

Travel Management Rule DEIS

Economic Impact Assessment Report

Prepared by
Yeon-Su Kim
School of Forestry
Northern Arizona University

for
Coconino National Forest

March 2, 2009

Introduction

The Forest Service and National Forest System contribute social and economic environment in a variety of ways. One of such contributions is providing places for outdoor recreation. On the Coconino National Forest, motor vehicles are used for a number of recreational activities, as well as for other administrative and commercial activities.

On November 9, 2005, the Forest Service published final travel management regulations governing off-highway vehicles (OHVs) and other motor vehicles on national forests and grasslands. In order to comply with the new Travel Management Rule (TMR), the Coconino National Forest will have to restrict motorized travel to designated roads, trails, and areas and designated routes and areas shall be identified on a motor vehicle use map (MVUM) and made available to the public. Currently, cross-country motorized travel is permitted on the Coconino National Forest, except in areas that are signed closed or restricted to seasonal use. The purpose of this report is to assess how the proposed action to manage motorized travel by the Coconino National Forest would affect the economic environment of the surrounding region. The report will be used as part of the overall environmental impact analysis required by National Environmental Policy Act (NEPA).

This report provides the economic context that is specific to the proposed action to manage motorized travel in the forest. The general social and economic conditions and trend analysis has been done as part of the Coconino National Forest's economic and social sustainability assessment for the forest plan revisions, and will be not repeated here. This report describes motorized and non-motorized uses on the forest and highlights their changing conditions and trends within the affected region. Also, the report documents the estimated economic impacts of the motorized uses of the affected region. The affected region was defined as the counties adjacent to the Coconino National Forest, which are all of Coconino, Yavapai, and Gila Counties in Arizona.

Methodology for Analysis

This report employed the following information sources:

- Bureau of Census County Business Pattern
- IMPLAN input-output model with 2006 dataset at County level
- National Visitor Use Monitoring Results for the Coconino National Forest (2001 and 2006 reports)
- Spending Profiles of National Forest Visitors, NVUM Four Year Report by Daniel J. Stynes and Eric M. White. May 2005
- Spending Profiles for National Forest Recreation Visitors by Activity by Daniel J. Stynes and Eric M. White. February 2006
- The Economic Importance of Off-Highway Vehicle Recreation: Economic data on off-highway vehicle recreation for the State of Arizona and for each Arizona County. 2002 Survey and Report prepared by Jonathan Silberman, PhD. School of Management. Arizona State University.

The National Visitor Use Monitoring (NVUM) program provides reliable information about recreation visitors to national forest system managed lands at the national, regional, and forest level. NVUM methodology and analysis is explained in detail in the research paper entitled: Forest Service National Visitor Use Monitoring Process: Research Method Documentation; English, Kocis, Zarnoch, and Arnold; Southern Research Station; May 2002 (<http://www.fs.fed.us/recreation/programs/nvum>). From January 2000 through September 2003 every national forest implemented this methodology and collected visitor use information. Using a five year rotation, every national forest is now collecting information for a second time. This report is based on two existing NVUM reports for the Coconino National Forest: 2001 report (survey period: January 2000 through December 2000) and 2006 report (survey period: October 2004 through September 2005).

To assess the economic contributions of motorized recreation, average expenditures for motorized recreation use in the forest were estimated based on the 2006 NVUM report. First, recreation visits from the 2006 NVUM report were apportioned for each activity among local and non-local visitors and day and overnight trips, then converted to a travel party basis based on the trip segment profiles published in the Stynes and White's 2006 report. Stynes and White strongly recommend against using a single spending average figure to represent all visitors to an entire forest or for all visitors engaged in a single activity, since developing a single spending average figure would mask important differences in spending by local and non-local users engaged in day and overnight recreation trips.

For this report, five trip type segments were used, which is based on trip type segments defined by Stynes and White (2005a) to help explain differences in spending of distinct subgroups of visitors. Local visitors are defined as living within 50 miles of the recreation site. Overnight visitors (OVN) are those that reported being away from home more than 24 hours on their trip.

