ANALYZING THE ECONOMIC POTENTIAL OF BIG CREEK IN THE FRANK CHURCH WILDERNESS OF IDAHO BY UNDERSTANDING THE HUMAN DIMENSIONS OF RECREATIONAL FISHING

Presented to:

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ABSTRACT

Intensive fishing by outfitted and/or independent anglers is increasingly seen on Big Creek, a tributary of the Middle Fork of the Salmon River in Idaho. Most likely, heightened recreational use in this region is creating ecologic and economic effects. Unfortunately, fishing research on Big Creek is limited and outdated. This proposed study seeks to understand and analyze the profile and motivations of Big Creek anglers and their subsequent economic impact on the area. The research method will consist of (1) data collection through on-site interviews of roughly 200 anglers. I will identify key anglers' demographic information, main access points from which anglers reach Big Creek, dimensions of motivations of Big Creek fishermen and how much revenue goes into the area through the outfitting of fishing guides and equipment; and (2) data analysis to investigate relationships within the demographic and motivational data. This research is built upon previous work and uses consistent question wording and response formats with known reliability and validity in order to be comparable to both past and future research. Findings from this research will be presented in April 2005 in a comprehensive report, professional presentations, poster at an UI undergraduate research symposium, private faculty meeting with CNR faculty and students, and/or in RRT classes.

INTRODUCTION AND BACKGROUND

Providing outdoor recreation opportunities is an important goal of rural development coordinators and resource managers. Furthermore, it is a fisheries manager's objective to provide anglers with quality recreation opportunities. However, understanding the diverse motivations of the angling public and monitoring public demand for diverse fish and wildlife services are among the greatest challenges facing fisheries and wildlife managers. Consequently, it has also been difficult for development coordinators and resource managers to gauge the effect angling has on local economies (Wright 1997).

It has long been established that a quality fishing experience involves many dimensions other than just catching fish (Hendee 1974, Driver 1977, Moeller and Enkelker, 1972). Others, notably Fedler and Ditton (1994), Kaltenborn & Aas (1995) and Sanyal and McLaughlin (1992) argue for identifying relevant subgroups of anglers by classifying them according to their consumptive orientation. A synopsis of over 100 motivation/satisfaction related studies (Sanyal and McLaughlin, 1992) shows that the needs for "escape" and for "experiencing nature" have consistently been rated as the most important motivational factors for anglers. A similar compilation of angler motivational research was presented by Fedler and Ditton (1994) who arrived at similar conclusions,

and went on to suggest that future researchers need to use standard motive statements with consistent question wording and response formats in order to build upon previous work. They also stated that little more can be learned about angler motivations at a population level. Instead future research should focus on angling sub-populations on the basis of fishing mode and preferences.

Recognizing that the average angler does not exist, it makes little sense to continue to generate summary profiles of anglers when management policies must be tailored for particular fisheries and specific anglers (Graefe 1981). Future research must be focused on determining angler motivations of specific segments of anglers. Researching specific angler segments to determine regional or site specific motivations will allow fishery managers and rural development coordinators to anticipate angler responses to specific changes in management plans and ensure fishing opportunities are provided to meet angler needs.

Study Area

The Taylor Ranch Wilderness Station, established by the University of Idaho in 1970, lies in the center of the Frank Church-River of No Return Wilderness in Central Idaho, the largest contiguous wilderness segment in the lower forty-eight states. The ranch is located seven miles up Big Creek from its confluence with the Middle Fork of the Salmon River. Big Creek is a refreshing escape from the pressures and tensions of life. Communication with the outside world is by backcountry radio or satellite phone and power is produced by a small on-site hydro-electric plant. With 2.3 million acres of pristine wilderness, hundreds of miles of pack trails, and scores of high mountain lakes and native trout streams, the wilderness area offers unparalleled recreation and adventure opportunities.

Recently, an influx of outfitted and independent fishermen has been noted in Big Creek, and their numbers have been steadily rising for a number of years, but not much is known about the anglers' background or motivations for fishing. For certain, the majority of anglers, either guided or independent, arrive to the area by plane from McCall, Cascade, Salmon, and Boise or hiking in from the Big Creek Trail head.

