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CONNECTING WV FEE-FISHING BUSINESSES WITH THE LARGER TOURISM  
MARKET THROUGH THE DEVELOPMENT OF TOURISM PACKAGE

Zongxiang Mei

Thesis submitted to the  
Davis College of Agriculture, Forestry, and Consumer Sciences  
at West Virginia University  
in partial fulfillment of the requirements  
for the degree of

Master of Science  
in  
Recreation, Parks and Tourism Resources

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Morgantown, West Virginia  
2006

Keywords: Fee-fishing, Tourism Package, Market Segmentation

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# **ABSTRACT**

## **Connecting WV Fee-fishing Businesses with the Larger Tourism Market through the Development of Tourism Package**

**Zongxiang Mei**

There is substantial demand for fishing packages in West Virginia. Fee-fishing businesses in West Virginia are often characterized as small businesses, and they could benefit from connecting with larger travel packages that are more likely to attract out-of-state anglers. The objectives are: (1) identify mini-market segments based on fee-fishing experiences; (2) examine how fee-fishing mini-markets can better connect with the larger outdoor recreation markets; and (3) to use this information to identify gaps in recreational offerings and develop tourism packages in a West Virginia test market. Six fee-fishing mini-markets were identified. Regression analysis results indicate that it is possible to develop fishing packages that include other tourism activities through partnerships with West Virginia State Parks. A gap analysis was conducted. The development of additional tourism offerings and public/private partnerships can help address the gaps identified in the weaker markets.

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## TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
INTRODUCTION.....	1
Background.....	1
Study objectives.....	4
Hypothesis.....	4
Terminology.....	4
Significance of the study recreational.....	6
Limitations.....	6
Delimitations.....	7
Summary of the remaining chapters.....	8
LITERATURE REVIEW.....	9
Theoretical Background--Travel Motivation.....	11
Maslow’s need theory.....	11
Maslow’s needs and motivations in travel.....	12
Market Segmentation.....	13
Connecting experiences and activities.....	15
Recreation opportunity production process.....	15
Push-pull motivation framework.....	18
Linkage of experience of a single event with participation in activities throughout year.....	21
Conclusion.....	22
METHODS.....	23
Introduction.....	23
Method 1.....	23
Study sites.....	23
Sampling procedure.....	26
Data collection.....	26
Instrument.....	27
Treatment of data.....	28
Method 2.....	30
Test market in WV.....	30
Tourism information database.....	31
Gap analysis.....	32
Summary.....	32
RESULTS.....	33
Introduction.....	33
Survey participation and response rates.....	33
Socio-demographic Characteristics.....	34
Six Mini-markets.....	37
Factor analysis.....	37

Connecting West Virginia Fee-fishing Businesses with the Larger Tourism Market v

- Demographic information and differences among six mini-markets ..... 39
- Connecting with Larger Tourism Markets..... 49
- Gaps in the test market..... 53
  - Tourism information database ..... 53
  - Gap analysis of activities associated with each market segment in the test market . 54
- DISCUSSION ..... 60
  - Testing the Hypothesis and Addressing the Research Questions ..... 60
    - 1. What are the fee-fishing mini-market segments? ..... 61
    - 2. How can fee-fishing mini-markets better connect with larger outdoor recreation markets? ..... 61
    - 3. What are the gaps in recreational offerings associated with potential tourism packages in the Pipestem Resort State Park test market? ..... 65
  - Management Implications..... 67
    - Most promising tourism package in the test market ..... 67
    - Potential fishing packages through public-private partnership..... 67
  - Recommendations for Future Research ..... 69
  - Conclusion ..... 69
- REFERENCES ..... 71

## LIST OF TABLES

Table	Title	Page
1	Maslow’s needs and motivations cited in tourism literature.....	12
2	Socio-demographic Characteristics (Gender, Marital Status, Highest Education Level).....	36
3	Socio-demographic Characteristics (Age and Income).....	36
4	Factor analysis for recreation opportunity items.....	38
5	Mean scores and t-tests reported for experience domains by gender.....	39
6	Mean score differences among age categories for experience domains .....	40
7	Mean score differences among travel group categories for experience domains.....	42
8	Mean score differences among income categories for experience domains.....	44
9	Mean score differences among family status categories for experience domains .....	46
10	Mean score differences among highest education level categories for experience domains.....	48
11	Regression of secondary activities on fee-fishing experience mini-markets.....	51
12	Gap analysis of tourism offering at State Parks in the test market.....	58

## LIST OF FIGURES

Figure	Title	Page
1	Maslow's Hierarchy of Needs.....	11
2	Recreation opportunity production process.....	16
3	Family Fishing & Camping, Wendel, WV.....	24
4	Whispering Pines, Alum Creek, WV.....	25
5	Mill Run, Marlinton, WV.....	26
6	Tourism resources within 30 miles of Pipestem Resort State Park.....	31



## INTRODUCTION

### ***Background***

Fee fishing, a recreational activity that represents only one component of a much larger sector within West Virginia, is a popular kind of fishing in the United States. One sector which contributes significantly to the economic development of the state is the travel and tourism industry. Fee fishing involves paying a fee for the privilege of fishing a private pond where fish populations are enhanced by stocking fish (Cichara, 1982). There are over 35 fee-fishing businesses that exist in West Virginia (WV), and they contribute to the tremendous economic benefits associated with fishing activities. From the economic impact analysis of American Sport-fishing Association, American anglers spend \$41.5 billion in retail sales and generate \$116 billion in economic benefits for the nation each year. And through fishing license sales and special taxes on equipment, hundreds of millions of anglers' dollars go right back to states each year for local conservation and recreation.

When compared to fishing in public waters, fee fishing at ponds brings more convenience to a wide range of anglers such as out-of-state travelers, families, handicapped anglers, inexperienced anglers, and people who want higher catch rates. In addition, this style of fishing brings more revenue to pond owners than farming fish for sale.

However, many of the fishing related tourism providers are small and may lack the critical mass to attract out-of-state anglers to their sites as primary destinations. The average pay pond dimension in West Virginia is a half of an acre. Usually pay

pond owners do not have the professional knowledge or experience to operate the ponds as professional recreational destination. How, then, can pond owners better satisfy the needs of anglers and develop their fee fishing business opportunities in such a way to have the greatest benefit to the rural economy in West Virginia?

Wilson, Fesenmaier, Fesenmaier and Es (2001) conducted a study to identify and examine factors that have helped rural communities successfully develop tourism and entrepreneurial opportunities. They applied a focus group methodology to obtain in-depth information describing community leaders' and business persons' attitudes and perceptions of the process of tourism development. The focus group results suggested that the most important factors for successful tourism development in rural areas involve the development and promotion of the complete tourism package, good community leadership and so on.

The development of fishing package through public-private partnerships can help attract visitors from a larger region if such packages afford higher quality and more eventful experience opportunities. For example, higher catch rates and more recreational activities can contribute to more eventful fishing packages. Better customer service and larger fish sizes can contribute to improved quality. However, for each of those production factors, several constraints exist (e.g., heavy fishing pressure on public water, unequal fishing effort at highly accessible stocking locations, declining average fish sizes and catch rates, and lack of marketing) in the market creating difficult challenges for individual tourism providers (Finn & Lommis 2001; Radomski, Grant, Jacobson, & Cook, 2001).

Furthermore, West Virginia Division of Tourism and Natural Resources developed a 5 year strategic plan (2003-2007), which emphasized the importance of hunting and fishing. The goal is to increase the impact of nature-based tourism on the West Virginia economy. There are several strategies that are being considered such as featuring wild trout fishing (Blackwater Canon, brook trout, C&J's), better linking with Trout Unlimited, targeting mid-Atlantic and southeastern states; featuring smallmouth float fishing (New, Greenbrier, South Branch Rivers); and featuring Ohio River fishing opportunities. A way to benefit from more market segments is to develop pay pond anglers' travel package in West Virginia.

There appears to be substantial demand for fishing packages in West Virginia. Logar, Mei, Pierskalla and Semmens (2003) conducted a survey of potential WV tourists. They found that only 9 percent ( $n = 496$ ) of visitors participated in a travel package to West Virginia. However, just 26 percent of them would not like to visit West Virginia and take part in recreational packages. The situation is that most visitors prefer to participate in a travel package but they had little experiences in West Virginia. In addition, from their survey, 49 percent of respondents desire fishing or fishing lessons as part of a package. Most travel as family (72%) and desire overnight accommodation as part of the package (85%). Clearly, the family fishing package would currently provide at least a significant market segment in West Virginia.

Fee fishing involves several mini-markets, wherein businesses are small and often lack the critical mass to attract out-of-state anglers to their sites as primary destinations. The development of fishing packages that include other outdoor tourism activities through partnerships with WV State Parks can help private landowners better

connect with major markets and attract visitors from a larger region. The purpose of this study is to identify those fee-fishing mini-markets and better understand how to package the fee-fishing experience so as to help the mini-markets prosper in West Virginia.

### ***Study objectives***

1. To identify mini-market segments based on fee-fishing experiences;
2. to examine how fee-fishing mini-markets can better connect with larger tourism markets; and
3. to use this information to identify gaps in recreational offerings and develop tourism packages in a West Virginia test market.

### ***Hypothesis***

H0: There are no relationships between angler motivations to participate in a single fee-fishing event (mini-market) and his/her participation in other tourism activities throughout the year (major market) (multiple regression,  $p < .05$ ).

H1: There are relationships between angler motivations to participate in a single fee-fishing event (mini-market) and his/her participation in other tourism activities throughout the year (major market).

### ***Terminology***

In order to clarify the meaning of language used throughout the paper, the following terms are defined.

1. Fee fishing- Fee fishing involves paying a fee for the privilege of fishing a private pond where fish populations are enhanced by stocking fish (Cichara, 1982). Because fee fishing generally occurs on private land, a state fishing license is not required to fish at a pay pond.
2. Travel package- all-inclusive tours, often with flight transportation, all with limited flexibility, and with the same purpose. For example, they have a number of common characteristic features such as being effective, safe, and less expensive, in comparison to buying a flight and a hotel stay separately, and individually (Enoch, 1996). The European Union suggested that the travel package includes at least two of the following services offered for sale at an inclusive price: (1) flight transport, (2) accommodation, (3) guides, (4) activities, and (5) food (HMSO, 1993).
3. Segmentation- the process by which people with similar needs, wants, and characteristics are grouped together so that an organization can use greater precision in serving and communicating with its chosen customers (Mill & Morrison, 1992).
4. Mini-market- refers to the angler's day use of a fishing site (or localized fishing events) in three selected pay pond locations in West Virginia.
5. Major-market- refers to angler participation in a wide range of outdoor recreation activities throughout the year.

### ***Significance of the study***

This study will contribute to a better understanding of the relationships that exist between pay pond anglers' experiences and the tourism activities they would attend as part of a larger market. There are thirty-five or more fee-fishing businesses in West Virginia that make up the mini-markets and they are often characterized as small businesses; they may lack the critical mass to attract out-of-state anglers to their sites as primary destinations. The development of fishing packages that include other tourism activities through partnerships with West Virginia State Parks can help private landowners better connect with major markets and attract visitors from a larger region. Developing such tourism packages is also a good way to help West Virginia State Parks attract more travelers, better satisfy customers' demands, postpone traveler's stay time, and in the end, contribute to a larger portion of the West Virginia tourism industry.

### ***Limitations***

The first phase of this study was limited to pay pond anglers surveyed in three private pay pond locations in West Virginia during the summer of 2002. Only three locations were selected given the time restrictions and the scope of the study, although there are over 35 pay ponds in West Virginia. By design, the pay pond sites chosen for this study represented the biophysical, social, and managerial diversity of settings found in West Virginia. Purposively selecting different types of business makes it more valid to generalize results to a broader population of fee-fishing anglers in West Virginia.

The sample size associated with phase one of the study was limited by the number of customers visiting the study sites during peak season months. As the aforementioned background to the problem suggests, fee fishing operations in West Virginia are often small scale businesses that are not well marketed. As a result, the volume of customers visiting fee-fishing sites is usually low making it difficult to achieve a large sample size.

### ***Delimitations***

Since the first study phase occurred at pay pond locations, the focus of this study is delimited to fee-fishing, which includes fishing activities in private water but not public water. Also, the anglers in this study may not have purchased a fishing license to fish in public rivers or lakes. The second study phase is delimited to a thirty mile radius of Pipestem Resort State Park. Only those activities marketed by five State Parks in our test market were examined. Other activity opportunities may exist in the area, but they were not included in the gap analysis if they were not marketed.

There are a wide range of market segmentation variables that could be used to divide any mass market into more homogeneous groups (e.g., demographics, psychographics, behaviors, lifestyle, economic benefits and experiences). The only variables used to develop fee-fishing market segments in this study include visitor motivations and participation in tourism activities. The motivation variables were chosen from a combination of sources including one angler study conducted at private fee-fishing operations in Texas (Whitney, 1992) and two studies of anglers recreating on public water (Brooks, 1990; Richards, Wood, & Caylor, 1985).

### ***Summary of the remaining chapters***

Based upon the need for and purpose of the study outlined in the introduction, the following chapters address the components of the study. The remaining chapters specify the conceptual framework used to carry out this study, describe the method in detail, report results, and discuss the implications of the findings. The conceptual framework is based upon Brown's (1984) recreation opportunity production process and market segmentation. The method chapter details factor analysis, multiple linear regression and gap analysis. The results of the study are reported including the experiences of mini-market and their linkage with major-markets. The discussion ties all of the components of the study together, and suggests some of the practical applications of the study especially in a West Virginia test market consisting of a 30 mile radius from Pipestem Resort State Park.



## LITERATURE REVIEW

This study has three objectives: (1) identify mini-market segments based on fee-fishing experiences desired by anglers; (2) examine how fee-fishing mini-markets can better connect with larger tourism markets, and (3) use this information to identify gaps in recreational offerings and develop tourism packages in a West Virginia test market. Considering that motivation is a popular segmentation variable in marketing and management, Maslow's hierarchy of needs theory will be used as a general theoretical framework to the study problem and objectives. More specifically, push-pull motivation theory and the recreation production process will be presented to demonstrate how market segmentation is used to better understand tourism and tourism markets.

