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ESTIMATES OF THE ECONOMIC IMPACT OF RECREATION AT THE SILVER CREEK PRESERVE

by

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SUMMARY

The following paper reports on a study to estimate the economic impact of expenditures associated with recreation at the Silver Creek Preserve on the greater Wood River Valley economy.

An expenditure questionnaire was developed and sent to 2,365 Preserve visitors. The number of questionnaires returned was 548. This gave an overall response rate of 23 percent. Respondents were classified as residents of the local area, the rest of the state, or out of state. Residents of the local area spend an average of $20.00 to $25.00 on a typical visit to the Preserve. Visitors from the rest of the state spend on average about $97.00 if the Preserve is the primary destination, about $111.00 if general recreation is the primary destination, and about $259.00 if non-recreation is the primary destination. Visitors from out of state spend an average of $1,032.00 if they are destination fishermen, $819.00 if the Preserve is the primary

destination, $780.00 if general recreation visitors, and $725.00 if a non-recreation visitor.

Given these expenditure estimates U.S. Department of Commerce Bureau of Economic Analysis regional output and employment multipliers were used to estimate the impact on the greater Wood River Valley economy. High, medium and low estimates were made. The high estimate was $3.0 million annually. The medium, and best, estimate was $2.0 million. The employment effects of expenditures associated with recreation at the Silver Creek Preserve were estimated to fall in the range of 30 to 40 full-time equivalent jobs.

I. Introduction

The purpose of this paper is to report on a project to develop estimates on the Economic impact of recreation at the Silver Creek Preserve on the local economy. The local economy being defined as the greater Wood River Valley area including Twin Falls. For all practical purposes, the standard procedure for making such estimates is to use regional export-base multipliers.

Export-base multipliers derive from export-base models of regional income determination. Export-base models assert that the primary determinant of a regions' income is its' exports to other regions. Those sectors of a region primarily selling to other regions, whether silver in the panhandle or skiers at Sun Valley, are classified as basic industries all others are non-basic. Non-basic industries are considered dependent on the basic industries through the following process. When something is sold outside a particular region dollars are brought in. Regional residents who receive those dollars will in turn spend them. Some of this spending will be within the region and be received by regional residents. Thus, regional income increases by more than the amount of the export. The ratio of the total increase in regional income to the amount of the initial export is known as a regional income multiplier. For example, recent estimates indicate that if the Idaho National Engineering Laboratory were to shut-down Idaho Falls would suffer a decline in economic activity of as much as sixty percent.

This technique for estimating the contribution of an export

activity to a regional economy requires two pieces of information. First is an estimate of the value of the activities exports. Second are the associated regional multipliers. With respect to measuring the economic effects of recreation at the Silver Creek Preserve the regional multipliers were available, but expenditures by non-residents were not. The project broke down into two phases. The first phase was a sample survey of expenditures in the local economy by visitors to the Silver Creek Preserve. This is discussed in Section II. The second phase is an analysis of the base line expenditure data using regional multipliers, Section III. Section IV will summarize the conclusions of the study.

II. Base Line Expenditure Data

The Survey.

The first step in the project was to get some estimate of expenditures associated with recreation at the Silver Creek Preserve. This was accomplished by a questionnaire mailed to preserve visitors. The Preserve maintains a list of visitors, who

are required to 'sign in' before entering the Preserve. This list of visitors defined the population to be sampled. Questionnaires were sent to one half of the persons on the list.

The questionnaire itself was deliberately kept short and simple, see attachment A for the actual instrument. The survey instrument was designed to gather information on; the origin of the visitor, date of last visit, number of trips to the Silver Creek Preserve in the last year, whether the preserve was the visitors primary destination, mode of transportation, expenditures by various categories, and property ownership.