Problem being Addressed and Justification

Fisheries and wildlife managers, rural development coordinators, and undoubtedly the Wilderness management agency (USFS) need to be aware of and have baseline information on the Big Creek angling public. Recreationists are not a static segment. Demographics, motivations and expectations behind fishing are in constant fluctuation; therefore information on today's anglers is more relevant to decision-making than yesterday's information.

During the past thirty years many studies have been conducted on the concepts of multiple motivations/satisfactions and how they relate to anglers. Early research illustrated how the motivations of anglers were extremely diverse (Knopf, et al 1973;

Hendee 1974) and established that much research was needed to fully understand this heterogeneous group of recreationists. The general finding of all the research that followed recognized that anglers are motivated by a "package" of dimensions other than traditional catch success. In order to determine the future economic and ecological effects created by Big Creek anglers, it is crucial to first understand and analyze their motivations in reaching isolated locations. Determining angler motivations is also central to providing them with quality opportunities and is the focus of extensive research at this time in other parts of the country. This proposed study strives at understanding these dimensions that can greatly help in managing the ecosystem for its sake and the sake of its users.

RESEARCH OBJECTIVE

The goal of this study is (1) to identify specific motivations and the profile of Big Creek anglers in order to understand the economic potential of the operation, enabling (2) Taylor Ranch, as a premier field research facility in the state, to utilize the findings in future ecosystem and recreational management research endeavors.

Specific research tasks to achieve this objective are:

1. Identify key demographic information on Big Creek fishermen.
2. Locate the origins (home residence) and main access points (trailheads and airstrips) from which anglers reach Big Creek.
3. Identify and measure key dimensions of motivations important to Big Creek fishermen.
4. Estimate how much revenue goes into the area thru the outfitting of fishing guides and equipment.

RESEARCH METHODS AND RELATED ACTIVITIES

Data Collection

This research is built upon previous work (Driver & Knopf 1976; Sanyal and McLaughlin, 1992) and uses consistent question wording and response formats with known reliability and validity in order to be comparable to both past and future research. To perform the specific tasks (1-4) listed above; a survey of roughly 200 anglers in the Big Creek drainage will be taken using on-site interviews (Appendix A). The survey has 22 questions and was designed to obtain answers to the following research questions:

1. What are the demographics of Big Creek anglers?
2. In regards to how much money is spent by the anglers; what is the economic impact on the area?
3. What are the primary motivations behind fishing in Big Creek?
4. What is the turnover rate of anglers in Big Creek, i.e. how likely will they be coming back and how often?
5. How important is catching fish for Big Creek anglers?

6. What are their origins and what are the major travel modes to and within Big Creek?

Questionnaires were designed using the Total Design Method (Dillman 1978; Dillman 2001; Salant & Dillman, 1984). The questionnaire includes several different types of response formats (close-ended with ordered and unordered choices, partially closed ended, and open ended). Response formats for all interval scales will be constructed using proven magnitude estimators (Bass et al 1974). This will ensure that all interval measures are true equal interval scales and that the data can be analyzed quantitatively, and the findings compared across sub-populations or with the findings of other studies such as Wright's (1997) using similar scale development procedures. Human subjects' approval for this project will be obtained from the University of Idaho Human Assurances Committee.

The survey is subject to slight modifications according to further refining. Data will be collected during the summer of 2004 from the 4th of July to the 25th of August. Anglers will be surveyed at random depending on group size at their fishing site, either prior to or immediately after fishing, no angler will be disturbed while actively fishing.

According to their access point, and whether they are guided or independent, Big Creek fishermen are comprised of three groups (Akenson 2004), all of which constitute the sampling population for this study.

Group 1: The most numerous group arrives through guided float trips down the Middle Fork of the Salmon River and often hike up Big Creek to fish. Their trip normally lasts half-a-day to a day.

Group 2: The second big group participates in outfitted trips departing from Cabin Creek, and they access Big Creek on horseback, fishing up and down it.