Based on Maslow's hierarchy of needs model, people have different requirements from lower-level to higher-level needs, from physiological needs to psychological needs. Once people get satisfied from the lower-level needs, his/her requirement would turn to the higher-level one. Furthermore, with different levels of needs like the feeling of safety or belonging, there are corresponding travel motivations of the travelers like the need for achievement, escape or love.

Two theories supporting the linkage between beneficial experiences and activities are presented to provide support for the linkage between fee-fishing mini-markets and larger tourism markets. The recreation opportunity production process is a theory somewhat related to Maslow's hierarchy of needs, and it is more applicable to outdoor recreation management. On the other hand, push-pull motivation framework is more widely used in tourism research. Both theories connect experiences and benefits (input or

push factor) with the attracting factors of a recreation area such as activity and service opportunities (output or pull factor). The reason for introducing two similar theories is that this thesis applies the findings of fee-fishing recreational mini-markets (outdoor recreation markets) to larger markets (tourism markets). That is, it examines both outdoor recreation and tourism behavior. Current research on connecting mini-markets with larger tourism markets is presented in this chapter. However, there are no studies that specifically connect fee-fishing mini-markets with the larger tourism market.

## ***Theoretical Background--Travel Motivation***

### **Maslow's need theory**

Maslow's hierarchy of needs model is commonly utilized in tourism research. As is widely known in the field of psychology, he suggests that individuals experience a number of needs which range from the basic physiological requirements of survival to higher needs which deal with individual achievements and satisfactions. This hierarchy suggests that lower-level needs demand more immediate attention and satisfaction before a person can focus more completely on attaining the higher-level needs. Thus, a person lacking proper nutrition for long periods of time is predicted to be motivated only by the requirement of food. Under such circumstances, higher-level needs such as self-actualization do not substantially influence the individual. Mill and Morrison (1992) suggested that Maslow's hierarchy of needs model might be better presented as a series of nested triangles (Figure 1). This representation emphasizes the fact that higher-level needs (e.g., S-A or Self-Actualization) encompass all lower-level needs. It also illustrates the relative size of each need better.

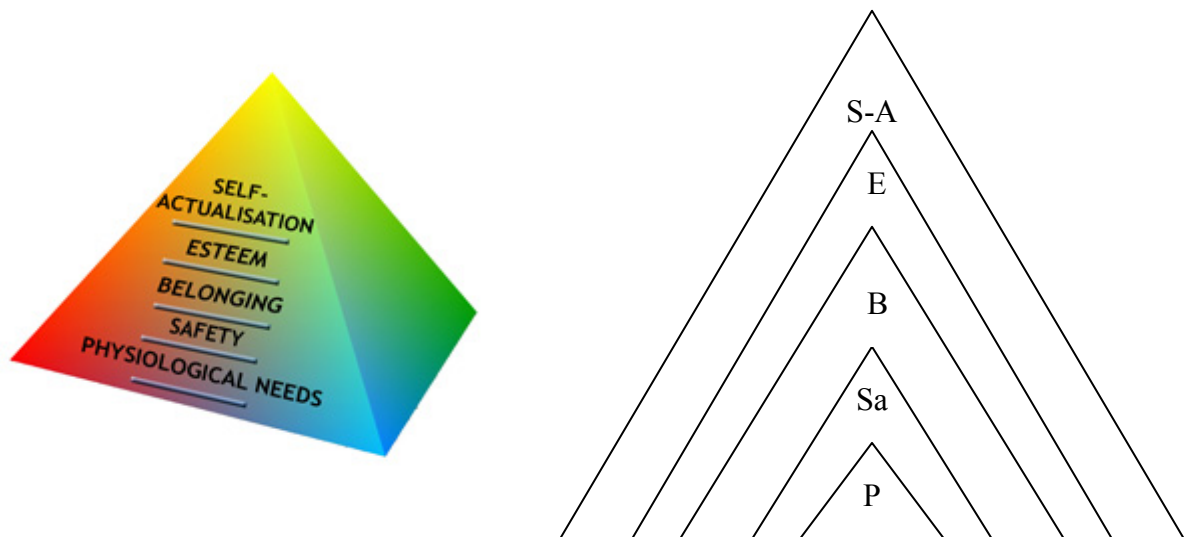


Figure 1: Maslow's Hierarchy of Needs

### Maslow's needs and motivations in travel

Within Maslow's hierarchy of needs, the lowest level is physiological needs, and the other four are psychological needs. Mill and Morrison (1992, p. 20) developed a table summarizing the tourism literature for various needs and motivations (Table 1).

Table 1 Maslow's needs and motivations cited in the tourism literature

Need	Motive	Tourism Literature References
Physiological	Relaxation	Escape Relaxation Relief of tension Sun lust Mental relaxation of tension
Safety	Security	Health Recreation Keep oneself active and healthy for the future
Belonging	Love	Family togetherness Enhancement of kinship relationships Companionship Facilitation of social interaction Maintenance of personal ties Interpersonal relations Roots Ethnic Show one's affection for family members Maintain social contacts
Esteem	Achievement status	Convince oneself of one's achievement Show one's importance to others Prestige Social recognition Ego-enhancement Professional/ business Personal development Status and prestige
Self-actualization	Be true to one's own nature	Exploration and evaluation of self Self-discovery Satisfaction of inner desires

## ***Market Segmentation***

Market segmentation refers to the process by which people (or visitors as is the case in this study) with similar needs, wants, and characteristics are grouped together so that an organization (or fee-fishing business or State Park) can use greater precision in serving and communicating with its chosen customers (Mill & Morrison, 1992). With increasingly competitive consumer markets and rapidly changing consumption patterns, scholars have conducted several studies to provide marketing information to those producing products such as opportunities to experience outdoor environments or tourism packages (Yaman & Shaw, 1998). Customer segmentation is one of the most important data mining methodologies used in marketing and customer relationship management (Saarevirta, 1998). Market segmentation has not only evolved as a technique to segment markets and identify target markets, but has also been used to further assist marketing strategists understand the relationship that exists between destinations and visitors (Bloom, 2004). However, in the field of public leisure service, Johnson, Tew, Havitz and Mccarville (1999) documented that there were as few as 5 percent of public leisure services that used segmentation across the range of their service offerings, and as many as 30 percent of those providers failed to segment at all. This is troublesome given the importance of conducting segmentation research. Not doing so can have negative consequences for both leisure service agencies (e.g., different agencies duplicating service offerings) and potential participants (e.g., specific populations being ignored) (Havitz, Dimanche, & Bogle, 1994).

Parks are important destinations for the increasingly popular activities of nature-based leisure travel and ecotourism (Butler & Boyd, 2000; Cole, 1996; Font & Tribe,

1999; Galloway, 2002; Taylor, 2000). Concerning tourism in parks, one challenge for park management identified in the literature involved the implementation of viable park marketing and planning programs (Galloway, 2002; Groff, 1998; Markwell, 1997). An understanding of park visitors is an important concern. Motivation-based segmentation can guide, for instance, the design of advertising messages, and the choice of activities, facilities, and information, for different groups of park visitors (Galloway, 2002).

In *The Third Wave*, Alvin Toffler (1980) warned that the “mass market has split into ever-multiplying, ever changing sets of mini-markets that demand a continually expanding range of options.” (p. 248) Segmentation is a process to develop and refine products and services (such as experience packages) to meet every segment’s demands and preferences. Segmentation variables are used to divide the mass market into more homogeneous mini-markets. Pennington-Gray, Fridgen and Stynes (2003) concluded that variables have been classified into four main areas: (1) demographics, (2) psychographics, (3) behavior, and (4) lifestyle. Usually segmentation variables are demographics such as age, gender, race, income, household size and education. Beane and Ennis (1987) argued that social-psychological variables have traditionally been underutilized in market segmentation. Pertrick, Backman, Bixler and Norman (2001) analyzed golfer motivation and constraints by experience use history (EUH). EUH was developed by Schreyer, Lime and Williams (1984), and has been utilized to create distinct, identifiable segments of users by examining their past behavior and experience levels (Williams, Schreyer, & Knopf, 1990). However, the literature does not provide clear direction when trying to reconnect mini-markets with major markets, especially when mini-markets lack the critical mass to attract a viable number of customers on their own.

A number of tourism researchers have indicated that the segmentation of markets in terms of both psychological and socio-demographic variables potentially enables a better discrimination between market members than does analysis in terms of only the latter (Galloway, 2002; Gladwell, 1990; Luzar, Diagne, Gan & Henning, 1998; Ryel & Grasse, 1991; Silverberg, Backman, & Backman, 1996).

### ***Connecting experiences and activities***

#### **Recreation opportunity production process**

Brown's (1984) recreation opportunity production process helps researchers and managers better understand their role in providing the essential outputs of recreation through the manipulation of activities and settings (Pierskalla, Lee, Stein, Anderson, & Nickerson, 2004). To understand the relationship among recreation opportunities, a common approach used by tourism providers involves management of tourism resources in terms of their potential to provide four types of recreation opportunities (activity, setting, experiences, and benefit opportunities). These four types of recreation opportunities define the visitor demand hierarchy. The two lowest levels (activities and settings) are the inputs that can lead to the production of certain recreation opportunities. The two highest levels (experiences and benefits) are the outputs of the production process.

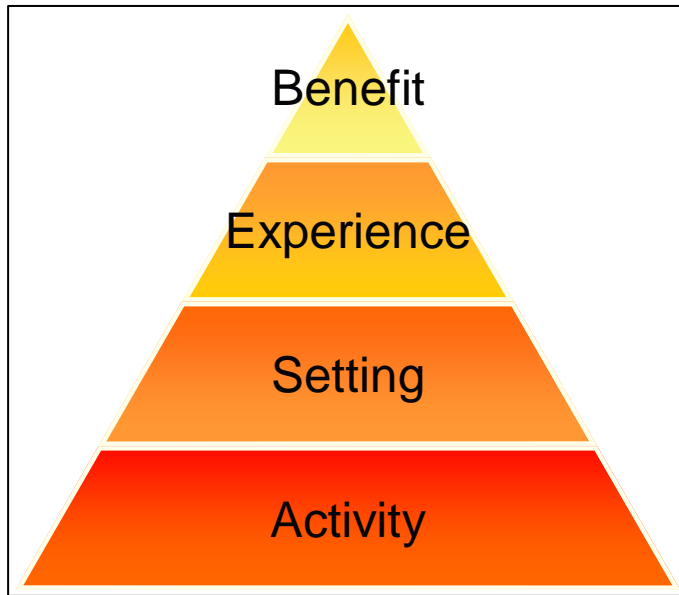


Figure 2: Recreation opportunity production process.

Driver and Brown (1978) and Bruns, Driver, Lee, Anderson, & Brown (1994) summarized these levels in the following way:

Level 1: Activities (e.g., wilderness hiking, family picnicking and camping) are considered the first level of the production process. It represents demands for activities themselves and has been the traditional focus of recreation research and planning. They are the behavior the recreationist or tourist undertakes in order to realize some sort of desired experiences and benefit. Although activities are considered the first level of the production process, managers sometimes consider them as the output of recreation management. When activities are viewed as the end product of management, providers are only focusing on the provision of basic resources, facilities, interpretive message, and other visitor programs and services that facilitate recreation activity opportunities (Bruns et al., 1994). An activity such as hiking can be undertaken in several settings with different environmental, social and managerial characteristics. Each of those



combinations represents a different recreation opportunity. Planners and managers who operate at this level engage in activity-based management.

Level 2: The recreation setting is a situational attribute of the recreation activity and plays an important role in outdoor recreation (Pierskalla et al., 2004). There are three types of setting preferences that define the environmental setting. They are physical setting (e.g., grass field), social setting (e.g., levels of crowding), and management settings (e.g., flat fee structure vs. variable fee structure). Settings are assumed to not only affect the next levels of outputs (e.g., experiences and benefits), but they also help to define what type of activities might occur in an area. People participate in recreational activities in different settings to realize desirable experiences.

Level 3: Recreation experiences are satisfactions, motivation, or desired psychological outcomes or states of mind (e.g., solitude, excitement, enjoyment of the outdoors, applying and developing skills, and risk taking) that are realized in environmental settings during recreation activities. For example, a recreationist might realize strengthening family ties by engaging in a fishing activity in a setting where there are facilities to support all family members. In this example, activity and setting opportunities are considered recreation inputs that are managed by recreation providers. Visitors use these managerial inputs to attain desired recreation experiences which are outputs. Typically, there are more than one experience sought and realized from recreation participation. When activity and setting opportunities are managed as a means to an end (e.g., experience opportunities), tourism providers are conducting experience-based management (Bruns et al., 1994).

Level 4: A benefit refers to a desirable or advantageous change of state or an improved condition that is realized by individuals, economies, society, or the environment (Driver, Nash, & Haas, 1987). Not only are positive recreation experiences (level three) considered benefits, but off-site (e.g., economic benefits and community pride) and long-term (e.g., improved physical health and increased ecological sustainability) benefits are also outputs of quality recreation management and should be considered as level-four outputs. Benefits are difficult recreation opportunities to measure because they flow from activities, settings, and experiences. For this reason, empirical studies of the behavioral approach to recreation have focused on level 3 (experiences) demands. Experienced-based management has been expanded to benefits-based management (BBM) by including these on-site, off-site, short-term, and long-term recreation benefits. The study presented in this thesis treats beneficial on-site experiences as a benefit.

### **Push-pull motivation framework**

In tourism research, the motivation concept can be classified into two forces which indicate that people travel because they are pushed and pulled to do so by factors (Dann, 1977, 1981). This push-pull framework provides a useful approach for examining the motivations underlying tourist and visitation behavior (Dann, 1977; Klenosky, 2002). Push factors refer to the tourists as a subject and deal with those factors predisposing him/her to travel (e.g. escape, nostalgia, etc). Pull factors are those which attract the tourist to a destination (e.g. sunshine, sea, or other setting opportunities) and whose value is seen to reside in the object of travel. Push motivations are more related to internal or emotional aspects such as the beneficial experiences desired. Pull factors are connected to

external, situational, or cognitive aspects (Yoon & Uysal, 2005). Push and pull factors have been characterized as relating to two separate decisions made at two separate points in time--one focusing on whether to go (push associated with travel motivations), the other on where to go (pull of setting attributes) (Klenosky, 2002).