The total number of questionnaires mailed was 2,365. This amounted to half of the persons on the visitors list. The number of questionnaires returned was 548 for an overall response rate of 23 percent. The actual response rate is probably somewhat higher than this, but it is impossible to estimate. First, 42 respondents, 7 percent, claimed never to have visited the Silver Creek Preserve. This problem with the visitors list was not foreseen, and the proportion of names on the list who have not been to the preserve is

not known. However, if the response rate of those who have not visited the Preserve is appreciably less than of those who did the actual response rate of visitors would be higher. Second, the questionnaire was mailed, and the return envelopes preposted bulk rate. This was technically incorrect according to the U.S. Post Office procedures -- first class, and business reply mail are the correct methods. Using bulk mail resulted in the possibility that some questionnaires might not have been forwarded nor returned if undeliverable. If this occurred the response rate would correspondingly be higher.

Respondents who had visited the Silver Creek Preserve numbered 506. These were classified according to the zip codes of their residence as Local Economy visitors, Rest of State visitors, and Out of State Visitors. Local Economy Visitors were defined as persons within the confines of the U.S. Post Office Twin Falls Sectional Center. This is a zip code with 833 for the first three digits, see the accompanying three digit zip code map of Idaho. Rest of state visitors were defined as respondents with zip codes 838, 835, 836, 837, 832, and 834 for the first

three digits. All other zip codes were out of state.

The classification scheme was designed to conform to available export-base multipliers. Multipliers are available at the state level and the region that corresponds to the area covered by the Twin Falls Sectional Center. With this scheme purchases associated with visiting the Silver Creek Preserve that are made by local residents would not count as an export. Purchases by a rest of state resident would count as an export for the regional economy but not for the state. Purchases by out of state residents would count as exports for both the region and the state.

The geographic distribution of respondents is compared with the visitor list in Table I. From Table I it would appear that the response rate of visitors from out of state was relatively higher than the response rate of state residents. Not too much weight should be attached to this observation because of the problems with the visitor list discussed above. Further, to the extent the response rate may be biased towards out of state

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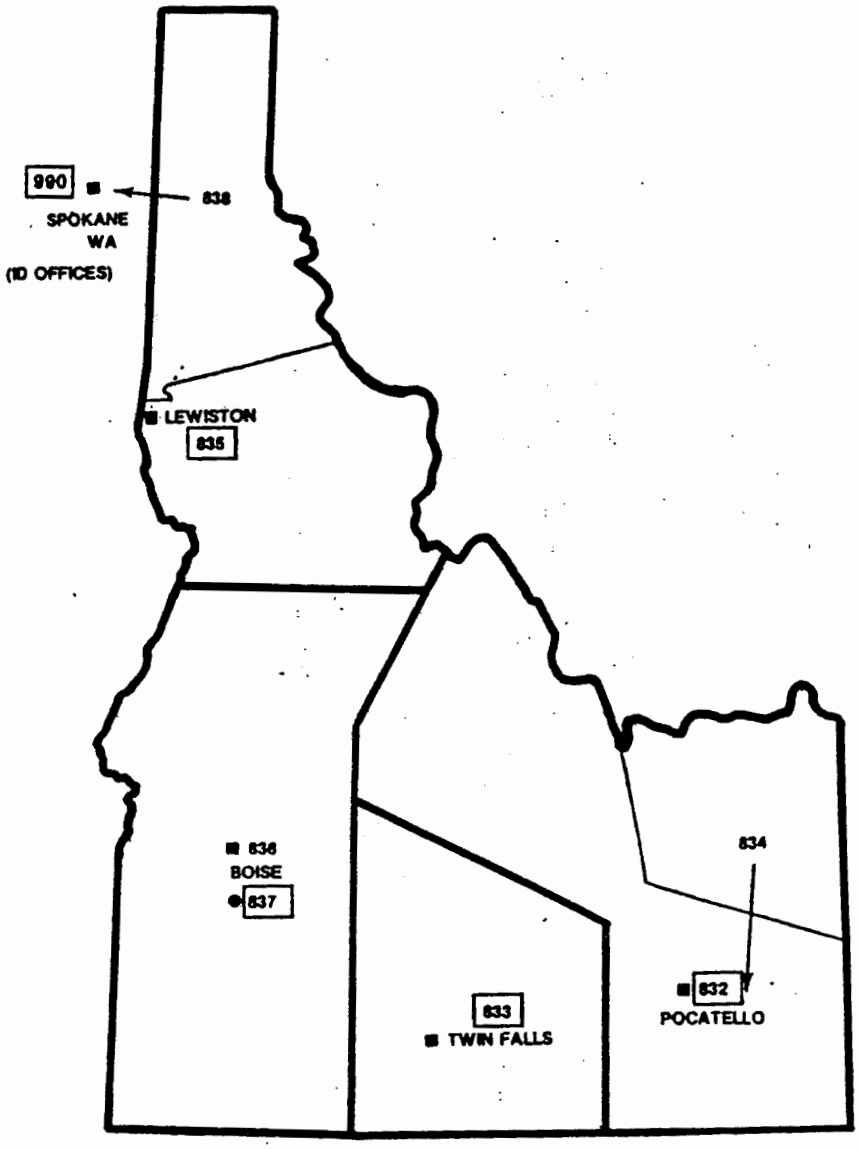