Group 3: The smallest group arrives in the area from a variety of points, most are "on-their-own" fishermen who were either dropped off by air-taxi at Soldier Bar or Acorn airstrips, or hiked from Smith and Cabin Creek.

All groups will be interviewed with identical instruments. Data will be collected concerning social characteristics, consumption orientation, and motivations for fishing at Big Creek. Social characteristics such as age, income, place of residency, educational background, and days fished per year, along with dimensions of motivation such as social, skills, equipment, personal values, consumption, and solitude will be used to describe anglers in the sample and to help explain differences within the sample. Income and involvement (number of days fished per year, number of modes and forms of fishing participated in, and participation in fishing related activities) will be measured as categorical variables. GPS coordinates will be taken alongside the survey in order to establish fishing points and number of anglers using them, with the idea that once these data are collected, researchers can track future increases or decreases in fishing and site use.

None of the groups are deemed difficult to contact since they will be interviewed at their fishing site. Akenson (2004) pointed out one important factor to keep in mind while interviewing--the anglers' willingness to participate in the study. For this, Jim Hunter (Idaho Fish and Game Conservation Officer for Big Creek), and Clem Pope (USFS, McCall), who are both knowledgeable on the area and who undoubtedly deal with this population segment will be contacted so they can guide me in how to interview the anglers. Also, a complimentary gift, perhaps a fly set, line, or other fishing related item, along with the customary business card will be offered to participants and is included as part of this study's budget.

The interviews will be performed along four different stretches of water that have a combined distance of 32 miles (Table 1). These stretches have been indicated on the maps found in Appendix B. Access to these stretches will most likely be done on foot, unless otherwise suggested by Taylor Ranch staff.

Table 1. Characteristics of the Sampling Area

Sampling Area	Location	Distance (miles)	Surveying Time (days)
Stretch 1	On the Middle Fork of the Salmon, this sampling stretch will include 3 miles north and south of the confluence with Big Creek.	6	11
Stretch 2	On Big Creek, this stretch runs from the confluence with the Middle Fork of the Salmon west to Taylor Ranch.	7	13
Stretch 3	On Big Creek, extending from Taylor Ranch upstream to Cabin Creek.	7	14
Stretch 4	On Big Creek, extending from Cabin Creek upstream to the confluence of Monumental, Crooked, and Big Creek.	12	14

Research Activities

Table 2 summarizes the activities to be performed on a typical research day in the Frank Church Wilderness.

Table 2. A Snapshot of a Typical Research Day

Time	Activity
During the first 2 days at a stretch	• Locate the active fishing holes through observation. • Locate campsites for my use that are out of the anglers' way, limiting our encounter to one instance—the interview. • Locate the anglers' access routes to the fishing holes.
6-9am	Locate and record from a distance the location of early-bird casters in the stretch studied.
10-12am	Return to locations pinpointed in the early morning to interview anglers. • If anglers are hesitant to participate, I'll suggest a small gift in return for their help. • Participants who completed the survey will receive mine and my mentors' contact information in case of questions/concerns.
12am-4pm	The midday sub-optimal fishing time will serve to: • Input morning data into computer. • Eat • Participate in Ranch activities if close by. Interviewing sessions will be conducted at these times if a substantial number of anglers is noted.
4pm-Early Dusk	Return to locations pinpointed in the early morning for further interviewing.
Late Dusk-Evening	Return to Taylor Ranch or campsite.
In case of low angler turnout	Participate (if permission granted) in interns' projects, which offer great opportunity to learn about the area's ecosystems, and of other research and sampling methods that can surely be put to use in my future career.

Possible Study Limitations

The number of anglers encountered during the study is difficult to determine, their numbers may fluctuate for a myriad of reasons. It may be that surveying all 200 participants will take the proposed eight weeks, or it could unexpectedly take twice as long or twice as short. Jim Hunter will be contacted for estimates on the number of anglers.

Data Analysis and Measurements

Once data collection concludes in Big Creek, the SPSS statistical program found on the UI campus network will be used to cross-analyze all the demographic and motivational data gathered using the techniques learned in RRT 310- Social Research Methods in Conservation. In this course, I've learned to use quantitative, qualitative, and mixed approaches to studying social aspects, how to choose and apply selective research methods in survey design, program evaluation, reporting results, and interpreting research.