National Forest Visitor Trip Type Segments

1. **Non-local day trips:** Non-local residents on day trips
3. **Non-local OVN:** Non-local residents staying overnight (on and off the NF)
4. **Local day trips:** Local residents on day trips
6. **Local-OVN:** Local residents staying overnight (on and off the NF)
7. **Non-Primary:** Visits where recreating on the NF is not the primary trip purpose.

Although spending average by individual forests has been published (Stynes and White 2006)¹, the forest-level spending averages are not reliable due to small sample sizes and not recommended for economic analyses (Eric White personal communication, January 3, 2008). For this report, four year average of the activity spending profiles (Stynes and White, 2006) was applied to estimate the spending profiles of the motorized and non-motorized uses of the Coconino National Forest. Stynes and White classified each national forest as a high, average and low visitor spending area to capture spatial variations in visitor spending among different forests. The Coconino National Forest was classified as a high visitor spending area because the

¹ According to the 2000 NVUM survey, the visitors to Coconino National Forest spent average \$125 per party per trip (sample size: 157; standardized \$119). The spending average based on the 2005 NVUM survey results will be published later this year.

average spending for day and overnight trips to the forest (based on the NVUM sample) were above the national averages.

Based on the number of visits and the estimated average spending per travel party, we have estimated economic contributions of motorized recreation in the Coconino National Forest on the regional economy. First, the economic contributions of motorized recreation visitor spending were analyzed with IMPLAN (Impact Analysis for Planning). The IMPLAN model includes a database containing information of regional economies and an economic modeling program that traces the flow of materials and services and estimates the economic impact of industries on the regional economy. IMPLAN data files include information for 528 different industries and 21 different economic variables. The 2006 IMPLAN data files for the three adjacent counties were employed.

In 2002, Silberman conducted a random telephone survey followed by mail questionnaires for Arizona residents to estimate the economic contributions of OHV recreation in Arizona (15,000 telephone surveys and 1,269 mail questionnaires from randomly selected Arizona households). Although the survey results are not specific to the Coconino National Forest, this study provides important primary information on the OHV related expenditures, which include direct expenditures for motorized vehicles, tow trailers, related equipment, accessories, insurance and maintenance costs, as well as the trip expenditures. Based on the published report titled “The Economic Importance of Off-Highway Vehicle Recreation: Economic data on off-highway vehicle recreation for the State of Arizona and for each Arizona County”, economic contributions of motorized recreation in the Coconino National Forest were estimated also.

Existing Conditions

1. Description of Affected Economic Environment

For the general social and economic conditions and trend analysis of the surrounding areas, see the Coconino National Forest’s economic and social sustainability assessment for the forest plan revisions. Table 6 shows the overall economic conditions of the three adjacent counties. The detail breakdowns of employments and employment types by different industry sectors, as well as income and income distribution were included in the above-mentioned assessment. According to the latest County Business Pattern report from the Bureau of Census, there were total 121,931 jobs in these three counties in 11,392 business establishments. These businesses paid total of 3,388 million dollars in their payroll.

Table 6. County Business Patterns of the Three Adjacent Counties (2006 latest available from Bureau of Census County Business Patterns).