LEGEND:

■ A sectional center which serves associate post offices within that three-digit ZIP Code area.

• A city which has been assigned its own three-digit ZIP Code but which is not a sectional center, unless denoted also with ■.

[XXX] — Indicates three-digit postmark used for three-digit area.

NOTE: This map provides an approximation of the service area of each sectional center facility. Consult Section 3 of this Directory for specific information.

visitors the questionnaire itself may be somewhat responsible.

TABLE 1

Geographic Distribution of Visitors to the Silver Creek Preserve

Geographic Origin	Visitor List	Survey Respondents
Local Residents	19%	15%
Rest of State	47%	24%
Out of State	34%	61%

The same questionnaire was sent to the sampled population in the interest of simplicity and economy. This led to an inherent and unavoidable bias for information from out of state visitors. Such an approach is not unreasonable in as much as these visitors have the largest economic impact. However, several visitors from within Idaho made comments concerning this on the questionnaire. If this impression was wide spread it may have discouraged part of the sampled population and lowered the response rate for visitors who reside in Idaho.

Expenditure Data.

The questionnaire requested respondents to estimate the expenditures on a typical trip to the Silver Creek Preserve. The

expenditure categories identified were: (1) transportation; (2) eating and drinking; (3) accommodations; (4) sporting equipment and accessories; (5) guides; and, (6) other retail.

Before discussing actual expenditure data an important caveat needs to be addressed. E. J. Mishan characterizes this problem as "horse and rabbit stew."

> As several conscientious economists have pointed out, the outcome of all too many [economic] . . . studies follows that of the classic recipe for making horse and rabbit stew on a strictly fifty-fifty basis, one horse to one rabbit. No matter how carefully the scientific rabbit is chosen, the flavor of the resulting stew is sure to be swamped by the horseflesh. The horse, needless to say, represents those other considerations among which environmental spillover effects loom large. For all that mention of environmental spillovers seldom takes up more space than a sentence or two in a footnote, or in the preamble to the experts' study which is, of course, the scientific rabbit, one having all the earmarks of professional competence.[1]

With respect to the Silver Creek Preserve Mishan's quote raises two issues. First, this report is not intended to place an economic value to the Silver Creek Preserve. The concern echoed by several respondents to the effect that 'the Preserve is

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[1] E. J. Mishan, Cost-Benefit Analysis, (New York: Praeger Publishers, 1971), p. 175.

too valuable to be reduced to mere dollars and cents' is duly noted. No attempt is being made to value the environmental qualities of the Silver Creek Preserve. A related issue, and one that must be addressed by this report so it might as well be stated at the outset, is that the Preserve is located in an area with a variety of recreational activities. Thus expenditures by visitors to the Preserve cannot be considered as independent of these other recreational activities available in the Sun Valley area.