To quantify the consumptive orientation of anglers, agreement responses to statements on the importance of catching, keeping and eating fish will be combined to form a scale (Fedler and Ditton, 1986). These three items are patterned after motivational work by Driver (1976) and Driver and Knopf (1976), and further refined by Graefe (1981). The three items elicit responses on a five point scale ranging from strongly disagree to strongly agree and a summated score will be calculated from the responses to the three items. Summated consumptive scores will range from 3 to 15, and anglers with scores ranging from 3 through 7 will be classified as having low-consumptive orientation. Anglers with scores ranging from 8 through 11 will be classified as having mid-consumptive orientation, and anglers with scores from 12 through 15 will be classified with high consumptive orientation. Regardless of the denomination of the stream (i.e. catch and release, or possession limits) these motivations are still of high value in determining angler recreational satisfaction.

To quantify motivational dimensions, items patterned after motivation work by Driver and Brown (1975) will be used. These specific dimensions were selected because they consistently varied in past research. Rosenthal et al (1982) explored the construct validity of instruments used in measuring recreationists' preferences and determined that the Recreation Experience Scales designed by Driver (1977) were valid for measuring recreationists' preferences and suitable for continued use in recreation management and planning. The motivational items will be rated by each respondent using a 5-point interval scale ranging from "not important" to "extremely important" as a reason for fishing that day.

The analyzing phase of the study is expected to end by November, 2004. During this time, I will be working under the supervision of professors Ed Krumpe and Nick Sanyal in order to accurately provide present and future Taylor Ranch researchers, fisheries and wildlife managers, and rural development advisors, with "baseline" statistics on the area's recreational fishing.

Deliverables

A comprehensive report that includes title page, abstract, introduction and background, research objectives, research methods, results and discussion, conclusions, and literature references will be presented by no later than April 2005. The findings will be also presented in: (1) Professional presentations, (2) Poster at an UI undergraduate research

symposium and (3) Private faculty meeting with CNR faculty and students, and/or in a RRT classes.

TIMETABLE

Date	Activity
April 1st-May 1st	Survey instrument revision, formatting and printing
May 1st-June 1st	• Order research equipment and office supplies • Contact Jim Hunter and Clem Pope
June 1st-June 29th	Prepare camping equipment, travel arrangements
June 30th	Depart for Taylor Ranch
July 1st	Arrive in Taylor Ranch
July 2nd-July 3rd	Orient myself in study area, unpack, revise interview protocol
(*)*July 4th-July 13th*	*Data collection at stretch # 1*
(*)*July 14th -July 27th*	*Data collection at stretch # 2*
(*)*July 28th -August 10th*	*Data collection at stretch # 3*
(*)*August 11th -August 25th*	*Data collection at stretch # 4*
August 25th	Depart Taylor Ranch
August 26th	Arrive in Moscow
September 1st- November 1st	Analyze Data
November 1st- December 1st	Write report
January 1st-February 1st	Develop multimedia presentation of research results
February 1st-March 1st	• Present final draft of report • Present multimedia presentation at UI undergraduate research symposium, a private faculty meeting with CNR faculty and students, and/or in a RRT class.

(*) *Italicized dates* are only for structural purposes. In the likely event of low angler turnout at any segment, I will consider moving onto a more visited segment to get the interviews for that site done ahead of schedule, later on coming back to finish the interviews left incomplete in the previous segment. I will also seek advice form the Taylor Ranch managers concerning sampling and logistics.

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Appendix A
Survey Instrument

This first set of questions asks about your general fishing experiences.