Push factors have been conceptualized as factors that motivate or create a desire to travel. They are due to a disequilibrium or tension in the motivational system (Crompton, 1979; Dann, 1977, 1981; Iso-Ahola, 1982). Iso-Ahola (1982) suggested that it is a central basis in tourist behavior studies to identify motivation factors that are the reasons for and direction of behavior (e.g., escaping the city). He also mentioned two basic motivational dimensions as tourism behaviors, which were escape and seeking. They both simultaneously influence people's leisure behavior. The common push factors are "escape from everyday environment", "novelty", "social interaction" and "prestige" (Kim, Lee, & Klenosky, 2003).

Pull factors, in contrast, have been conceptualized as relating to the features, attractions, or attributions of the destination itself. Dann (1981) noted that once the trip has been decided upon, where to go, what to see or what to do (relating to the specific destinations) can be tackled. Usually the sea and sunshine, mountains and beautiful scenery, cultural resources, fishing locations, historical resources, beaches and so on are pull factors of a tourism destination. Turnbull and Uysal (1995) found six pull factors including "heritage/culture", "city enclave", "comfort-relaxation", "beach resort", "outdoor resources" and "rural and inexpensive". It is also important to note that activities and facilities (both inputs of the recreation opportunity production process) provided by tourism destinations are also pull factors.

Analytically, and often both logically and temporally, push factors precede pull factors in the decision making process (Dann, 1977). In contrast to this perspective, other researchers have suggested that push and pull factors should not be viewed as being entirely independent of each other but rather as being fundamentally related to each other (Klenosky, 2002)—and that there are relationships between what visitors desire and what the recreational destination affords. Uysal and Jurowski (1994) found that there is a relationship between push and pull factors. People travel because they are pushed by their own internal forces and simultaneously pulled by the external forces of the destination and its attributes (Cha, McCleary, & Uysal, 1995; Kim & Lee, 2002; Uysal & Jurowski, 1994).

***Linkage of experience of a single event with participation in activities throughout year***

A recreation experience is defined as the desired psychological result or outcome which motivates a person to participate in a recreational engagement or activity (Driver & Tocher, 1970). Managers have the ability to manipulate recreation settings (and the activity opportunities they afford) which can directly or indirectly influence recreation behavior that results in visitor-produced recreation experiences and benefits (Brown, 1984). Park managers can provide the social, physical and managerial setting characteristics to help visitors achieve their desired experiences, thus what managers produce are often considered as opportunities to experience.

However, Alvin Toffler (1980) stated as the Third Wave strikes, the mass society is beginning to de-massify. It has split into many multiplying and changing sets of mini-markets that demands a continually expanding range of options, models, types, sizes, colors, and customizations. That is, markets are becoming highly specialized.

Lehto, O'Leary and Morrison (2004) conducted a study to test the effect of prior experience on vacation behavior. One conclusion of their study is that prior experience is a strong predictor of activity participation patterns. The most frequent tourists to a site tended to have the most focused package of activity choices. As people's experience increased, they generally tended to narrow down their place and activity choices (i.e., become more place and activity specialized). Pomfret (2006) developed a conceptual framework to examine previous research on mountaineering, mountaineers, adventure, recreation and tourism, and applied this to mountaineer adventure tourists. While these investigations focus on the motives of mountaineers, it is suggested that they are also

important to mountaineer adventure tourists, given that tourism and recreation share similarities (Hall & Page, 2002; McKercher, 1996; Williams, 2003). These findings could be useful when interpreting some of the results of this thesis considering it reports a study that was conducted in West Virginia—a mountainous region.

## ***Conclusion***

Market segmentation by demographic, psychological or other variables is a trend in recreation and tourism research. Segmentation by motivation is one of the most frequently identified in the literature. Based on Maslow's hierarchy of needs, people have different levels of requirement in recreation and travel. Correspondently, there are different levels of motivations. In outdoor recreation, these different levels represent the inputs and outputs of the production process. And in tourism, the relationship between recreation opportunities is defined in terms of push and pulls factors. Realizing that there is a relationship between experiences and activities at different spatial and temporal scales, it seems possible to explore the relationship between small market segments (on-site fee-fishing experiences) and larger tourism markets (participation in recreation activities throughout the year). However, there is no such study that examines fee-fishing tourism packages in this way.

## **METHODS**

### ***Introduction***

To address the three objectives of this study, two research methods were applied. Method 1 identifies the fee-fishing mini markets that exist in West Virginia by examining the on-site fee-fishing experiences and off-site recreation activities that visitors' desire. Part of this method was reported in a thesis (Moldovanyi, 2004) and is summarized in this chapter. Method 2 involves a gap analysis of tourism activities that may compliment the fee-fishing mini-markets identified in Method 1 and offered at five State Parks within a West Virginia test market.

### ***Method 1***

There were both mail-back questionnaires and on-site interviews administered to visitors at three WV fee-fishing businesses in the summer of 2002. This investigation was conducted by Pierskalla, Schuett and Moldovanyi (Moldovanyi, 2004). Respondents evaluated 26 recreation experience opportunity items listed in the questionnaire as reasons for their visit. They also reviewed a list of 25 outdoor activities and checked (yes/no) those that they participated in during the last 12 months. (Moldovanyi, 2004)

### ***Study sites***

Fee-fishing provides anglers opportunities to pay a nominal fee for the privilege of fishing in private ponds or lakes where fish populations have been enhanced by the stocking of fish (Cichara, 1982). In West Virginia, over 35 pay pond establishments currently are in operation. This study was conducted at three fee-fishing ponds establishments. Sites were chosen for three reasons. The businesses had to be willing to

participate in the study, have an adequate sample of customers for data collection, and collectively represent a variety of biophysical, social, setting characteristics found within in the state.

The three sites include: Family Fishing and Camping, located in Wendel, WV, Whispering Pines located in Alum Creek, WV, and Mill Run Farm located in Marlinton, WV. The following describes the study sites in more detail.

Family Fishing and Camping is a large fee-fishing operation with 235 wooded acres near Grafton, WV including 10 ponds. Four of them range in scale between 1 acre and 1.5 acres in size. The following fish are stocked at this site: trout, shovelhead catfish (*Pylodictus olivaris*), catfish, largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*) and carp (*Cyprinus carpo*). Family Fishing and Camping also maintains hiking trails, primitive campsites, cabin rentals and RV/Trailer site rentals. Catfish tournaments are held during summer, wherein, anglers pay a daily fee to compete for cash prizes.



Figure 3: Family Fishing & Camping, Wendel, WV



Located in Alum Creek, WV, outside north of the capital city, Charleston, Whispering Pines fee-fishing area is situated at the mouth of a small valley. It is about 64 acres in size. It has a three-acre fee-fishing pond that is stocked with catfish, shovelhead catfish (*Pylodictus olivaris*) and brown trout (*Salmo trutta*). During the time of this study, channel catfish (*Ictalurus punctatus*) and blue catfish (*Ictalurus furcatus*) were the primary species made available to customers. Anglers pay a fee to compete in fishing contests that take place in the late afternoon and evenings. Concessions and bait shop are available on site.



Figure 4: Whispering Pines, Alum Creek, WV

Mill Run Farm is located in Marlinton, WV and has four pay ponds, a restaurant, and fish production facilities. Brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*) and steelhead salmon are stocked in these four ponds. Under a catch-and-keep fishing format, anglers pay a gradual fee based on the size of fish. Mill Run does not host fishing tournaments. (Moldovanyi, 2004)



Figure 5: Mill Run, Marlinton, WV

### **Sampling procedure**

Sampling procedures were administered according to Dillman's (2000) Tailored Design Method. To achieve high response rates, the procedure included five elements: (1) a respondent-friendly questionnaire (including background information about the study); (2) up to three contacts with the questionnaire recipient; (3) inclusion of a (self-addressed) stamped return envelope (and pencil); (4) personalized correspondence; and (5) a token financial incentive (drawing for prizes) (Dillman, 2001, p.150).

### **Data collection**

In order to test survey instruments for content validity, a pilot study was administered prior to the formal data collection period. From June to August 2002, the formal data collection process was conducted—consisting of over eight-weeks. Adult anglers were randomly selected to participate using a random number table.

Participants were told that their names would not be connected with the results of this

study and their responses would be confidential and voluntary. (Moldovanyi, 2004)

Three hundred and thirty-seven randomly selected pay pond anglers participated by completing on-site interviews that lasted approximately five minutes. After the initial interview, respondents were asked to share their opinions about their fee-fishing experience by further completing a survey booklet. The respondent was given the survey booklet and asked to complete it at the end of their fee-fishing experience that day or shortly after. One week following the initial interview, post-card reminders were sent to the address provided during the on-site interview to thank them for agreeing to participate in the study and to remind participants of the awaiting return of their questionnaire. Two weeks after the post-card reminder, a follow-up letter and questionnaire were sent to all non-respondents. Among the 337 participants who participated in the on-site survey, 212 of them returned their questionnaires for a total response rate of 65 percent. After data collection, non-response error was examined by performing Pearson's Chi-square test on selected variables. The results indicated there is no statistical difference between respondents and non-respondents, and therefore the results of this study can be generalized to the population of anglers at the three sites that represent a range of opportunities in West Virginia. (Moldovanyi, 2004)

### **Instrument**

A descriptive survey research design using quantitative methods was used for the purpose of this study. Two research instruments- an on-site questionnaire (Appendix I) and a nine-page mail-back questionnaire booklet survey (Appendix II) were designed according to criteria and principles of Dillman's Tailored Design Method (Dillman, 2000).

*On-site questionnaire*--Through the two-page on-site questionnaire, some basic participant characteristics were obtained. Socio-demographic and behavioral questions such as length of visit and number of visits to the site was examined. The on-site instrument also gathered the respondent's contact information and their willingness to participate in the entire study.

*Mail-back questionnaire*--The mail-back questionnaire contained questions to determine anglers' desired experiences and site preferences. For example, experience solitude, fishing excitement, meet new people, and take a child fishing were among the beneficial experience items examined in the questionnaire. There were a total of twenty-seven items adapted from Driver (1990) and responses were obtained via a seven-point Likert-type scale (-3 Very Undesirable to +3 Very Desirable). Various techniques were used to collect responses including: (a) open-ended responses, (b) Likert-type scales, and (c) ordinal scales. (Moldovanyi, 2004)

### **Treatment of data**

When analyzing the data provided by 337 on-site interviews and 212 returned questionnaires, the Statistical Package for the Social Sciences (SPSS), Version 13.0 was used. The following is a summary of the statistical procedures used to address the first two objectives of this study.

In order to describe the characteristics of pay pond anglers, frequency and descriptive statistic analyses were performed (Gender, Marital Status, Highest Education Level, Age and Income Level).

Principal component factor analysis, a data reduction technique, was performed to group twenty-seven experience items into domains (1 = very undesirable to 7 = very

desirable). Six factors or domains (considered as the fee-fishing mini-markets) were identified following the Principal component factor analysis with Varimax rotation. The minimum required factor-loading score of 0.35 (Hair, Anderson, Tatham, & Black, 1995) was increased to 0.45 prior to the analysis. To test the inter-reliability, Cronbach's alpha was used to determine the interreliability of the variables assigned to each domain. Eigen value and percentage of variance were identified for each mini-market segment. (Moldovanyi, 2004)

To identify the dependence of market preference (desire for experience packages) on socio-demographic characteristics of anglers, ANOVA (analysis of variance) was conducted. Those visitor characteristics examined include age, travel group, marital status, highest education level and income. For each mini-market identified in the factor analysis, two sample t-tests were used to examine differences among gender.

Multiple linear regression analysis predicting the relationships between fee-fishing anglers' mean preference to attain experience domains (dependent variable) and their participation in other outdoor recreation activities throughout the year (independent variables) was performed. A total of 25 activity variables (independent variables) were entered into each of the six models that were developed. Significant values for each model and for each independent variable are reported. Standardized beta values are also reported for each independent variable. The  $R^2$  values, indicating the percent of variance explained, are also reported for each regression model. These models indicate the relationship between mini-markets and larger outdoor recreation markets.

## ***Method 2***

### **Test market in West Virginia**

To help develop fishing packages, two workshops in West Virginia were conducted in spring, 2005. The preliminary sites examined in this study include Stonewall Resort State Park in northern West Virginia and Pipestem Resort State Park in southern West Virginia. Workshop attendances included county Extension agents in adjacent counties, personals from CVB (Conference and Visitors Bureau) and EDA (Economic Development Administration) in adjacent counties, resort managers and civic leaders in adjacent communities. After identifying existing and potential resources for fee-fishing packages associated with Pipestem Resort State Park and Stonewall Resort State Park and their surrounding locations, Pipestem Resort State Park was selected as the test market for the gap analysis given its potential fee-fishing travel package development. It was the belief of the researchers that this test market would provide the best opportunities for families, and would better address the needs of potential tourists identified in earlier studies. The gap analysis later confirmed those assumptions to be correct.

Located in the southeastern section of the West Virginia, Pipestem Resort State Park is 14 miles north of Princeton and 12 miles south of Hinton, West Virginia. Because the abundant tourism resources near Pipestem Resort State Park, the radius of 30 miles was set as the test market boundary. The test market was limited to the state of West Virginia for this initial study. This map of the test market is shown in Figure 6.