In an export-base model expenditures by local residents do not count as exports out of the region. They are assumed to be functions of export generated incomes. Thus they are not properly subject to a multiplier. Nevertheless, local expenditures are useful for establishing a "bottom line" with which to compare expenditures by visitors from outside the area.

The number of local economy respondents was 74. Among them they made 395 visits to the Preserve during the last year. Table II presents total and average expenditures for the various

TABLE 2

Local Resident Expenditure

	TOTAL	TRANS-PORTATION	FOOD AND DRINK	HUNTING & FISHING	OTHER RETAIL
Total	28,975	$2,296	1930	20,852	3,897
Average Trip		5.81	4.88	52.78	9.86
Adjusted Avg. Trip		7.04	6.22	58.57 (30.48)	11.19 (3.92)

categories listed above. Many respondents, particularly those who indicated they were regular visitors to the Preserve gave annual estimates. Several respondents did not provide estimates for one expenditure category or another. The average expenditure for each category is the total divided by the 395 trips. The adjusted average nets out the trips made by those who did not provide expenditure estimates for that category. A further adjustment is present in parentheses for the categories of hunting/fishing gear and other retail. One respondent accounted for about half the expenditures on hunting/fishing gear and significantly more than half of the other retail. This is sufficient to pull the average significantly above the mode.

Further, expenditures per trip on hunting and fishing gear would appear to be upwardly biased. Virtually all respondents gave annual expenditures on gear, and they all stated that they did not use the Preserve exclusively. Thus all of these expenditures cannot entirely be attributed to the Preserve. Given these variabilities, and the distribution of expenditures a conservative estimate of the expenditures made by a local resident on a typical visit to the Preserve would be warranted. Thus this writer would put the average in the $20 - $25 range.

The number of respondents from the rest of the state was 121. These respondents made a total of 238 trips to the Preserve in the last year. Respondents were classified according to the primary destination of their visit. Three categories were identified: 1, Primary Destination; 2, Recreation Generally; and 3, Non-Recreation. Table 3 presents the distribution of respondents and number of trips according to this classification. Table 4 presents total and average expenditures per trip broken down by the same classification. The data in these two tables will be discussed in greater detail in the following section.

Several comments are in order here. First Non-Recreation visitors spend disproportionately more than recreation visitors. From comments made on returned questionnaires this is primarily due to the fact that most of these expenditures represent employee business expenses that are either reimbursed or taken as tax deductions. Thus a visitor from the rest of the state spends on average about $97.00 if the Preserve is the primary destination, about $111.00 if recreation generally is the primary destination, and about $259.00 if non-recreation is the primary destination. Finally, three persons hired guides for the Preserve. The amount spent for guides was $650.

TABLE 3

Rest of State Respondents Number of Trips by Primary Destination

PURPOSE OF TRIP	NUMBER OF RESPONDENTS	%	NUMBER OF TRIPS	%
Primary Destination	72	59%	152	64%
General Recreation	25	21%	55	23%
Non-Recreation	24	20%	31	13%
TOTAL	121	100%	238	100%

TABLE 4

Total and Trip Average Expenditures of Rest of State Visitors*

EXPENDITURE CATEGORY	DESTINATION OF TRIP: PRIMARY DESTINATION	RECREATION GENERALLY	NON-RECREATION	TOTAL
Transportation	$2943	990	845	4778
Trip Average	19.36	18.00	27.25	20.07
Food & Drink	3104	1473	1775	6352
Trip Average	20.42	26.78	57.25	26.68
Accommodation	1829	1310	2475	5614
Trip Average	12.03	23.81	79.83	23.58
Hunt/Fish Gear	5281	1435	2100	8816
Trip Average	34.74	26.09	67.74	37.04
Other Retail	1574	887	822	3283
Trip Average	10.35	16.12	26.51	13.79
TOTAL	14,731	6,095	8,017	28,843
Trip Average	96.91	110.82	258.61	121.18
	n = 152	n = 55	n = 31	n = 238