1. What kind of fishing do you usually engage in? (*Please check as many as apply*)

- ☐ SPIN FISHING
- ☐ FLY-FISHING
- ☐ BAIT FISHING
- ☐ FISHING FROM A BOAT OR RAFT
- ☐ SHORE FISHING
- ☐ FLOAT TUBE

2. When did you first start fishing? (*Please write in the year)*

I STARTED FISHING IN 19_____

3. About how many days do you spend fishing each year? *(Please check one)*

- ☐ 1 – 3 DAYS A YEAR
- ☐ 4 – 10 DAYS A YEAR
- ☐ 11 – 20 DAYS A YEAR
- ☐ 21 – 30 DAYS A YEAR
- ☐ 31 OR MORE DAYS A YEAR

Next, some questions about your fishing here TODAY.

4. How did you get from your home to Big Creek for this trip? *(Please all that apply)*

- ☐ PRIVATE PLANE
- ☐ COMMERCIAL PLANE
- ☐ HORSEBACK
- ☐ HIKE

5. Excluding travel from your home to the Big Creek, how did you travel around within this area?

TRAVEL MODE	How often do you use each travel mode in the Big Creek area? *(Please circle one response for each travel mode)*				
On foot	ALWAYS	VERY OFTEN	FAIRLY OFTEN	OCCASIONALLY	NEVER
On horse back	ALWAYS	VERY OFTEN	FAIRLY OFTEN	OCCASIONALLY	NEVER
Boat/float tube	ALWAYS	VERY OFTEN	FAIRLY OFTEN	OCCASIONALLY	NEVER

6. About how far from your entry point (base camp) did you travel up and down as you fished? *(Please write in your answer)*

Big Creek_____ MILES

Middle Fork of Salmon River_____MILES\

7. How long did you fish on Big Creek? *(Please write in your answers in both spaces below)*

_____HOURS

_____Days

8. Below is a list of possible reasons for fishing. Please tell us how important each one is to you as a reason to fish **here today**.

REASONS FOR FISHING HERE TODAY	How important is each reason to you? (*Please circle one response for each reason*)				
For the stimulation and excitement of fishing.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Releasing or reducing some built-up tensions while I fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Showing others I can fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Developing personal spiritual values.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Competing against other anglers.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Filling my daily catch limits.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Catching different kinds of fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Catching trophy fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Catching *any* fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Learning new fishing skills from others.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Getting away from crowds.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Testing my fishing abilities.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Testing flies that I have tied.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT

REASONS FOR FISHING HERE TODAY

	How important is each reason to you? (*Please circle one response for each reason*)				
Sharing what I know about fishing with others.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Being with friends while I fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Learning more about the river or stream.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Being with my family while I fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Seeing fish jump or rise.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Testing and using my fishing equipment.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Developing close friendships with my fishing companions.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Thinking about my personal values while I fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Fishing in this area because I am attached to it.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
Learning more about fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
To see if I could fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
To be close to nature while I fish.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT
To get away from the usual demands of life while I am fishing.	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	QUITE IMPORTANT	EXTREMELY IMPORTANT

9. Over the last couple of years how often have you done each of the following?

	How often have you done each of the following? (*Please circle one response for each item*)			
Read fishing magazines.	NEVER	A FEW TIMES A YEAR	ALMOST EVERY MONTH	USUALLY A FEW TIMES EACH MONTH
Talk about fishing with my friends and family.	NEVER	A FEW TIMES A YEAR	ALMOST EVERY MONTH	USUALLY A FEW TIMES EACH MONTH
Look at fishing equipment in stores or catalogues.	NEVER	A FEW TIMES A YEAR	ALMOST EVERY MONTH	USUALLY A FEW TIMES EACH MONTH

10. People fish for many reasons. **In general**, how important are catching, keeping and eating fish to you? For each of the following statements about catching fish please tell us how strongly you agree or disagree?