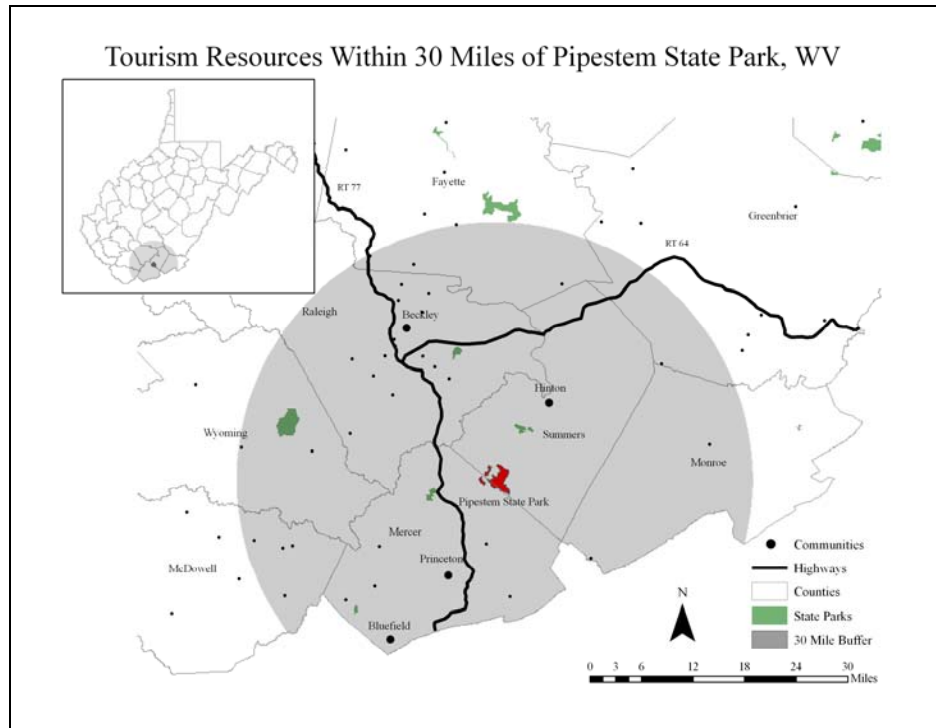


Figure 6: Tourism resources within 30 miles of Pipestem Resort State Park

### **Tourism information database**

Tourism information within 30 miles of Pipestem Resort State Park in West Virginia was collected by building a test market tourism information database. By checking the tourism information from the official State Travel Guide of West Virginia (free travel guide from <http://www.wvtourism.com/>) and local tourism attractions, visitor centers, accommodations and other facilities, the tourism information database was built and divided into six categories with more than 220 tourism providers represented. Within the database, there were four other State Parks other than Pipestem Resort State Park. Those other West Virginia parks include: Pinnacle Rock State Park located in Bramwell; Bluestone Sate Park located in Hinton; Little Beaver State Park located in Beaver; and Twin Falls Resort State Park located in Mullens. All the information regarding services and activities offered by those five State Parks were also included in the database. For

example, tourism information such as attraction, overnight accommodation, dining, visitor and information centers, shopping and tour service opportunities were included.

### **Gap analysis**

Gap analysis was conducted by comparing the activities offered at five State Parks within the test market with the activities demanded by fee-fishing visitors seeking various experience packages.

Based on the multiple linear regression models developed in Method 1, fee-fishing anglers' participation in outdoor recreation activities corresponding with the six market segments were identified. Those activity demands were compared to the activities marketed by the five State Parks, as indicated in the tourism information database. By comparing the activities anglers demand and the activities supplied in the test market, gaps are identified.

### **Summary**

The study methodology was designed to meet the three objectives outlined for this study: to identify mini-market segments based on fee-fishing experiences; to examine how fee-fishing mini-markets can better connect with larger tourism markets; and to use this information to identify gaps in recreational offerings and develop tourism packages in a West Virginia test market. Method 1 was conducted to meet objective one and two. Mini-market segments based on fee-fishing experiences and their connection with larger tourism markets were obtained in this method. Method 2 was conducted to identify gaps in recreational offerings in the Pipestem Resort State Park test market.



## **RESULTS**

### ***Introduction***

The objectives of this study include (1) identifying mini-market segments based on fee-fishing experiences; (2) examining how fee-fishing mini-markets can better connect with larger tourism markets; and (3) to identify gaps in recreational offerings and develop tourism packages in a West Virginia test market. The results of this study were divided into four main sections. The first section focuses on survey participation and response rates. The finally three sections addressed the study objectives and included: six mini-markets, connecting with the larger tourism markets, and gaps in the test market.

### ***Survey participation and response rates***

On-site interviews were conducted and mail-back questionnaires were distributed to the sample of 337 participants by Pierskalla, Schuett and Moldovanyi. (Moldovanyi, 2004) Two hundred-twelve people returned a questionnaire with a response rate of 62.9 percent. The 337 onsite interviews were conducted at three study sites: 162 (48.4%) were conducted at Family Fishing & Camping; 98(28.8%) at Whispering Pines, and 77 (22.8%) at Mill Run Farm. Of those distributed, 212 mail-back questionnaires were returned: 108 (50.9 %) were from Family Fishing & Camping; 55 (25.9 %) were from Whispering Pines; and 49 (23.1 %) were from Mill Run. (Moldovanyi, 2004)

### ***Socio-demographic Characteristics***

The socio-demographic characteristics of respondents were presented in Table 2 and Table 3 (i.e., gender, marital status, travel group, highest level of education attained, age and income).

There were considerably more men anglers than women in this sample. Women accounted for only 1 of every 5 people in our sample: 260 (80.5%) males and 64 (19.2%) females.

Study respondents traveled in a variety of groups, but primarily as family with children ( $n = 103$ , 29.7%), followed by two or more families ( $n = 65$ , 18.7%), a couple ( $n = 55$ , 15.9%), family and friends ( $n = 48$ , 13.8%), alone ( $n = 38$ , 11.0%) and two or more friends together ( $n = 38$ , 11.0%).

Most respondents ( $n = 202$ ; 59.9%) reported a marital status of married with children. A smaller proportion of anglers reported the following: single with no children ( $n = 60$ ; 17.8%), single with children ( $n = 30$ ; 8.9%), married with no children ( $n = 27$ ; 8.0%), other situation ( $n = 18$ ; 5.4%).

Almost half ( $n = 165$ ; 49.1%) of the respondents reported attaining a high school or equivalent status; followed by some high school ( $n = 64$ ; 19.0%), some college ( $n = 43$ ; 12.8%), and college graduate ( $n = 28$ ; 8.3%).

Respondents reported the year they were born. Those measures were recoded to age (in years). In Table 3, respondent's ages ranged from 16 years (the age at which people were eligible to participate) to 74 years. Respondents were an average of 40 years old.

Respondents' annual 2001 household incomes were highly varied, ranging from \$2500 - \$243,000. The average income was \$36,629 and the median was \$27,500 and is similar to the West Virginia average (as reported in the 2000 Census). (Moldovanyi, 2004)

Table 2. Socio-demographic Characteristics (Gender, Marital Status, Highest Education Level)

	Frequency	Percent of total
<u>Gender (n = 334)</u>		
Male	269	80.5
Female	64	19.2
<u>Group Traveling with (n = 347)</u>		
Alone	38	11.0
A couple	55	15.9
Family with children	103	29.7
Two or more families	65	18.7
Family and friends	48	13.8
Two or more friends together	38	11.0
<u>Marital Status (n = 337)</u>		
Single, no children	60	17.8
Married, no children	27	8.0
Single, with children	30	8.9
Married, with children	202	59.9
Other situation	18	5.4
<u>Highest Education Level (n = 337)</u>		
Eighth grade or less	15	4.5
Some high school	64	19.0
H.S. graduate or equivalent	165	49.1
Some college	43	12.8
College graduate	28	8.3
Some graduate school	3	0.9
Graduate degree	16	4.8

Note: Total number of respondents may vary because of missing data.

Table 3 Socio-demographic Characteristics (Age and Income)

	<i>n</i>	Range	<i>M</i>	Median
Age	328	16-74	40	40
Income(US \$)	275	2,500-243,000	36,629	27,500

## ***Six Mini-markets***

### **Factor analysis**

Principal component factor analysis (with Varimax rotation), a data reduction technique, was performed to group twenty-seven experience items (1 = very undesirable to 7 = very desirable). Six factors or domains were identified following the analysis (Table 4). Each of the domains identified represent a mini-market in this study. The six factors were labeled by the researchers based on identifiable patterns of experience items. Those factors were classified as: Experience nature and adventure (ENAA); Social relaxation (SR); Trophy fishing (TF); Escape (ESC); Family (FAM); and Fish for food and fun (FFFF). Factor loading scores were reported for each variable for assignment into a domain. Variables were assigned to a single domain based on the highest factor loading score. Scores highlighted in Table 4 indicate factor membership. For instance, *Tell others about my visit* was assigned to Experience nature and adventure because it had the highest loading score (0.745) for that domain. All factor items had an adequate factor loading score above 0.4.

The six factor domains explain 68.59 percent of the variance for the observed variables. The large Cronbach's alpha scored indicated strong internal reliability among the items for the following domains: 0.917 (ENAA), 0.906 (SR), 0.872 (TF), 0.774 (ESC), and 0.706 (FAM). Factor six (FFFF) was the least reliable factor (Cronbach's alpha = 0.335). Eigenvalues and the percentages of variance were acceptable and reported in Table 4. All the Eigenvalues were larger than 1.0.

Table 4. Factor analysis for recreation opportunity items

Factors and items	Factor Loading Scores					
	ENAA	SR	TF	ESC	FAM	FFFF
<b>Experience nature and adventure (ENAA)</b>						
Tell others about my visit	.745	.134	.190	.140	.123	.052
Learn more about nature	.703	.265	.313	.040	.101	.133
Keep physically fit	.650	.270	.235	.083	.117	.021
Feel more free	.635	.378	.010	.040	-.072	.355
Experience adventure	.621	.364	.404	.165	-.063	.137
Be in a wild area	.611	.244	.012	.273	.276	-.160
Meet new people	.594	.154	.432	-.246	.214	.083
Meet/observe people	.553	.230	.337	-.099	.325	.199
Experience solitude	.523	.472	.280	.311	-.090	-.003
Catch the limit	.504	.029	.473	.394	-.023	-.163
<b>Social relaxation (SR)</b>						
Recover from stress	.277	.847	.227	.078	.068	.002
Escape from pressures	.248	.821	.125	.067	.039	.030
Rest mentally	.202	.800	.178	.203	.070	.055
Rest physically	.270	.629	.255	.298	.123	-.051
Strengthen ties with friends	.145	.554	.415	-.043	.259	.330
Enjoy natural scenery	.519	.523	.197	.152	.092	.086
Be with people who share similar values	.437	.473	.353	.113	.185	-.102
<b>Trophy fishing (TF)</b>						
Catch trophy-size fish	.133	.220	.850	.028	-.015	.037
Do something challenging	.482	.198	.700	.042	-.018	.024
Catch large fish	.232	.256	.696	.228	-.094	.002
Improve fishing skills	.440	.290	.550	.054	.098	.059
<b>Escape (ESC)</b>						
Be alone	.131	.140	.014	.812	.088	.207
Get away from crowds	.070	.262	.166	.786	.067	.090
<b>Family (FAM)</b>						
Take a child fishing	.109	-.042	-.048	.020	.881	.114
Spend time with family	.145	.252	-.075	.133	.715	-.012
<b>Fish for food and fun (FFFF)</b>						
Catch fish to eat	-.056	-.077	-.076	.315	.071	.774
Experience fishing excitement	.431	.181	.188	-.017	.068	.600
<b>Eigenvalue</b>	5.292	4.456	3.527	2.086	1.740	1.420
<b>% of Variance</b>	19.60	16.50	13.06	7.73	6.45	5.26
<b><math>\alpha</math></b>	.917	.906	.872	.774	.708	.335

### Demographic information and differences among six mini-markets

The six experience domains represented the various market segments in this study. The average score among items in each domain was calculated and used to examine differences among different socio-demographic variables. A number of tourism researchers have indicated that the segmentation of markets can be conducted in terms of both psychological and socio-demographic variables to potentially enable a better discrimination between market members than does analysis in terms of only one (Galloway, 2002; Gladwell, 1990; Luzar et al., 1998; Ryel & Grasse, 1991; Silverberg et al., 1996). The effects of socio-demographic characteristics on the six mini-markets are reported in Tables 5 through 10.

Independent sample t-tests were conducted to examine differences among gender for each experience domain (Table 5). Fish for food and fun was the only factor that differed significantly ( $p = .05$ ) among males and females. Females desired this catch-and-keep fishing format more than males. Family fishing was the most highly desired experience domain for both males ( $M = 6.06$ ) and females ( $M = 6.38$ ).

Table 5. Mean scores and t-tests reported for experience domains by gender

Experience Domains	Male	Female	F(df)	p value
ENAA	5.36	5.28	0.32(188)	.57
SR	5.94	5.87	0.10(187)	.75
TF	5.54	5.51	0.67(187)	.42
ESC	4.93	5.21	0.07(187)	.80
FAM	6.06	6.38	1.86(186)	.17
FFFF	5.13	5.47	3.82(184)	.05**

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$  (only significant level was found, so no need to list three levels here)

Analysis of variance and Scheffe's post hoc tests were conducted to examine differences of each experience domain mean score (dependent variable) among four age categories (independent variable) (Table 6). Trophy and Family fishing were the only domain mean scores that differed significantly ( $p < .05$ ) among age categories.

Respondents with an age under 30 reported significantly higher mean scores than the 40-49 and 50 or older age groups for Trophy fishing experiences ( $p = 0.01$ ). Preference for family experiences were higher for those respondents between 30-39 years of age when compared to younger respondents under the age of 30 ( $p = 0.09$ ).