*"n" equals the number of visitors

The respondents from out of state numbered 311. These were classified according to the primary purpose of the visit. Four categories were defined: 1, Destination Fisherman; 2, Primary Purpose Visitor; 3, General Recreation Visitor; and 4, Non-Recreation. A destination fisherman is defined as a respondent who stated the Preserve as the primary destination and used their fishing liscense exclusively on the Silver Creek. A primary purpose

visitor did not fish exclusively on the Preserve. Table 5 presents the distribution of out of state visitors according to this classification. As can be seen from the table about half of the out of state visitors were general recreation and over a third had the Silver Creek Preserve as their primary destination.

Expenditures by out of state visitors is complicated by property ownership. There were 44 out of state respondents, 14 percent, who reported property ownership. The type of property ownership runs the gamut from a ranch, through a parcel of land with plans to build, to a time-share condominium. No attempt was made to get detailed information on expenditures associated with property ownership such as taxes, utilities, maintenance and repair, etc. Expenditure estimates will therefore have a downward bias because no attempt will be made to estimate these payments.

TABLE 5

Distribution of Out of State Visitors by Primary Destination

PURPOSE OF VISIT	NUMBER OF RESPONDENTS	PERCENTAGE
Destination Fisherman	40	13%
Primary Destination	76	24%
General Recreation	153	49%
Non-Recreation	42	14%
TOTAL	311	100%

Total and average expenditures of out of state residents by purpose of visit are presented in Table 6. Total and average expenditures by out of state property owners are presented in Table 7. Total and average expenditures by out of state visitors who do not own property in the area are presented in Table 8. As can be seen by comparing Table 6 with Table 7 property owners spend substantially more than non-property owners. Further several property owners indicated a single lump sum in a particular expenditure category leaving the other categories blank. Subtracting the expenditures of property owners from Table 6 yields Table 8. The pattern of average total

TABLE 6

Total and Average Expenditures of Out of State Residents
By Primary Destination*

EXPENDITURE CATEGORY	PRIMARY DESTINATION: DESTINATION FISHERMAN	PRIMARY DESTINATION	GENERAL REC-REATION	NON-REC-REATION	CATEGORY TOTAL & AVERAGE
Transportation	$10,795	$18,541	$49,806	$11,562	$90,704
Average	270	244	326	275	292
Food & Drink	9,870	15,370	35,142	8,995	69,377
Average	247	202	230	214	223
Accommodation	11,908	13,389	35,631	15,504	76,432
Average	297	176	233	369	246
Hunt/Fish Gear	6,425	13,982	24,764	5,312	50,483
Average	160	184	162	126	162
Other Retail	2,635	8,637	19,662	8,991	39,925
Average	66	114	128	214	128
TOTAL	41,633	69,919	165,005	50,364	326,921
Average	1,040	920	1,078	1,199	1,051
	n = 40	n = 76	n = 153	n = 42	n = 311

*"n" equals the number of visitors

TABLE 7

Total and Average Expenditures by Out of State Property Owners by Primary Destination*

EXPENDITURE CATEGORY	PRIMARY DESTINATION: DESTINATION FISHERMAN	PRIMARY DESTINATION	GENERAL REC-REATION	NON-REC-REATION	CATEGORY TOTAL & AVERAGE
Transportation	$ 80	$ 2,540	$21,100	$ 7,240	$30,960
Average	40	318	959	603	703
Food & Drink	395	1,830	12,275	3,995	18,495
Average	198	229	558	333	420
Accommodation	1,810	3,483	6,735	7,263	19,291
Average	905	435	306	605	438
Hunt/Fish Gear	45	5,327	12,820	2,545	20,737
Average	22	666	583	212	471
Other Retail	100	1,020	9,930	7,571	18,621
Average	50	128	451	631	423
TOTAL	2,430	14,200	62,860	28,614	108,104
Average	1,215	1,775	2,857	2,385	2,457
	n = 2	n = 8	n = 22	n = 12	n = 44

