Outdoor Woman Program. You could go to several classes and they were short enough to get a feel for doing activities on your own or with a companion.

#### BOW negative comments

- Learning to fish was the single most important reason I attended BOW weekends. The level of instruction has been disappointing. Also I find BOW personnel very disorganized.
- I think the Outdoor Woman Program is great for citified and suburban women who haven't a clue about the outdoors. I needed more advanced and challenging courses, but I think it is great for the other ladies.
- I was not impressed by the TPWD Becoming an Outdoors Woman program I participated in. However, I do support the studies and conservation efforts at TPWD. My biology classes at Texas A&M – Corpus have had more of an influence on my outdoor activities and education.

#### Miscellaneous BOW comments

- I attended an Outdoor Woman Workshop in Texas. I am, however, an Oklahoma resident.
- I have not been in Texas but 1 yr. I am still trying to learn about Texas outdoors. I am single and interested in single groups activities.
- Most of my outdoor experience/training has been through Boy Scouts of America.
- I haven't been able to participate much this past year because of no transportation and involvement in church activities. Plan to try to be more involved this coming year.
- I have never participated in any of the outdoor programs. I was registered once and then cancelled due to a death in my immediate family.
- I have not attended a workshop. Plan to attend one this spring – Carolyn Lowe.
- I haven't yet done a Phase I BOW program. I hope to this year.
- I got my son in 4-H Shooting Sports this year!
- Women are careful hunters as a rule. Less bad habits because we learned later in life.

#### Positive Questionnaire Comments

- Interesting, Thank you
- Thanks!
- Thanks for your interest.
- I think this survey is a great way of getting info on what people know. They should have them more often.
- This survey is very beneficial it would help wildlife department better know their education courses.
- Thanks for asking!

### Negative Questionnaire Comments

- Don't stereotype women – high heel shoes in the outdoors? What are you thinking? This is an insult!!
- Dispose of sexually oriented questions!!
- I don't think four questions and my responses will determine how the outdoor programs I participated in accomplished their goals and purposes. I also participate in outdoor programs hosted by local community colleges. Local nature centers and by personal choice.
- I am a little concerned that the section asking for viewpoints would not represent actual opinion options – not all are polar opposites.
- Dr. Adams, surely it has occurred to you that you unsolicited survey is junk mail to some of us. Especially, perhaps, to those of us in the world of free enterprise. Thanks – but no thanks – Sabina Neal
- I don't see how this survey directly reflects attitudes or behavior from attending a BOW program, nor the other outdoor ed listed programs. It didn't seem to have the questions reflect attitudes/behaviors obtained from the programs/activities versus behaviors/attitudes possessed before participation in these activities.
- Some of the questions that I answered were what I would really do – not what I would do from what I learned in a course
- Some of the questions cannot be answered if one does not have the knowledge or experience. If you are doing a controlled “experiment” you have failed because of the guessing you are requiring from those you are questioning. Therefore, your results will only be founded on assumptions and not legitimate knowledge. Your conclusions will be poorly backed up.
- How in the world am I supposed to know fishing/ hunting laws with out taking a course? Stop asking people questions about stuff they don't know.

### Questionnaire Suggested Changes Comments

- N section 6 I didn't fully understand what you are trying to accomplish. To get a better feel for the question you should have considered more strongly...Agree 12345 disagree
- Question D on page 3 is hard to answer the way it is stated. I teach for BOW and I still take classes – Instructors are brought in outside of the organization as to their expertise.
- Page 1 – the questions were not clear to me. And q 13 on page 8 what's that got to do with this survey?
- Page 4 is hard
- This is too long
- #13 none of your business
- Make the survey shorter and easier to understand
- Item #5 only addresses theoretical behaviors in my case – only 2 items on the list have ever or might even potentially have been issues for me.
- We have a ranch in the country and a home in Houston for 11A
- Section 6 page 7 question N – as long as women know the rules and laws they should be able to do anything men can!!
- Confusing questions. For example, if you throw a gar on the shore to die and a great blue heron eats it, isn't that important to the ecosystem?
- My answers related to fishing/hunting/other water sports were based largely on learning from weekend camp I attended with outdoors woman's group not from personal experience. I wouldn't have been able to answer many before this.

#### Questionnaire Curiosity Comments

- I want to know the correct answers on page 4. I am in the field of permaculture and loved my reintroduction into the great outdoors via BOW!
- Dr. Adam's I would like to know about the result's of this survey. I will write a letter separate asking for the result's please sent them – an interested hunter.
- I would be interested in knowing the correct answers to the questions in this survey.
- Will this be published for public knowledge?
- I would like to see the analysis.

#### Miscellaneous Questionnaire Comments

- This may not be very representative of your participants as I only participated in one program while visiting my daughter in Austin. I did enjoy the program very much and was impressed with the instruction and organization.
- I may live in a city, but I love camping, hunting, fishing, taking pictures of wildlife, horseback riding, and one of my family members owns a ranch in Tularosa, NM.

## VITA

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## Personal Information

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