Table 6 Mean score differences among age categories for experience domains

Experience Domains	Under 30 (1)	30-39 (2)	40-49 (3)	50+ (4)	F(df)	p value	Scheffe's post hoc ( $\alpha=0.10$ )
ENAA	5.54	5.27	5.17	5.46	1.10(3,185)	.35	
SR	6.03	5.87	5.73	6.03	0.81(3,183)	.49	
TF	6.07	5.54	5.21	5.35	3.85(3,183)	.01***	1>3,4
ESC	5.00	4.94	4.80	5.13	0.35(3,183)	.79	
FAM	5.68	6.27	6.21	6.20	2.17(3,182)	.09*	2>1
FFFF	4.89	5.06	5.48	5.33	1.60(3,180)	.19	

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$  (same concern as the above table)

Analysis of variance and Scheffe's post hoc tests were conducted to examine differences of each experience domain mean score among six types of travel groups (Table 7). Social relaxation, Escape and Fish for food and fun mean scores did not significantly differ among Travel groups in this study. However, Experience nature and adventure, Trophy fishing and Family experience domains were dependent on the type of travel reported by respondents. Respondents traveling alone scored significantly higher than family with children when Trophy fishing was examined as the dependent variable. As expected, families traveling with children reported greater desire for Family



experiences than those visitors traveling alone, as a couple, and with two or more friends. Family and friends also scored significantly higher for Family experiences than two or more friends together. Other results reported in Table 7 were not significant, but some were suggestive. For example, Experience nature and adventure was a type of experience package desired more greatly by anglers traveling alone than those groups traveling as two or more families together.

Table 7 Mean score differences among travel group categories for experience domains

Experience Domains	Alone (1)	A couple (2)	Family with children (3)	Two or more families together (4)	Family and friends (5)	Two or more friends together (6)	F(df)	p value	Scheffe's post hoc ( $\alpha = 0.10$ )
ENAA	5.94	5.64	5.22	5.07	5.31	5.18	2.32(5,184)	.05*	
SR	6.12	6.12	5.86	5.70	5.91	6.13	0.81(5,181)	.55	
TF	6.25	5.76	5.16	5.25	5.55	5.95	3.19(5,183)	.01***	1>3
ESC	4.97	5.32	4.85	4.75	5.24	4.75	0.76(5,182)	.58	
FAM	5.41	5.70	6.70	6.13	6.40	5.28	7.89(5,181)	.00***	3>1,2,6; 5>6
FFFF	5.25	4.92	5.55	5.07	4.96	5.33	1.34(5,179)	.25	

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$

Analysis of variance and Scheffe's post hoc tests were conducted to examine differences of each experience domain mean score among seven levels of annual household income (ranging from \$10,000 to over \$100,000) (Table 8). Experience nature and adventure, Social relaxation and Trophy fishing mini-markets were significantly dependent on income level. For the Social relaxation mini-market, families with household incomes of \$15,000-\$24,999 scored significantly higher than respondents reporting household incomes of \$75,000-\$99,999. For the Trophy fishing segment, families with household incomes of \$75,000-\$99,999 scored significantly lower than the three lower income levels ranging from \$15,000-\$50,000. Although Scheffe's post hoc tests were not significant when Experience nature and adventure dependent variable was examined, the observable differences were suggestive. That was, as income levels increased, the mean scores for Experience nature and adventure decreased.

Table 8 Mean score differences among income categories for experience domains

Experience Domains	10k- 14,999 (1)	15k- 24,999 (2)	25k- 34,999 (3)	35k- 49,999 (4)	50k- 74,999 (5)	75k- 99,999 (6)	>100k (7)	F(df)	p value	Scheffe's post hoc ( $\alpha = 0.10$ )
ENAA	5.82	5.56	5.50	5.34	5.03	4.65	4.37	2.66(6,139)	.02**	
SR	6.29	6.22	6.03	6.07	5.73	5.26	5.31	2.26(6,136)	.04**	2>6
TF	5.94	5.87	5.92	5.62	5.05	4.42	4.79	3.80(6,137)	.00***	2,3,4>6
ESC	5.11	4.94	5.48	4.98	4.98	4.79	5.00	0.42(6,136)	.86	
FAM	5.89	5.76	5.77	6.41	6.38	6.05	6.42	1.28(6,136)	.27	
FFFF	4.72	5.03	4.78	5.23	5.59	5.79	5.33	1.56(6,136)	.16	

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$

Analysis of variance and Scheffe's post hoc tests were conducted to examine differences of each experience domain mean score among five different household situations (Table 9). Only one experience domain significantly differed among categories of household type. For the Family mini-market, single respondents with no children scored significantly lower than respondents that are married with children and respondents that are single parents with children. Although only suggestive, respondents married with children ( $M = 5.40$ ) reported a greater desire for Fish for food and fun when compared to single parents with children ( $M = 4.68$ ).

Table 9 Mean score differences among household status categories for experience domains

Experience Domains	Single, no children (1)	Married, no children (2)	Married with children (3)	Single parent with children (4)	Others (5)	F(df)	p value	Scheffe's post hoc ( $\alpha = 0.10$ )
ENAA	5.33	5.41	5.33	5.26	5.79	0.50(4,189)	.74	
SR	5.64	5.85	5.97	6.04	6.38	1.25(4,186)	.29	
TF	5.57	5.77	5.46	5.63	5.88	0.44(4,188)	.78	
ESC	4.81	5.38	5.03	4.36	5.30	1.11(4,187)	.35	
FAM	5.26	5.85	6.40	6.42	5.75	7.16(4,186)	.00***	1<3,4
FFFF	4.73	5.35	5.40	4.68	5.14	2.27(4,184)	.06*	

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$

The demographic characteristics associated with respondents' highest level of education are reported in Table 10. Analysis of variance and Scheffe's post hoc tests were conducted to examine differences of each experience domain mean score among different levels of education. Experience nature and adventure, Social relaxation, Trophy fishing and Family are significantly dependent on education level. For the Experience nature and adventure market segment, respondents with an eighth grade ( $M = 6.33$ ) education scored significantly higher than those with some college ( $M = 4.96$ ) and college graduate degree ( $M = 4.56$ ). Also, those with some high school education scored significantly higher ( $M = 5.64$ ) than those with a college graduate degree ( $M = 4.56$ ). When examining Social relaxation, respondents with a college graduate degree had significantly lower scores ( $M = 4.92$ ) than those reporting an eighth grade education ( $M = 6.73$ ), some high school experience ( $M = 5.99$ ) and a high school graduate degree ( $M = 6.04$ ). Finally, it was observed that Trophy fishing is more desirable for respondents reporting having some high school education when compared to those with some graduate school experience. As for the Family market segment, the highest mean scores were reported by those with a graduate degree and the lowest mean score were reported by those with some graduate school experience.

Table 10 Mean score differences among highest education level categories for experience domains

Experience Domains	Eighth grade or less (1)	Some high school (2)	H.S. graduate (3)	Some college (4)	College graduate (5)	Some graduate school (6)	Graduate degree (7)	F(df)	p value	Scheffe's post hoc ( $\alpha=0.10$ )
ENAA	6.33	5.64	5.46	4.96	4.56	5.25	4.92	4.38(6,185)	.00***	1>4,5; 2>5
SR	6.73	5.99	6.04	5.77	4.92	5.71	5.91	3.78(6,184)	.00***	1,2,3>5
TF	5.63	5.94	5.66	5.24	4.84	4.75	5.17	1.96(6,184)	.07*	
ESC	5.83	4.56	5.04	4.88	4.69	5.50	5.54	1.24(6,184)	.29	
FAM	6.28	5.71	6.20	6.29	5.84	4.75	6.75	1.83(6,183)	.10*	
FFFF	5.67	5.13	5.03	5.62	5.06	5.75	5.79	1.31(6,182)	.25	

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$



### ***Connecting with Larger Tourism Markets***

Multiple regression analysis was used to identify the strength and significance of relationships between on-site fee-fishing experience motivations (dependent variable) and other tourism activities visitors participate throughout the year (independent variables). Six models were developed, each representing a larger market segment and potential fishing package. Twenty-five recreation activities were entered into each model, and the six strongest positive predictor variables are reported in Table 11. Not all of the predictor variables examined and reported in Table 11 are significant. Special consideration was made for those insignificant variables that are suggestive or seem intuitive.

The first model examines predictors for Experience nature and adventure and approaches significance ( $p = 0.12$ ). Of those activities included in the analysis, driving for pleasure was the only significant predictor ( $Beta = 0.132, p = 0.09$ ). Other independent variables that are suggestive include target shooting, rock climbing, birding, motor-boating, and nature photography. Together, this group of activities could be incorporated in a tourism package with the theme, experience nature and adventure. That is, a mix of both passive and active activities included in this model can compliment the fee-fishing experience.

In the Social relaxation model, four wheel driving/ATV driving was the only significant independent variable ( $Beta = 0.158, p = 0.07$ ). However, other complimentary activities that could be considered as part of this tourism package include road biking, kayaking, target shooting, motor-boating and walking.

Trophy fishing was the only model developed that was significant ( $R^2 = 0.20, p = 0.02$ ) and included three significant predictors and three others that were more suggestive.

Driving for pleasure ( $Beta = 0.168, p = 0.03$ ), four wheel driving/ATV driving ( $Beta = 0.162, p = 0.05$ ) and nature photography ( $Beta = 0.156, p = 0.05$ ) were significant predictors for the desire to experience Trophy fishing. Although target shooting ( $Beta = 0.138$ ), road biking ( $Beta = 0.112$ ) and motor-boating ( $Beta = 0.087$ ) were not significantly related, they have relatively strong relationships with the trophy fishing experience factor as indicated by the *Beta* values reported.

Among all of the 25 predictors examined for each of the models, birding had the strongest relationship with the mini-market, Escape ( $Beta = 0.214, p = 0.01$ ). Although this model has only one significant predictor, the model does approach significance ( $p = 0.17$ ). Other activities that are suggestive in this model include target shooting, nature photography, four wheel driving/ATV driving, camping near vehicle and driving for pleasure.

For the Family experience factor, swimming was the only significantly predictor ( $Beta = 0.169, p = 0.04$ ). However, the independent variable, kayaking, does approach significance ( $p = 0.10$ ) and is an affordable alternative to motor-boating and compliments family fun. Backpack camping, watching wildlife, sightseeing and target shooting were more suggestive variables in this model.

The final model examined predictors of Fish for food and fun. Birding was the only significant predictor ( $Beta = 0.169, p = 0.04$ ). Rock climbing was the second strongest predictor and approached significance ( $Beta = 0.153, p = 0.10$ ). Other more suggestive independent variables include kayaking, hunting, day use hiking and walking.

Table 11. Regression of secondary activities on fee-fishing experience mini-markets

Experience Factor (Mini-market)	Activity Participation (Larger Market)	Beta	Sig.	R <sup>2</sup>	Sig.
Experience Nature & Adventure	Driving for pleasure	.132	.09*	.16	.12
	Target shooting	.124	.16		
	Rock climbing	.112	.21		
	Birding	.110	.16		
	Motor-boating	.108	.18		
	Nature photography	.101	.20		
Social Relaxation	Four wheel driving /ATV driving	.158	.07*	.13	.42
	Road biking	.135	.13		
	Kayaking	.118	.17		
	Target shooting	.105	.26		
	Motor-boating	.092	.26		
	Walking	.081	.34		
Trophy Fishing	Driving for pleasure	.168	.03**	.20	.02**
	Four wheel driving /ATV driving	.162	.05**		
	Nature photography	.156	.05**		
	Target shooting	.138	.11		
	Road biking	.112	.18		
	Motor-boating	.087	.27		
Escape	Birding	.214	.01***	.16	.17
	Target shooting	.148	.11		
	Nature photography	.096	.24		
	Four wheel driving /ATV driving	.095	.26		
	Camping near vehicle	.086	.25		
	Driving for pleasure	.072	.36		
Family	Swimming	.169	.04***	.12	.48
	Kayaking	.141	.10*		
	Backpack camping	.122	.14		
	Watching wildlife	.086	.34		
	Sightseeing	.079	.39		
	Target shooting	.077	.40		
Fish for Food & Fun	Birding	.169	.04**	.14	.29
	Rock climbing	.153	.10*		
	Kayaking	.116	.17		
	Hunting	.096	.30		
	Hiking (day use)	.073	.43		
	Walking	.070	.41		

\* $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$

Although not all of the models and predictor variables are significant, there is empirical evidence to support some relationships between angler on-site motivations (mini-markets) and his/her participation in other tourism activities throughout the year (larger tourism market). Those activities associated with larger *Beta* values have the strongest model relationships and should be given the most consideration when developing fishing packages. By identifying the relationship between activities that compliment fishing and are part of a larger tourism market, results can help tourism providers develop tourism packages.

### ***Gaps in the test market***

A gap analysis was performed by comparing those activities associated with each market segment with activities already marketed by State Parks within 30 miles of Pipestem Resort State Park in West Virginia—the study area. Of those gaps examined, 77 (43%) are currently marketed by a state park in the test market area. Most of the recreation activities associated with the Family fishing experience are available to customers, whereas Experience nature and adventure is a potential fishing package lacking the most marketed activities. A summary of the method and more specific results follow.

### **Tourism information database**

Tourism information within 30 miles of Pipestem Resort State Park in West Virginia was collected by building a tourism information database for the test market. The database or library was organized into six categories including more than 220 tourism providers. The six categories include information regarding attractions, overnight accommodation, dining, visitor center and information center, shopping and tourism services. The contact information associated with and recreational activities and services provided by each tourism provider was also included as part of the database.

The specific information collected for the category, attractions, include: ATV, Exhibition and Museums, Fairs and Festivals, Fishing, Historic Sties and Main Streets, Lakes, Parks, Outfitters, Rafting and float trips, Target shootings, Snow Skiing, Trails, Theatre and Performing Art and others tourism opportunities reported in the marketing information examined. As for the overnight accommodation, businesses such as resorts, hotels and motels, bed and breakfasts, campgrounds, conference and meeting facilities,

and vacation and cabin rentals were inventoried. Dining information included casual dining, fast food, fine dining, and bar/lounge businesses and services. The availability of visitors' and information centers, antique and other specialty shops, and other tourism services were also determined.

Opportunities available in the five state parks were included in the database and were the focus of this gap analysis. Those West Virginia parks include: Pinnacle Rock State Park located in Bramwell, Bluestone State Park located in Hinton, Little Beaver State Park located in Beaver, Pipestem Resort State Park located in Pipestem (and central to the test market), and Twin Falls Resort State Park located in Mullens. All the information regarding services and activities offered by those five state parks were included in the database.