*"n" equals the number of visitors

TABLE 8

Total and Average Expenditures by Out of State Residents Who Do Not Own Property By Primary Destination*

EXPENDITURE CATEGORY	PRIMARY DESTINATION: DESTINATION FISHERMAN	PRIMARY DESTINATION	GENERAL REC-REATION	NON-REC-REATION	CATEGORY TOTAL & AVERAGE
Transportation	$10,715	$16,001	$28,706	$ 4,322	$59,744
Average	282	235	219	144	224
Food & Drink	9,475	13,540	22,867	5,000	50,882
Average	249	199	174	167	190
Accommodation	10,098	9,906	28,896	8,241	57,141
Average	266	146	220	274	214
Hunt/Fish Gear	6,380	8,655	11,944	2,767	29,746
Average	168	127	91	92	111
Other Retail	2,535	7,617	9,732	1,420	21,304
Average	67	112	74	47	80
TOTAL	39,203	55,719	102,145	21,750	218,817
Average	1,032	819	780	725	820
	n = 38	n = 68	n = 131	n = 30	n = 267

*"n" equals the number of visitors

expenditures by primary purpose of visit is what one would expect if respondents are attempting to adjust expenditures to those associated with visiting the Preserve. Respondents comments on the questionnaire indicated some did, but others did not. Further, considering the variety of scenarios that one can come up with behind the respondents answer about primary destination it is not clear that these differences are accurate. Thus using

the figures of Table 8 it is estimated that broken down by primary destination, Destination Fishermen spend $1,032.00, Primary Destination Visitors spend $819.00, General Recreation Visitors spend $780.00, and Non-Recreation visitors spend $725.00 on a typical visit to the Silver Creek Preserve.

Information was also gathered on expenditures for guides. These numbers were not included in the above tables because the number of respondents, 62, is too small to justify tabulating by primary destination. Table 9 presents a summary tabulation of expenditures on guides. These 62 respondents reported expenditures on guides in excess of $20,000. This gives an average expenditure of $341.

A final category of expenditures in the survey related to the purchase of fishing licenses. These expenditures are income to the Idaho Department of Fish and Game and do not influence income in the greater Wood River Valley area. Thus they will not be part of subsequent analysis. Further, with the exception of out of state destination fishermen it is not possible to state

what portion of these expenditures are associated with the Silver Creek Preserve. Never the less expenditures by destination fishermen would give a lower bound of the contribution to the Department of Fish and Game. The information in the survey would indicate that out of state destination fishermen spent $2,915.00 on fishing licenses during 1988. A more realistic figure would be significantly higher, but how much higher it is impossible to say with the information available.

TABLE 9

Expenditures on Guides

ORIGIN OF RESPONDENT	NUMBER OF RESPONDENTS	TOTAL EXPENDITURES
Local Respondent	3	$ 1,200
Rest of State Respondent	3	650
Out of State Respondent	56	19,285
TOTAL	62	21,135
		$\bar{x}$ = $341

III. Analysis of Expenditure Data

Regional export-base multipliers developed by the U.S.