STATEMENT	How do you feel about each statement (*Please circle one response for each statement*)				
Fishing can be good even when I don't catch fish.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
When I go fishing, I'm just as happy if I don't catch a fish.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
The best fishing is when I can keep the fish I catch.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
Catching a trophy fish is the best reward for me.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
A full stringer is the best indicator of a good fishing trip.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
I am not satisfied unless I catch at least one fish.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
Catching fish to eat at home is an important part of fishing.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
The more fish I catch the happier I am.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
The bigger the fish I catch, the better the fishing.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
Fishing is best when I catch many fish.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
I'm just as happy if I don't keep the fish I catch.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY
I am happiest with fishing when I catch fish that are hard to catch and land.	AGREE STRONGLY	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	DISAGREE STRONGLY

11. How would you evaluate your fishing experience on Big Creek on this trip? *(Please check one response)*

EXCELLENT (A)	GOOD (B)	FAIR (C)	POOR (D)	VERY POOR (F)
☐	☐	☐	☐	☐

12. How likely will you be to make a return trip to Big Creek in the next year? *(Please check one response)*

CERTAIN TO RETURN	VERY LIKELY TO RETURN	FAIRLY LIKELY TO RETURN	UNLIKELY TO RETURN	CERTAIN TO **NOT** RETURN
☐	☐	☐	☐	☐

13. In this section we would like you to report on the expenses you incurred for this trip.

LOCATION/ CLOSEST TOWN	TRANS-PORTATION Gas, air fare, car rental, parking, etc.	FEES AND LICENSES	WILDERNESS FOOD AND LODGING Prepaid groceries, etc.	NON-WILDERNESS LODGING AND FOOD Hotel/motel, cabins, camping	EQUIPMENT Tackle, clothing, camping gear, maps, etc.,	OUTFITTER COSTS	OTHER $	OTHER Please Describe
For Example: McCall	$35.00	$52	$127	$0	$212	$0	$12	Telephone

Finally, a few questions about you.

14. On this visit, what type of group were you with? (*Please check (√) one.*)

_____ ALONE _____ WITH FRIENDS _____ OUTFITTED

_____ WITH FAMILY _____ WITH FAMILY AND FRIENDS

_____ OTHER (*Please Describe*:_____)

15. On this visit, how many people were in your including yourself?

_____ NUMBER OF PEOPLE

16. Did you use a fishing guide on this trip? (*Please check one.*)

☐ YES ☐ NO

Please explain why, or why not.

_____

17. What is your present age? *(Please enter number of years)*

____ YEARS

18. What is the Zip Code of your current residence?

_____

19. How many years of formal education have you completed? (*Circle one number*)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 +
Elementary School						JR. High--High School						College				Graduate School			

20. Currently, are you: *(Please check all that apply)*

- ☐ EMPLOYED FULL—TIME
- ☐ EMPLOYED PART—TIME
- ☐ UNEMPLOYED
- ☐ RETIRED
- ☐ HOMEMAKER
- ☐ STUDENT

We would appreciate you answering the last question. If, however, you feel this is a private matter we respect your decision to not answer.

21. Which of the following best describes your total family income before taxes in **1995**? *(Please check one)*

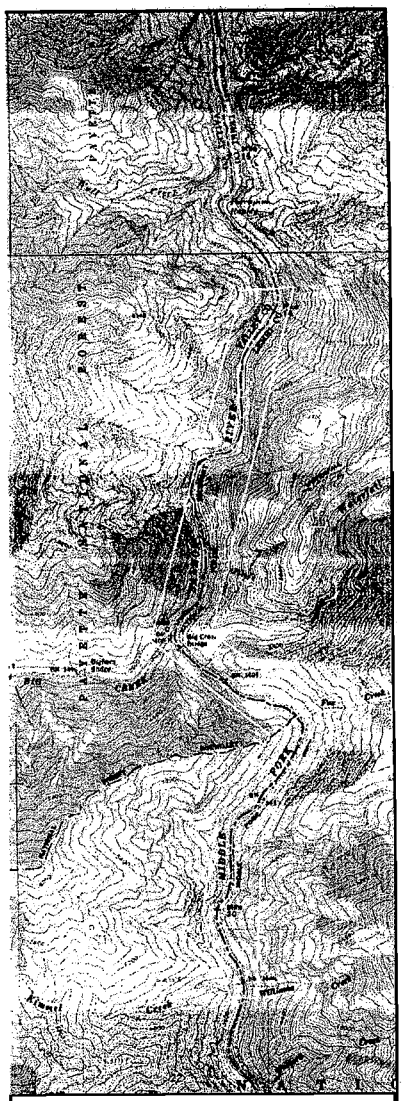
- ☐ LESS THAN $20,000
- ☐ $20,001 – $40,000
- ☐ $40,001 – $80,000
- ☐ $80,001 – $120,000
- ☐ $120,001 OR MORE

Did you encounter any problems while you were fishing along Big Creek? Please explain below.