### **Gap analysis of activities associated with each market segment in the test market**

The activities offered at the five state parks within our test market were compared with the activities demanded by fee-fishing visitors seeking various experience packages. Those activities marketed for each experience package are identified with a checkmark in Table 12. Gaps exist where checkmarks are absent. The six most strongly related tourism activities with each experience domain (or mini-market), as determined in the regression analysis, were included in Table 12. Those activities included were among the 25 outdoor activities reported by respondents and indicate participation during the 12 months prior to the study. An activity can be included in more than one market since all 25 activities were included as independent variables in each of the six regression models.

There are a total of 180 possible activity gaps that were examined and reported in Table 12 (six domains multiplied by six activities multiplied by five state parks equals 180 gaps). Of those gaps examined, 77 (43%) are currently marketed by a state park in the test market area.

Only eight (27%) activities associated with Experience nature and adventure are marketed by state parks. Nature photography was marketed by all five state parks, but was only weakly related to the mini-market. No state park promoted driving for pleasure, rock climbing and birding activities. Except for Bluestone State Park, no park provided target shooting. Only Bluestone State Park and Little Beaver State Park mentioned motor-boating in the marketing materials examined in this study.

Although four-wheel driving /ATV driving was significantly related to the Social relaxation mini-market, none of the state parks in the test market mention this activity, leaving a gap for small businesses outside of state parks to fill by developing a tourism package. Most parks provided road biking and kayaking. Only Bluestone State Park supplied target shooting. Motor-boating is provided by Bluestone State Park and Little Beaver State Park. Walking opportunities are marketed by all five state parks. In all, there are 15 (50%) currently marketed activities by the five state parks in the test market.

For the Trophy fishing tourism package, 12 (40%) activities are marketed by at least one state park. Although driving for pleasure and four-wheel driving /ATV driving activity had significantly strong relationships with this mini-market, none of the five state parks marketed those activities. Nature photography, which was also significantly related to the mini-market, is an activity available by all state parks. Only Bluestone State Park

offers target shooting. Motor-boating is offered by Bluestone State Park and Little Beaver State Park, and most state parks, except Bluestone State Park, offers road biking.

Only 9 (30%) Escape related gaps are currently filled by state parks. Among them, birding was the only significantly related activity. No state park in the test market promotes this activity. The second strongest related activity was target shooting, and only Bluestone State Park fills this otherwise unmet need.

Exactly 18 out of 30 (60%) gaps associated with the Family tourism package were met in the five state parks of the test market, which is the most heavily marketed among the six mini-markets. Most parks provide both swimming and kayaking, which were significantly and more strongly related to the Family mini-market. As the third strongest predictor, backpack camping was not marketed by any park. However, all parks market watching wildlife and sightseeing. In the end, tourists can target shoot only in Bluestone State Park.

For the tourism package of Fish for food and fun, 15 activity gaps (50%) are currently marketed by the five state parks. There were two significantly associated activities and they include birding and rock climbing. But, none of the five parks market the two activities. Tourists can kayak in Blue Stone State Park, Little Beaver State Park and Pipestem Resort State Park. In Blue Stone State Park and Pipestem Resort State Park, tourists can engage in hunting activities. More easily perhaps, tourists have the opportunity to engage in day use hiking and walking in all five parks.

In summary, the gap analysis results indicate that most of the activities associated with the Family fishing experience were available to tourists in the test market. However,



many gaps exist for the other mini-markets and provide tremendous opportunities for other tourism providers to work with State Parks to better meet the needs of visitors.

Table 12 Gap analysis of tourism offering at State Parks in the test market

Mini-market segments (Local fee fishing events)	Major Market (Recreational events throughout the year)	Marketed Activities by WV State Parks within 30 Mile Radius of Pipestem State Park				
Experience Factor	Activity Participation	Bluestone	Little Beaver	Pinnacle Rock	Pipestem	Twin Falls
Experience Nature & Adventure	Driving for pleasure					
	Target shooting	✓				
	Rock climbing					
	Birding					
	Motor-boating	✓	✓			
Social Relaxation	Nature photography	✓	✓	✓	✓	✓
	Four wheel driving /ATV driving					
	Road biking		✓	✓	✓	✓
	Kayaking	✓	✓		✓	
	Target shooting	✓				
Trophy Fishing	Motor-boating	✓	✓			
	Walking	✓	✓	✓	✓	✓
	Driving for pleasure					
	Four wheel driving /ATV driving					
	Nature photography	✓	✓	✓	✓	✓
	Target shooting	✓				
	Road biking		✓	✓	✓	✓
	Motor-boating	✓	✓			

Table 12 continued Gap analysis of tourism offering at State Parks in the test market

Escape	Birding					
	Target shooting	✓				
	Nature photography	✓	✓	✓	✓	✓
	Four wheel driving /ATV driving					
	Camping near vehicle	✓			✓	✓
Family	Driving for pleasure					
	Swimming	✓	✓		✓	✓
	Kayaking	✓	✓		✓	
	Backpack camping					
	Watching wildlife	✓	✓	✓	✓	✓
Fish for Food & Fun	Sightseeing	✓	✓	✓	✓	✓
	Target shooting	✓				
	Birding					
	Rock climbing					
	Kayaking	✓	✓		✓	
	Hunting	✓			✓	
	Hiking (day use)	✓	✓	✓	✓	✓
Walking	✓	✓	✓	✓	✓	

## DISCUSSION

### ***Testing the Hypothesis and Addressing the Research Questions***

There are more than 35 fee-fishing businesses that operate in West Virginia. These are small businesses, which often lack the critical mass to attract out-of-state anglers to their sites as primary destinations. Based on a survey (Logar et al., 2003) of potential West Virginia tourists, most of the respondents are willing to visit the state and take part in a recreational package. But only 9 percent ( $n = 496$ ) of visitors participated in a travel package to West Virginia. The situation is that most visitors prefer to participate in a travel package, but they do not have such experiences in West Virginia. The purpose of this study was to connect West Virginia fee-fishing businesses with the larger tourism market to help those businesses seeking to attract more customers from the larger region.

The null hypothesis tested in this study was rejected. That is, there are relationships between angler motivations to participate in a single fee-fishing event (mini-market) and his/her participation in other outdoor recreation activities throughout the year (major-market). The results of this study further clarifies those market connections that exist in the Pipestem Resort State Park test market.

This study also helped address three questions that guide and organize the following discussion. The questions progressively work towards laying groundwork for State Park managers and some small business owners when developing public-private partnerships and marketing ideas. The following sections address each research question, explore the meanings and implications of significant results, and discuss management and future research implications of this study.

## **1. What are the fee-fishing mini-market segments?**

Segmenting the potential market by motivation variables produced six mini-markets or motive domains: Experience nature and adventure (ENAA); Social relaxation (SR); Trophy fishing (TF); Escape (ESC); Family (FAM); and Fish for food and fun (FFFF). The six domains explained 69 percent of the variance for the observed variables. The Cronbach's alpha scores indicated strong internal reliability among the items in all but one motive domain. Although Fish for food and fun is a desirable fishing experience, it was the least reliable domain in our study. The remaining factors had relatively high reliability coefficients ranging from 0.92 to 0.70. All six experience domains represent the mini-markets in this study.

Each segment identified in the first phase of research can be integrated within a larger recreational market through the development of tourism packages and public-private partnerships with West Virginia State Parks.

## **2. How can fee-fishing mini-markets better connect with larger outdoor recreation markets?**

Multiple regression analysis was used to identify the relationship between fee-fishing experience motivations (dependent variable) and other outdoor recreation activities visitors participate throughout the year (independent variables). Six models were developed, each representing a larger market segment and potential fishing package. Twenty-five recreation activities were entered into each model, and the six strongest positive predictor variables were reported.

### *Trophy Fishing*

The independent variables explained the most variance when the dependent variable Trophy fishing was examined making this market the most predictable by outdoor recreation

patterns. The experience domain was significantly related to activities such as driving for pleasure, four-wheel driving/ATV driving, and nature photography. Catching a large fish may represent the primary fishing challenge for this market segment, while easy access to the fishing site and documentation of the catch (e.g., pictures) may provide elements of control anglers seek in the experience.

When examining the dependency of Trophy fishing on socio-demographic variables, several significant findings were identified. Trophy fishing is an experience more highly desired by anglers under the age of 30 and that travel alone. Middle adulthood is a phase in life where people begin to slow down, become more active in individual sports, and have the perseverance to work toward one goal for a prolonged period of time (DeGraaf, Jordan, & DeGraaf, 1999). Trophy fishing is a sport that requires some patience and appears to be an attractive recreational activity for this group in our study. Also, with lower incomes, this study group is likely looking for activities that are more affordable. The Trophy fishing experience should be packaged and priced to best meet these needs.

#### *Experience nature and adventure*

Experience nature and adventure was significantly related to driving for pleasure. The significance of this relationship was second only to Trophy fishing. This mini-market involved activities that are closely tied to nature and include activities such as rock climbing, birding, and target shooting. It is important to note that this domain was only one of two that included rock climbing activities, and therefore, should be considered for inclusion in this package.

There were several significant socio-demographic characteristics that affect the desire to attain experiences associated with nature and adventure. Those significant factors include travel group, income and highest education. Tourists traveling alone scored highest in this mini-market

and those traveling as two or more families together scored the lowest. On the other hand, it was noticed that as income level increases, the mean scores of Experience nature and adventure decreased. As for the highest education, the highest mean scores were reported for those with some high school education, and the lowest scores were associated with those with some graduate school. It could be concluded that the Experience nature and adventure market mostly attracted those fee-fishing anglers who traveled alone, and have lower incomes and education levels. Keeping the cost down for this tourism package should be an important consideration. Also, given these anglers tend to travel alone, a guide service (e.g., rock climbing partner) should be considered.

#### *Escape*

Birding was the only significant activity related to the Escape mini-market. Camping near vehicle also had a relatively strong relationship with Escape. When examining the dependency of Escape on socio-demographic variables, no factors were found to be significant. Escape appears to be a market that cuts across socio-demographic groups and should be marketed to a general audience.

#### *Fish for Food & Fun*

The domain, Fish for food and fun, was the least reliable factor in factor analysis (Cronbach's alpha = 0.035). However, birding and rock climbing activities are significant predictors in this model. Females preferred this experience package significantly more than males.

### *Social Relaxation*

Four-wheel driving/ATV driving was the only significant predictor in the Social relaxation model. Other suggestive indicators are road biking and walking. Although they were not significantly related, they both had the strongest relationship with the domain when compared to the other five mini-markets. The only significant socio-demographic factor affecting the desire for this domain is income. That is, those respondents with the lowest household incomes reported the highest level of desire to attain social relaxation. Affordable packages should be considered for this cohort of anglers.

### *Family*

The Family experience domain was significantly related with day-use activities such as swimming and kayaking. Other activities such as backpack camping, watching wildlife and sightseeing should also be considered when constructing this tourism package.

The most significant differences and perhaps the most intuitive was the dependency of Family fishing on type of travel group. The Family mini-market was also dependent on other socio-demographic characteristics including age, family status and highest education level. The results suggest that the family tourism package could target those potential tourist between the ages of 30-39, traveling with children (married or single), and with graduate degree education. People in middle adulthood generally have decided and are settled in their decisions relative to children and family (DeGraaf, Jordan & DeGraaf, 1999). Therefore, those fishing motivations expressed by this cohort are, perhaps, fairly stable throughout the year. It is also worth noting that the respondents with the largest household income reported the greatest desire for this experience package, although the results are only suggestive.



### **3. What are the gaps in recreational offerings associated with potential tourism packages in the Pipestem Resort State Park test market?**

By comparing the activities associated with each market segment with activities already marketed by state parks within the test market, an analysis was performed to identify the gaps between them. First, the tourism information provided by state parks within a radius of 30 miles of Pipestem Resort State Park in West Virginia was collected, and an information database was created with more than 220 tourism providers. An analysis was performed to check the gaps in the six larger tourism markets. Family fishing had the fewest gaps while Experience nature and adventure had the most. The remaining markets fall within the two extremes.

#### *Family fishing*

Of the 30 possible gaps examined for Family fishing, 18 (60%) were marketed by state parks, and therefore, had the fewest gaps among all of the packages examined. Bluestone State Park had the fewest gaps among the five parks examined for this domain, and it was the only park to market target shooting. Watching wildlife and sightseeing were marketed by all of the parks. Backpack camping was the only activity that was not marketed by any of the state parks, and should be considered when developing public/private partnerships in the future.

#### *Experience nature and adventure*

On the other hand, Experience nature and adventure was a potential fishing package that was least marketed among the state parks. Although nature photography was marketed by all of the parks, the remaining five activities examined were not marketed by most or all of the parks. Motor-boating is marketed only by Bluestone and Little Beaver State Parks. Driving for pleasure, rock climbing, and birding were not marketed by any park. The potential for public/private

partnerships is perhaps greatest for this domain given the naturalness of the area and the many gaps associated with the production of nature-based tourism opportunities.

The remaining markets include Social relaxation, Trophy fishing, Escape and Fish for food and fun. These markets fall within the middle range of the gap analysis. Between 30 percent to 50 percent of the gaps were met by the five state parks. The most gaps involved targeting shooting, four wheel driving /ATV driving, driving for pleasure, birding, camping near a vehicle, and hunting. These gaps indicate additional opportunities for public-private partnership or growth in the tourism sector.

## ***Management Implications***

### **Most promising tourism package in the test market**

Family fishing packages appear to be the most promising type of tourism package for the Pipestem test market, and perhaps attract those visitors with the greatest household incomes. Swimming, kayaking, backpack camping, watching wildlife, sightseeing, and target shooting are examples of secondary activities that can compliment family fishing opportunities and are among the more heavily marketed activities near Pipestem. Tourists can find most of these activities in nearby state parks. These results also compliment those findings presented by Logar and others (2003). Their survey of potential West Virginia tourists indicated that most visitors travel as a family unit (72%). Park managers should work together to develop marketing strategies that include those family activities as a package.