Department of Commerce Bureau of Economic Analysis will be used to estimate the economic impact of Silver Creek Preserve recreation expenditures on the greater Wood River Valley area. The procedure will be to develop estimates; one high, the other medium, and the third low. Several reasons may be given for this. First, the variation in average total expenditures by type of visitor (see Tables 4, 6, 7, 8) is substantial. Second, there is considerable ambiguity in the transportation expenditure category. The questionnaire asked for transportation expenses within Idaho, but without making an arbitrary assumption it is not possible to distinguish between what was spent locally and what was spent in the rest of the state. Further some respondents who drove estimated transportation expense using the standard reimbursement rate of $0.205 per mile rather than actual expenditures. Finally, and probably most importantly, with the exception of visitors identified as destination fisherman, expenditures by other types of visitors can not totally be attributed to the Silver Creek Preserve. It was noted above with respect to Table 8 that the pattern of expenditures indicates

some respondents adjusted for this. However, it is clear from comments made by some respondents and Table 8 itself that the adjustment is inadequate. The questionnaire did not go into sufficient detail to permit estimating the appropriate adjustment. Thus an arbitrary assumption will be necessary to get in the proverbial ball park.

The visitor list indicates there were about 4,400 different visitors to the Preserve in 1988. Using the breakdown from the visitors list 836, or 19 percent, were from the local economy, 2,068, or 47 percent, were from the rest of the state, and 1,496, or 34 percent, were from out of state. Our concern will be with the latter two categories of visitors as expenditures by local economy residents do not count as exports.

Visitors from the rest of the state differ in an important respect from out of state visitors that needs to be accounted for. Visitors from the rest of the state typically make more trips to the Preserve area and of a shorter duration than out of state visitors. A typical visitor from out of state makes a

single trip to the Preserve area but for a longer time period. This accounts for some of the differences in expenditures between the two types of visitors. Expenditures by visitors from the rest of the state need to be adjusted from this. The average number of trips to the Preserve area by visitors from the rest of the state was 1.96. This would give a total of 4,067 trips. Using the survey distribution, these would break down into; 2,603 primary destination trips, 935 general recreation trips, and 529 non-recreation trips.

Given this a high estimate of the expenditure impact of visitors from the rest of the state can be defined as:

(1) {(average trip expenditure) x (number of trips)}
x (regional output multiplier)

where average trip expenditures are given in Table 4, and the number of trips are stated above. The regional output multiplier is that developed by the U.S. Department of Commerce, Bureau of Economic Analysis, see below.

In a like a fashion high estimate of the impact of expenditures by visitors from out of state will be defined as:

(2) {(average visitor expenditures) x (number of visits)}
x (regional output multiplier)

where average visitor expenditures are taken from Table 8, and the number of out of state visitors are given above. The regional output multiplier is the same as that used in (1).

Table 10 presents the U.S. Department of Commerce Bureau of Economic Analysis Regional Output and Employment Multipliers, which will be used throughout the rest of this discussion. These

TABLE 10

U.S. Department of Commerce, Bureau of Economic Analysis
Regional Employment and Output Multipliers

EXPENDITURE CATEGORY	OUTPUT MULTIPLIER	EMPLOYMENT MULTIPLIER Jobs per $1,000,000 Expenditure
Transportation	1.67	37.0
Eating and Drinking	1.69	58.1
Accommodations	1.61	63.3
Retail Trade	1.60	52.0
Miscellaneous Services	1.67	41.6

SOURCE: Regional Input-Output Modeling System (RIMS II), Regional Economic Analysis Division, Bureau of Economic Analysis.

are generally considered the best readily available local economy

multipliers. Two points should be noted, first with the exception of retail trade and miscellaneous services that match with the expenditure categories is self-evident. Expenditures on hunting and fishing gear and other retail both fall under the multiplier for retail trade. Expenditures for guide fees fall under the multiplier for miscellaneous services. Second, the employment multipliers which give the estimated increase in employment that result from a million dollar increase in the output of a specific sector of the local economy are overstatements with respect to the impact of Silver Creek Preserve. The bulk of expenditures associated with visiting the Preserve are seasonal, occurring mainly during the summer. The local Sun Valley economy is primarily oriented to seasonal recreation activities. Thus the local economy can accommodate Preserve visitors without expanding the economic base. More realistic employment multipliers would probably be in the range of a half or a third of those listed in Table 10.