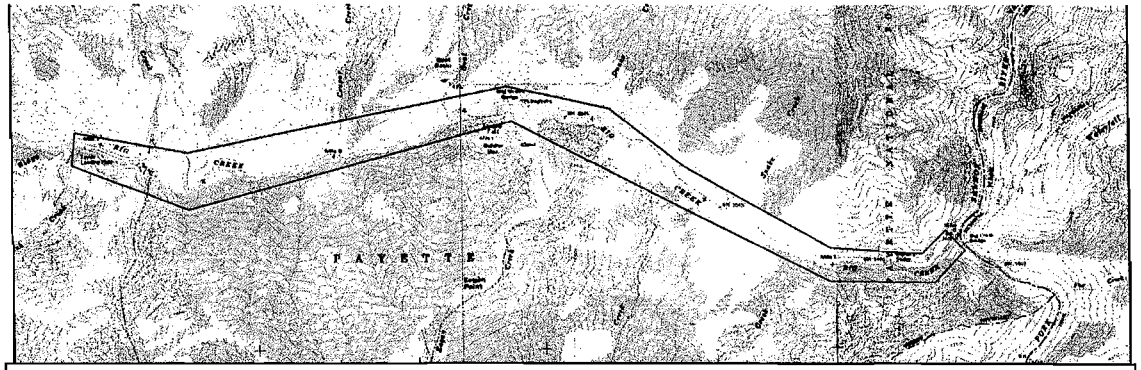
THANK YOU

Department of Resource Recreation and Tourism
College of Natural Resources
University of Idaho
MOSCOW ID 83844-1139

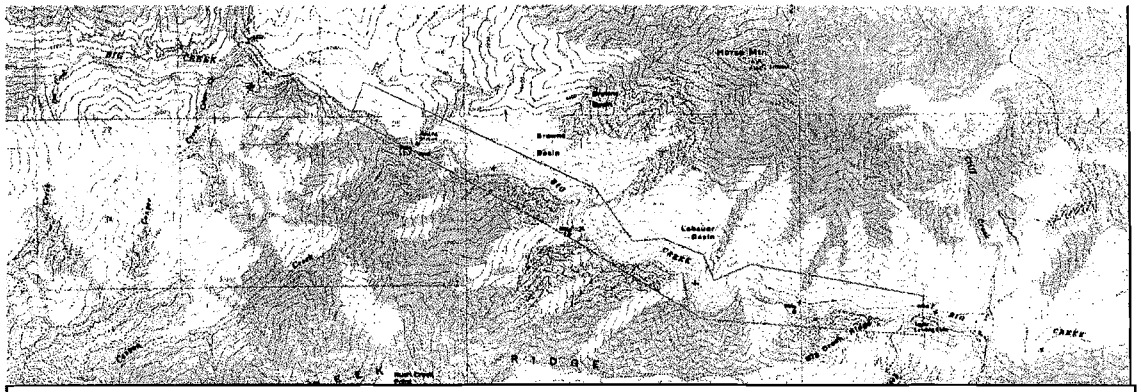
Appendix B
Maps



Stretch 1. 6 miles of the Middle Fork of the Salmon



Stretch 2. Confluence of Middle Fork of the Salmon and Big Creek 7 miles up to Taylor Ranch



Stretch 3. 7 miles from Taylor Ranch up to Cabin Creek.