### **Potential fishing packages through public-private partnership**

Contracting services that utilizes the private sector to deliver services not met by land management agencies has been popular for the last twenty years (DeGraaf, Jordan, & DeGraaf 1999). More than 45,700 federal jobs were contracted out to the private sector between 1981 and 1988 (Kotler & Andreasen, 1996). This trend will likely continue across all levels of government as agencies seek to provide better services at lower costs. West Virginia State Parks has followed this trend. For example, the resort at Stonewall Jackson State Park, located in northern West Virginia, is currently managed by a private corporation. Research that can inform decision makers regarding gaps in services will help support existing and new partnerships that develop in the state.

The gap analysis performed in this study helps address the question regarding what should be contracted out and what should be done within the State Parks. Those activities that

are not marketed by the state parks in this study should be given priority when developing public private partnerships. For example, activities associated with Experience nature and adventure and Escape mini-markets were the least marketed activities by state parks in this study. But there were several private tourism providers within the test market that offer activities such as rock climbing, birding, motor-boating and so on. The development of additional tourism offerings and public-private partnerships can help address the gaps identified in those weaker markets.

Cordell, Bergstrom and Watson (1992) conducted a study on the economic growth of state park visitation in the local and state economies of Kansas. Results suggested that state park visits had considerable positive economic impacts. Parks and other recreational uses of rural land may, therefore, provide an additional means for stimulating economic growth and stability. For both state parks and other tourism providers examined in this study, additional work should be directed toward the development of additional public-private partnership. This marketing strategy can lead to more visitation, better marketing and economic growth. In a 1995 special issue of the *Journal of Park and Recreation Administration*, the importance of studying the phenomenon of partnerships was well documented by contributing authors knowledgeable of partnerships involving park and recreation administrators (Mowen & Kerstetter, 2006). The findings of this study compliment their recommendations. Building and evaluating tourism packages that target different market segment such as the family would be an applicable way for assessing the success of such partnerships in West Virginia.

Buhalis (2000) suggested taking advantage of new technologies such as the Internet to enabled destinations to enhance their competitiveness by increasing their visibility, reducing costs and enhancing local co-operation. This is an emerging technique in tourism marketing and

could be used to better promote new tourism packages that are developed. Targeting these packages to certain cohorts, based on the study findings, is encouraged.

Increasing quality of West Virginia local fee-fishing businesses is an important issue in development as well. The interested reader should refer to reports produced at West Virginia University including those published by Logar et al. (2003).

### ***Recommendations for Future Research***

Building partnerships when developing tourism packages is a relatively new topic for research and practice. Although the strength of a partnership (i.e., partnership, strategic alliance, or joint venture) is only one indicator of the level of integration between two or more organizations, other patterns of linkages should also be considered (Beekun & Ginn, 1993).

Although this study was conducted in three West Virginia fee-fishing ponds and results applied in a gap analysis within a West Virginia test market, it has relevance to other locals, given that fee-fishing businesses and other recreation and tourism providers are confronted by similar environmental constraints and pressures to access resources and use them efficiently. Future gap analyses should be conducted in other test markets.

This study was also limited by the number of outdoor recreation activities examined. Future research should examine other leisure activities to more fully develop tourism packages relevant to fee-fishing. In addition, other styles of fishing on public waters should be examined to develop models applicable to streams, rivers, and lakes.

### ***Conclusion***

The hypothesis of this study is that there are no relationships between angler motivations to participate in a single fee-fishing event (mini-market) and his/her participation

in other tourism activities throughout the year (major market) (multiple regression,  $p < .05$ ).

The hypothesis was rejected in this study and specific relationships between angler motivations for mini-markets and his/her participation in major markets were determined. Each of the six experience domains had some significant relationship with other tourism activities within a larger market. Finally, the gap analysis between the activities demanded and those marketed within the West Virginia test market show some gaps. Most of the tourism activities associated with Family fishing experience were available to customers, whereas experience nature and adventure was a potential fishing package lacking the most marketed activities. The development of fishing packages that include other outdoor tourism activities through partnerships with West Virginia State Parks can help private landowners better connect with major markets and attract visitors from a larger region. Developing such tourism packages is also a good way to help West Virginia State Parks attract more travelers, better satisfy customers' demands, proponent traveler's stay time, and in the end, contribute to a larger portion of the West Virginia tourism industry.

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## APPENDIX I

### On-site interview instrument

#### INITIAL CONTACT FOR ON-SITE INTERVIEW

Interviewer initials: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

---

Hello, my name is \_\_\_\_\_. I am working for West Virginia University. We are collecting information about visitors to this location. We would like to know about your visit to this site. Would you be willing to spend a few minutes to answer a few questions that will help direct the future management of pay ponds/lakes in West Virginia?

(Check  $\surd$  one)

- YES (continue with the on-site interview)  
 NO (thank them anyway and continue with another contact)

1. Have you been interviewed by WVU during the previous visits to this pay pond/lake this summer? (Check  $\surd$  one)

- YES (thank them and continue with another contact)  
 NO (continue with the on-site interview)

2. Is this your first visit to this pay pond/lake? (Check  $\surd$  one)

- YES  
 NO

If **NO**, how many times have you visited this location during the last 12 months, including this visit? \_\_\_\_\_ visits

3. How long did you/will you stay at this pay pond/lake on this trip?

\_\_\_\_\_ hour(s) \_\_\_\_\_ minute(s)

4. Is this pay pond/lake the main destination of this trip or a stop on a longer trip?

- main destination -----> (Go to question 6)  
 stop on a longer trip -----> (Continue on to question 5)

5. About how many miles, if any, did you come out of your way to get to this pay pond/lake?

\_\_\_\_\_ miles

\_\_\_\_\_ How many hours did it take to travel out of your way (include any stops made en route) TO GET TO this pay pond/lake business?

\$ \_\_\_\_\_ What was the additional lodging expense if any?

6. How many miles did you travel to this area from your home? \_\_\_\_\_ miles (one-way)

7. How many hours did it take to travel from your home (include any stops made en route)? \_\_\_\_\_ hour(s) \_\_\_\_\_ minute(s)

8. What is the approximate total food and refreshment expenditures made by your household on this trip? (Include the value of any food and drink taken along from home) \$ \_\_\_\_\_

9. Is the amount you reported for food and refreshments in the previous question more, less, or the same as you

would have spent at home? (Check  $\checkmark$  one)     **MORE**                       **LESS**  
 **SAME**

10. During your visit to this site, how many people are you traveling with (including yourself)?  
 \_\_\_\_\_ People

11. Is everybody in your vehicle a member of the same household? (Check  $\checkmark$  one)

YES  
 NO. If NO, what percentage of the travel expenses will you pay? \_\_\_\_\_%

12. What type of vehicle did you drive (Check  $\checkmark$  one)?

Car             Pickup truck             Large van             Other (please specify) \_\_\_\_\_  
 SUV             Minivan             Motorcycle

How many cylinders does your vehicle have? (Check  $\checkmark$  one)    2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_  
 6 \_\_\_\_\_ 8 \_\_\_\_\_ 10 \_\_\_\_\_

13. We'd like to know more about your visit to this site. Could we give you a questionnaire to complete and mail back to

us in a postage paid self-addressed envelope?

YES                       NO

If YES, get name and home address below and **record ID number**. NOTE: This information is confidential.

**Please print clearly as this address will be used to notify you of any drawing winnings.**

NAME (please print): \_\_\_\_\_

HOME MAILING

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_

ZIP: \_\_\_\_\_

14. What year were you born? \_\_\_\_\_

15. Gender (Check  $\checkmark$  one)  M  F

16. What type of group were you traveling with on your visit (e.g., family, friends, etc.)? (Check  $\checkmark$  one)

- |   |   |
|---|---|
| <input type="checkbox"/> Alone  | <input type="checkbox"/> Two or more families or relatives together |
| <input type="checkbox"/> A couple   | <input type="checkbox"/> Family and friends                         |
| <input type="checkbox"/> Family with children                                       | <input type="checkbox"/> Two or more friends                        |
| <input type="checkbox"/> Organized group together<br>(boy scouts, youth club, etc.) |   |

17. Which of the following best describes your present situation? (Check  $\checkmark$  one)

- |  |   |
|--|---|
| <input type="checkbox"/> Single, no children   | <input type="checkbox"/> Single parent with children  |
| <input type="checkbox"/> Married, no children  | <input type="checkbox"/> Other (please explain) _____ |
| <input type="checkbox"/> Married with children |   |

18. What is the highest level of education you have completed? (Check  $\checkmark$  one)

- |  |   |
|--|---|
| <input type="checkbox"/> Eighth grade or less        | <input type="checkbox"/> College graduate     |
| <input type="checkbox"/> Some high school            | <input type="checkbox"/> Some graduate school |
| <input type="checkbox"/> High school graduate or GED | <input type="checkbox"/> Graduate degree      |
| <input type="checkbox"/> Some college                |   |

19. What was your household income, before taxes, for the 2001 year?

\$ \_\_\_\_\_

**THANK YOU** for participating in our study. When you have completed the question booklet, please return it to us in the provided postage paid self-addressed envelope. Upon receiving the completed question booklet, your name will be entered in a **drawing to win** fishing equipment or a gift certificate to this pay pond/lake. A total of **\$300** of prizes will be awarded.

I  
D NO.

\_\_\_\_\_  
\_\_\_\_\_



**APPENDIX II**

**Mail-back questionnaire**

# West Virginia West Virginia Pay Fishing

**2002  
Study**





Dear pay pond/lake angler:

Thank you for agreeing to share your opinions about your pay pond/lake fishing experience with us. Pay fishing involves paying a fee for the privilege of fishing a body of water where fish populations are enhanced by stocking fish. The questions in this booklet relate to your visit to the pay pond/lake where you were contacted by our interviewer.

This is your opportunity to help direct the future management of pay pond/lake fishing in the state of West Virginia. You are one of a small number of anglers who are being asked to give their opinions about their experience. Your responses are critical to the success of this project.

It should take you about 15 minutes to complete the question booklet. Your answers are strictly confidential and your name will in no way be connected with the results of the project. This study is being conducted by West Virginia University. Funding for this project is being provided by the US Department of Agriculture.

When you have completed the question booklet, please return it to us in the provided postage paid self-addressed envelope. Upon receiving the completed question booklet, your name will be entered in a drawing to win fishing equipment or a gift certificate to this pay pond/lake. A total of **\$300** of prizes will be awarded. We are grateful for the help you have given us. If you have any questions, please feel free to contact us at the following address:

Recreation, Parks, and Tourism Resources Program  
WVU Division of Forestry  
325-G Percival Hall, PO Box 6125  
Morgantown, WV 26505-6125  
(304) 293-3721 ext. 2410  
cpierska@wvu.edu

Sincerely,

Chad Pierskalla, Ph.D

Michael Schuett, Ph.D.

2002 FISHING STUDY

1. Approximately, how many years have you been fishing?  
\_\_\_\_\_ Years
2. Are you a member of any fishing or conservation organization?  
\_\_\_\_ Yes (please list \_\_\_\_\_) \_\_\_\_\_ No
3. Do you currently have a yearly West Virginia fishing license? (NOTE: A fishing license is not required when fishing at a privately owned pay pond/lake)  
\_\_\_\_ Yes  
\_\_\_\_ No
4. Considering all types of fishing (including public and private, pay fishing and licensed fishing), how many days in the last 12 months did you go fishing in each of the following locations?  
\_\_\_\_ Pond/lake  
\_\_\_\_ River/stream
5. How many days in the last 12 months did you pay to fish in the following pay fishing locations?  
\_\_\_\_ Pond/lake  
\_\_\_\_ River/stream
6. In what year did you first become interested in fishing at pay ponds/lakes?  
\_\_\_\_\_
7. How much money did you spend on fishing equipment in the last 12 months?  
\$ \_\_\_\_\_



The following questions relate only to that trip or visit when you were contacted by our interviewer.

#### THE FISH YOU CAUGHT AND TARGETED DURING YOUR VISIT

Please answer the following questions about the fish you caught during your visit to this pay pond/lake.

8. Please WRITE THE NUMBER of fish you caught today for each of the following species (Put a "0" if you didn't catch any or write "N/A" if the species of fish is not applicable to your visit today).

Rainbow trout     Steelhead     Largemouth Bass  
 Brook trout     Blue catfish     Smallmouth Bass  
 Brown trout     Shovelhead     Bluegill  
 Golden trout     Channel catfish     Other \_\_\_\_\_

9. What was the ONE PRIMARY fish species you most targeted during your visit to this pay pond/lake (CHECK  $\checkmark$  ONLY ONE)?

Rainbow trout     Steelhead     Largemouth Bass  
 Brook trout     Blue catfish     Smallmouth Bass  
 Brown trout     Shovelhead     Bluegill  
 Golden trout     Channel catfish     Other \_\_\_\_\_

10. For the species you primarily targeted on this trip, what was the average length and weight of the fish?

inches  
 pound(s)     ounce(s)

11. For the species you primarily targeted on this trip, what was the length and weight of the largest fish?

inches  
 pound(s)     ounce(s)

12. For the species you primarily targeted on this trip, how long did you spend fishing for them?

hour(s)     minute(s)

13. Please indicate how acceptable the following were to your experience while fishing for the species you primarily targeted during your visit.

	Very Unacceptable				Very Acceptable		
	-3	-2	-1	0	+1	+2	+3
Number of targeted fish caught	-3	-2	-1	0	+1	+2	+3
Average length of targeted fish caught	-3	-2	-1	0	+1	+2	+3
Average weight of targeted fish caught	-3	-2	-1	0	+1	+2	+3
Length of largest targeted fish caught	-3	-2	-1	0	+1	+2	+3
Weight of largest targeted fish caught	-3	-2	-1	0	+1	+2	+3
Length of time spent fishing targeted species	-3	-2	-1	0	+1	+2	+3

## RECREATION OPPORTUNITIES OF YOUR VISIT

We would now like to know about the experiences you had while fishing for the ONE PRIMARY fish species you most targeted during your visit to this pay pond/lake.