TABLE 11

HIGH ESTIMATES OF THE IMPACT OF EXPENDITURES BY VISITORS TO THE SILVER CREEK PRESERVE

Expenditure Category	REST OF STATE VISITORS Primary Destination	General Recreation	Non-Recreation	TOTALS	OUT OF STATE VISITORS Destination Fishermen	Primary Destination	General Recreation	Non-Recreation	TOTAL	TOTAL REST OF STATE AND OUT OF STATE
Transportation	$84,158.00	$28,106.00	$24,073.00	$136,337.00	$91,362.00	$140,890.00	$268,080.00	$50,260.00	$550,592.00	$ 929.00
Eat/Drinking	$89,829.00	$42,316.00	$23,852.00	$155,997.00	$81,637.00	$120,735.00	$215,546.00	$58,986.00	$476,904.00	$632,901.00
Hotel	$50,416.00	$35,842.00	$67,990.00	$154,248.00	$83,082.00	$84,387.00	$259,629.00	$92,198.00	$519,296.00	$673,544.00
Retail Trade	$187,791.00	$63,146.00	$26,889.00	$277,826.00	$72,944.00	$137,282.00	$195,512.00	$46,482.00	$452,220.00	$730,046.00
Mis. Services				$38,924.00					$191,965.00	$230,889.0
TOTAL	$412,194.00	$169,410.00	$142,804.00	$763,332.00	$329,025.00	$483,294.00	$938,767.00	$247,926.00	$2,190,977.00	$2,954,309.0

A summary of the results of the calculation as defined by (1) and (2) is given in Table 11. This gives a high estimate of 2.9, say $3.0 million dollars. This is to say, expenditures associated with visiting the Silver Creek Preserve may contribute almost 3 million dollars to the local economy. Using the employment multipliers from Table 10 this translates into about 152 jobs, but this latter figure is surely too high for reasons cited above.[NOTE] An extreme low estimate was made by the following procedure. First, for rest of state visitors transportation expenditures were eliminated from the expenditures by primary destination visitors. Expenditures by general recreation and non-recreation visitors were assumed to be $20 per trip. Expenditures on guides remain the same. Second for out of state visitors transportation is eliminated from destination fishermen. Transportation is also eliminated from primary destination visitors, and 50% of the result is assumed to be

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NOTE Another way to get a perspective on this estimate is to ask what would be the present value of a 3 million dollar income stream. Present values are inversely related to interest rates. But picking a convenient one, say 10%, the present value would be $30 million; at 5% $60 million, and at 20% $15 million.

attributable to the Preserve. Expenditures by general recreation and non-recreation visitors were assumed to be $20. Expenditures on guides remain the same. The result of these adjustments is a figure of $1,008,294, or $1 million. This latter figure is almost certainly too low.

CONCLUSION

The economic impact to the local economy of expenditures by visitors to the Silver Creek Preserve is estimated to fall in the range of $1.0 to $3.0 million dollars. The former figure is almost definitely too low and the latter figure almost definitely too high. The survey data on which these estimates are based did not go into sufficient detail to permit a more accurate estimate. Two major areas of ambiguity are transportation expendiutres, and the portion of expenditures by non-destination fishermen that can properly be associated with recreation at the Preserve. One can think of arguments that it should be closer to one extreme than the other. None of them strike this writer as being decisive in arguing one way or another. In such a situation if pushed to

state a single number it would seem reasonable to split the difference. This would put the economic impact at about $2.0 million per year. Translating this into employment requires extreme caution. A straight forward application of the employment multipliers of Table 10 would give about 100 jobs. However, for reasons cited above concerning the seasonality of expenditures and characteristics of the local economy, this number should be consideraly reduced. This writer would take 30-40 jobs as a more reasonable estimate of the annual full time employment impact.