Stretch 4. 12 miles from Cabin Creek up to Crooked Creek Bridge

Appendix C
Budget

Bernardo Alvarez
RRT Study Budget
2/8/2004

Appendix C

Description	Amount ($)	
Student Salary		
Sampling: Calculated at $8.6/hr, sampling for 8hr/day, 5 days/week, for 8 weeks	2752	
Analysis, preparation: Done on own time	0	
SUBTOTAL		2752
Research Equipment		
GPS system	200	
GPS software and computer cable	70	
Laptop (provided)	0	
SPSS software (provided at UI)	0	
SPSS guide to Data Analysis (provided)	0	
Surveys	200	
Complimentary fly. Calculated at $0.5x200	100	
SUBTOTAL		570
Office Supplies		
Pens, markers, pencils (provided)	0	
Waterproof interviewee binders	13	
Stapler, staples (provided)	0	
Storage binders (provided)	0	
Paper (provided)	0	
Calculator (provided)	0	
SUBTOTAL		13
Travel Supplies and Expenses		
Airfare (1 round trip to Taylor Ranch by mail plane)	100	
Backpack (provided)	0	
Incidental travel expenses	25	
Extensive personal first aid kit	25	
Mace Bear Spray 225 Grams	35	
Insect repellant	5	
Fly Fishing Vest (for identification and supply carrying)	25	
SUBTOTAL		215
Food and Lodging Expenses		
Food: Calculated at $7/day for 55 days	385	
Lodging at Ranch (Stretches 2 and 3)	0	
MSR Whisperlite Stove and Cook Set Package	95	
MSR Fuel Bottle 33 fl..oz. ($12/each, need 2)	24	
KATADYN Hiker™ Water Filter	65	
The North Face Rock 22 Tent	125	
Coleman white gas stove fuel	6	
SUBTOTAL		700
TOTAL		**4250**

Appendix D

Bernardo Alvarez' Resume

BERNARDO ALVARÉZ

104 S. Asbury; Moscow, ID 83843
(208) 883-4382
alva5137@uidaho.edu

OBJECTIVE

To gain hands on experience in the areas of resource and hospitality management, so that my marketing degree can efficiently and effectively promote tourism destinations that ensure the economic and ecological wellbeing to their inhabitants and nature respectively.

EDUCATION

University of Idaho (UI) Moscow, Idaho. 2001-Present (GPA: 3.95).

B.S, major in Resource Recreation and Tourism, B.S, major in Marketing. Expected May, 2006

SKILLS

Computer Proficient

Fluently trilingual in Spanish, English, and French.

RESEARCH EXPERIENCE

Aquaculture Research Institute (Summer 03-Present):

Conducts data collection and sample analysis in experiments on Native American plants in UI greenhouses using a variety of soil and water treatments, with the goal of finding how tribes can grow native harvests using fisheries' effluent.

USDA-SBIR Grant. UI-Aquaculture Research Institute (Summer 03-Present):

Horticultural component: Collects and record data from experiments in the greenhouse facilities.

Social Component: Prepared the teaching material and teach Native American youth in the science and technology of growing Native American Plants.

Idaho Panhandle National Forest Project (Summer 02):

Conducted interviews in N. Idaho, gathered information in English and Spanish for a regional social assessment included in the USFS plan of 2003. In charge of searching potential interviewees by occupation and background, conducting the interviews, and transcribing.

Rural Sociology Work (Spring 02-Spring 03):

Created research codes and criterion, conduct data entry, and graphical/statistical analysis in both Excel and SPSS for Idaho Bluegrass Burning and the Goshute Indians UI projects. Responsible for getting the assigned tasks done on own time while reporting back on a daily basis.

RELEVANT COURSEWORK

Social Research Methods in Conservation:

Studied the use of quantitative, qualitative, and mixed approaches to studying social aspects and how to choose/ apply selective research methods in survey design, program evaluation, reporting results, and interpreting research using SPSS statistical software.

Public Relations for Natural Resource Professionals:

Studied how poor communication/lack of planning creates problems in recreation management and the ways to improve the vital relationships existing between consumers and managers.

ORGANIZATIONS

Association of Latino-Iberians (Fall 01-Present): Vice-President.

Elected to actively seek opportunities for grant writing and pool human resources to host successful social and educational gatherings. List of events available upon request.

University Honors Program (Fall 01- Spring 03): Secretary.

Elected to seek opportunities for the campus honors community to participate in social gatherings, and community service events.