14. Please indicate how DESIRABLE each of the RECREATION OPPORTUNITIES listed below were as reasons for fishing for the species you primarily targeted during your visit to this pay pond/lake:

## RECREATION OPPORTUNITIES

Feel more free	-3	-2	-1	0	+1	+2	+3
Experience fishing excitement	-3	-2	-1	0	+1	+2	+3
Spend time with my family	-3	-2	-1	0	+1	+2	+3
Catch fish to eat	-3	-2	-1	0	+1	+2	+3
Escape from pressures	-3	-2	-1	0	+1	+2	+3
Enjoy the natural scenery	-3	-2	-1	0	+1	+2	+3
Improve my fishing skills and abilities	-3	-2	-1	0	+1	+2	+3
Catch a trophy-size fish	-3	-2	-1	0	+1	+2	+3
Do something challenging	-3	-2	-1	0	+1	+2	+3
Experience quiet	-3	-2	-1	0	+1	+2	+3
Keep physically fit	-3	-2	-1	0	+1	+2	+3
Learn more about nature	-3	-2	-1	0	+1	+2	+3
Catch the limit	-3	-2	-1	0	+1	+2	+3
Experience adventure	-3	-2	-1	0	+1	+2	+3
Experience solitude	-3	-2	-1	0	+1	+2	+3
Recover from everyday stresses	-3	-2	-1	0	+1	+2	+3
Be with people who share similar values	-3	-2	-1	0	+1	+2	+3
Rest physically	-3	-2	-1	0	+1	+2	+3
Catch large fish	-3	-2	-1	0	+1	+2	+3
Get away from crowds of people	-3	-2	-1	0	+1	+2	+3
Be alone	-3	-2	-1	0	+1	+2	+3
Rest mentally	-3	-2	-1	0	+1	+2	+3
Strengthen ties to my friends	-3	-2	-1	0	+1	+2	+3
Meet/observe people	-3	-2	-1	0	+1	+2	+3
Take a child fishing	-3	-2	-1	0	+1	+2	+3
Be in a wild area	-3	-2	-1	0	+1	+2	+3
Tell others about my visit	-3	-2	-1	0	+1	+2	+3

VALUE OF YOUR VISIT

The next few questions will help us to understand the value people place on their pay pond/lake fishing experience.

15. About how much did you/will you personally spend on the ENTIRE trip (both ways) for the following items. If you didn't spend any money for particular items, please indicate that by writing a "0".

- Gas and oil \$ \_\_\_\_\_
- Meals, food, and beverages \$ \_\_\_\_\_
- Equipment and tackle purchased just for this trip \$ \_\_\_\_\_
- Equipment rented just for this trip \$ \_\_\_\_\_
- Bait purchased just for this trip \$ \_\_\_\_\_
- Fees paid to catch fish \$ \_\_\_\_\_
- Lodging or camping fees \$ \_\_\_\_\_
- Other (please specify \_\_\_\_\_) \$ \_\_\_\_\_

TOTAL \$ \_\_\_\_\_

16. Suppose that your share of the expenses to visit this pay pond/lake increased, would you still have made the trip if they had been \$ \_\_\_\_\_ more (Check  one)?

Yes.

No. If no, would you have made the trip if your share of the expenses had been only \$1.00 more (Check  one)?

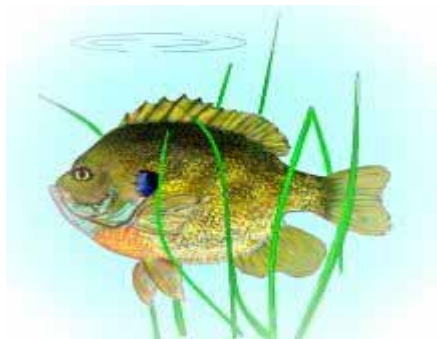
Yes.

No. If no, could you briefly explain why not?

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## VALUE OF FUTURE RECREATION OPPORTUNITIES

Please read the following description of HYBRID BLUEGILL before answering the next two questions.

**Hybrid bluegills** are a cross between a male bluegill and a female green sunfish. The panfish have the following characteristics:

- average size of 1/3 to 1/2 pound and 8 to 10 inches in length,
- somewhat stockier and thicker than true bluegill,
- aggressive nature when feeding,
- will bite a hook easily,
- popular flavor like a true bluegill,
- flesh is firm with a soft texture, white and flaky with little fat, and
- recognized as a “bread and butter” fish.

17. Imagine that everything about your experience at this pay pond/lake was the same, except that you were able to **catch and keep** an additional 10 Hybrid Bluegill that were each 1/3 pound and 8 inches in length. If your trip cost were \$ \_\_\_\_\_ more than your actual cost, would you still have made the trip under these circumstances (Check  $\checkmark$  one)?

\_\_\_\_ Yes, I would still have made the trip

\_\_\_\_ No. If no, would you have made the trip if your share of the expenses had been only \$1.00 more (Check  $\checkmark$  one)?

\_\_\_\_ Yes

\_\_\_\_ No. If no, could you briefly explain why not?

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18. Imagine that everything about your experience at this pay pond/lake was the same, except that you were able to spend an additional hour **catching and releasing** Hybrid Bluegill that were each 1/3 pound and 8 inches in length. If your trip cost were \$ \_\_\_\_\_ more than your actual cost, would you still have made the trip under these circumstances (Check  $\checkmark$  one)?

\_\_\_\_ Yes, I would still have made the trip

\_\_\_\_ No. If no, would you have made the trip if your share of the expenses had been only \$1.00 more (Check  $\checkmark$  one)?

\_\_\_\_ Yes

\_\_\_\_ No. If no, could you briefly explain why not?

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## SERVICES AND FACILITIES

19. We would like to know what types of services and facilities you would like to see provided at this pay pond/lake. Please tell us how IMPORTANT each of the following services and facilities would be in contributing to your enjoyment.

SERVICES AND FACILITIES							
Concessions	-3	-2	-1	0	+1	+2	+3
Picnic tables	-3	-2	-1	0	+1	+2	+3
Helpful and attractive information signs	-3	-2	-1	0	+1	+2	+3
Food served in restaurant	-3	-2	-1	0	+1	+2	+3
Tent campgrounds	-3	-2	-1	0	+1	+2	+3
Overnight accommodations (cabins or other rustic facilities)	-3	-2	-1	0	+1	+2	+3
Helpful roadside signs	-3	-2	-1	0	+1	+2	+3
Fishing contests	-3	-2	-1	0	+1	+2	+3
Clean and attractive restrooms	-3	-2	-1	0	+1	+2	+3
Playground equipment	-3	-2	-1	0	+1	+2	+3
Benches	-3	-2	-1	0	+1	+2	+3
Facilities were maintained	-3	-2	-1	0	+1	+2	+3
Local tourism brochures	-3	-2	-1	0	+1	+2	+3
Pet areas	-3	-2	-1	0	+1	+2	+3
Maps of the area	-3	-2	-1	0	+1	+2	+3
Bait and tackle sales	-3	-2	-1	0	+1	+2	+3
Hours the facility is open	-3	-2	-1	0	+1	+2	+3
Rod and reel rentals	-3	-2	-1	0	+1	+2	+3
Fish cleaning area for you	-3	-2	-1	0	+1	+2	+3
Fish cleaning by the site operator	-3	-2	-1	0	+1	+2	+3
Shelters	-3	-2	-1	0	+1	+2	+3
Facilities were accessible	-3	-2	-1	0	+1	+2	+3

## SITE CHARACTERISTICS

20. We would like to know if characteristics of the area you visited influenced your ability to achieve your desired experiences and benefits.

Please indicate how IMPORTANT each of the following site characteristics were or would be in increasing your ability to achieve your desired recreation opportunities. (Circle the ONE response that best describes how important EACH characteristic was or would be).

Site Characteristics							
Number of ponds/lakes	-3	-2	-1	0	+1	+2	+3
Size of the pond(s)/lake(s)	-3	-2	-1	0	+1	+2	+3
Vehicle access to the area	-3	-2	-1	0	+1	+2	+3
Natural looking environment	-3	-2	-1	0	+1	+2	+3
Facilities (restrooms, picnic tables, etc.) provided	-3	-2	-1	0	+1	+2	+3
Staff available to talk to visitors	-3	-2	-1	0	+1	+2	+3
Restrictions on number of people allowed in the area	-3	-2	-1	0	+1	+2	+3
Regulations on visitors	-3	-2	-1	0	+1	+2	+3
Trees	-3	-2	-1	0	+1	+2	+3
Lake or pond trails not heavily trampled	-3	-2	-1	0	+1	+2	+3
Grounds in good condition	-3	-2	-1	0	+1	+2	+3

## ENCOUNTERS WITH OTHER PEOPLE

21. What was the maximum number of anglers you saw fishing (at one time) in the same pond/lake as you?

\_\_\_\_\_ Anglers

How ACCEPTABLE was the maximum number of other people you saw fishing at one time (CIRCLE ONE)?

Very Unacceptable						Very Acceptable
-3	-2	-1	0	+1	+2	+3

22. Please indicate the extent to which each statement below describes your general feelings about this pay pond/lake.

I find that a lot of my life is organized around this pay pond/lake	-2	-1	0	+1	+2
I enjoy doing the type of things here more than in any other area	-2	-1	0	+1	+2
If I had been in another area my experience would have been the same	-2	-1	0	+1	+2
This is the best place for what I like to do	-2	-1	0	+1	+2
I feel like this place is a part of me	-2	-1	0	+1	+2
I identify strongly with the people that come to this place	-2	-1	0	+1	+2
I wouldn't substitute any other area for doing the types of things I did here	-2	-1	0	+1	+2
I think a lot about coming here	-2	-1	0	+1	+2
No other place can compare to this area	-2	-1	0	+1	+2

#### ACTIVITIES PARTICIPATED IN THE LAST 12 MONTHS

23. We have listed a number of outdoor recreation activities. Please check the activities that you have participated in during the last 12 months (CHECK  ALL THAT APPLY).

- |   |   |
|---|---|
| <input type="checkbox"/> Sightseeing  | <input type="checkbox"/> Motorboating       |
| <input type="checkbox"/> Backpack camping                                   | <input type="checkbox"/> Rafting            |
| <input type="checkbox"/> Camping near vehicle                               | <input type="checkbox"/> Canoeing           |
| <input type="checkbox"/> Picnicking   | <input type="checkbox"/> Kayaking           |
| <input type="checkbox"/> Driving for pleasure                               | <input type="checkbox"/> Jet skiing         |
| <input type="checkbox"/> Four wheel drive/All-terrain vehicle (ATV) driving | <input type="checkbox"/> Hunting            |
| <input type="checkbox"/> Hiking (day use)                                   | <input type="checkbox"/> Fishing            |
| <input type="checkbox"/> Walking  | <input type="checkbox"/> Rock climbing      |
| <input type="checkbox"/> Jogging  | <input type="checkbox"/> Target shooting    |
| <input type="checkbox"/> Mountain biking                                    | <input type="checkbox"/> Watching wildlife  |
| <input type="checkbox"/> Road biking  | <input type="checkbox"/> Birding            |
| <input type="checkbox"/> Swimming   | <input type="checkbox"/> Nature photography |
| <input type="checkbox"/> Horseback riding                                   | <input type="checkbox"/> Others: _____      |

24. How often did you watch fishing shows or tournaments on television in the last 12 months? (Check  $\surd$  one)

I didn't watch shows/tournaments on television in the last 12 months

5 or less shows/tournaments in the last 12 months

6 to 10 shows/tournaments in the last 12 months

11 to 15 shows/tournaments in the last 12 months

16 or more shows/tournaments in the last 12 months

25. If you could not have visited this fishing location, what other fishing location would you have fished instead? \_\_\_\_\_

Why would you select that location? \_\_\_\_\_

\_\_\_\_\_

26. Is there anything else you would like to tell us about your visit to this pay pond/lake?

**Thank you for your time and cooperation! Please return this question booklet in the enclosed postage-paid envelop to:**

Recreation, Parks, and Tourism Resources Program  
WVU Division of Forestry  
325-G Percival Hall, PO Box 6125  
Morgantown, WV 26505-6125

### APPENDIX III

#### Postcard reminder

Dear pay pond / lake angler,

During your recent visit to a pay pond / lake, a WVU researcher gave you a questionnaire to complete after your fishing visit. The questionnaire asked about the visit when you were contacted by our researcher.

If you already completed and returned the questionnaire, please accept our sincere thanks. If not, please do so today. You are one of a few anglers asked to participate in this study, and your response is very important to us. Once we receive the completed questionnaire, your name will be entered in a drawing to win fishing equipment or a gift certificate to the pay pond / lake where you were contacted. A total of **\$300** of prizes will be awarded. Thank you!

Sincerely,

Chad Pierskalla, Ph.D.

Michael Schuett, Ph.D.

## APPENDIX IV

### Follow-up letter

July 29, 2002

«Address»  
«City», «State» «Zip»

Dear «Name»,

A few weeks ago a West Virginia University researcher gave you a questionnaire while you were fishing at «Location». Please accept our sincere thanks if you have already returned it. If you have not mailed it back to us, please do so today. Upon receiving your questionnaire, your name will be entered in a drawing to win fishing equipment or a gift certificate to «Location». A total of **\$300 of prizes** will be awarded.

Enclosed you will find a questionnaire that asks about your visit to «Location». Knowing what you think about pay ponds/lakes in West Virginia is important to making the best decisions about their management. By completing your questionnaire, you are one of only a few anglers asked to give their opinions about their pay fishing experience. For the results of this study to truly represent pay fishing anglers, it is important that each questionnaire be completed and returned. It should take no more than 15 minutes to complete. Please return it in the self-addressed, postage-paid envelope provided.

Please be assured your response to this study is voluntary. A questionnaire identification number is printed on the cover of the questionnaire so that we can check your name off of the mailing list when it is returned. The list of names will be destroyed and never be connected with the results in any way. Protecting the confidentiality of your responses is very important to us. If for any reason you prefer not to answer the questionnaire, please let us know by returning a note or a blank questionnaire in the postage-paid envelope.

Thank you very much for helping with this important study. If you have questions or concerns, please contact us at 304-293-2941 ext. 2410.

Sincerely,

Chad Pierskalla, Ph.D.

Michael Schuett, Ph.D.