Major Industry		Coconino			Yavapai			Gila		
Industry Code	Description	Number of Employees	Annual Payroll (\$1,000)	Total Establishments	Number of Employees	Annual Payroll (\$1,000)	Total Establishments	Number of Employees	Annual Payroll (\$1,000)	Total Establishments
	Total	47,456	1,342,201	3,850	62,247	1,716,845	6,399	12,228	329,552	1,143
11	Forestry, fishing, hunting & agriculture support	0-19	0	4	25	448	6	0-19	0	2
21	Mining	20-99	0	10	1,000-2,499	0	26	1,000-2,499	0	10
22	Utilities	100-249	0	12	333	17,408	24	20-99	0	5
23	Construction	3,550	103,602	511	9,013	263,376	1,264	1,075	33,645	178
31	Manufacturing	3,810	227,563	97	4,231	154,296	226	100-249	0	16
42	Wholesale trade	1,263	45,687	120	1,472	56,256	180	154	6,088	28
44	Retail trade	8,306	171,832	673	11,436	255,534	878	2,375	53,001	183
48	Transportation & warehousing	1,756	58,907	120	1,032	27,720	143	193	7,045	24
51	Information	637	21,241	59	859	29,450	80	137	4,182	20
52	Finance & insurance	1,003	37,773	181	1,734	66,583	316	293	10,248	64
53	Real estate & rental & leasing	819	28,077	221	1,420	43,516	484	258	7,088	90
54	Professional, scientific & technical services	1,723	58,597	335	1,894	63,661	527	412	11,664	86
55	Management of companies & enterprises	475	22,490	20	250-499	0	8	20-99	0	3
56	Admin, ..services	2,177	32,183	165	3,945	92,515	342	417	9,261	52
61	Educational services	799	17,691	40	2,142	51,929	84	161	2,578	11
62	Health care and social assistance	6,546	263,303	378	9,150	333,497	703	2,765	71,170	133
71	Arts, entertain & recreation	1,115	28,403	99	643	10,654	73	500-999	0	15
72	Accommodation & food services	11,329	170,085	507	8,563	122,274	534	1,471	17,487	120
81	Other services (except public administration)	1,829	39,113	290	2,661	54,811	470	370	7,149	99
99	Unclassified establishments	0-19	0	8	30	506	31	0-19	0	4

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3. Motorized and non-motorized uses

According to two NVUM reports, recreation use on the Coconino National Forest has grown significantly over the years. For calendar year 2000, recreation uses of the forest were estimated at 1.89 million National Forest visits² with 2.42 million site visits. Approximately 3.25 million national forest visits on the Coconino National Forest were estimated for the fiscal year 2005³ with about 4.84 million site visits. Table 1 shows participation rates by activity for the calendar year of 2000 and the fiscal year of 2005.

In 2000, the top five recreation activities of the visitors were viewing wildlife and natural features, camping, general relaxation, and hiking/walking. Each visitor also indicated which of these activities was their primary activity for their current recreation visit to the forest. Survey respondents were asked to select just one of their activities as their main reason for the forest visit. Some respondents selected more than one, so the total can be more than 100%. The top primary activities were camping, hiking/walking, and viewing wildlife or natural features. In 2005, viewing natural features, hiking/walking, viewing wildlife, and relaxing remained as the most popular activities. Another one of the top five recreation activities was driving for pleasure (see Table 1). The top main activities were hiking/walking, viewing natural features, relaxing, driving for pleasure, and downhill skiing. There have been the most significant growth in participation in hiking/walking and driving for pleasure.

Recreation visits were broken down into primary activities in order to examine the trends of motorized and non-motorized uses of the forest and to generate the spending profiles for these two groups. For this report, the primary activity participation rates (% as Main Activity in Table 1) from the 2005 NVUM data were used to estimate motorized and non-motorized uses of the forest. Driving for pleasure, motorized trail activity/OHV use, other motorized activity, and snowmobiling are considered as motorized uses for this report, although no respondent reported other motorized activity and snowmobiling as their primary reasons for visiting the forest. Backpacking, hiking/ walking, horseback riding, bicycling, and cross-country skiing are considered non-motorized use. Total activity participations in both motorized and non-motorized activities grew, 27% and 26% respectively, and the number of visitors who said participating motorized or non-motorized activities was their main reason for their recreation visits for the forest grew 6% and 17% respectively.

² +/- 15.4 percent at the 80 percent confidence level

³ +/- 10.2 percent at the 80 percent confidence level

Table 1. Activity participation and primary activity for the Coconino National Forest (NVUM CY 2000 and FY 2005 data).

Activity	Calendar Year 2000		Fiscal Year 2005		Changes in Activity Participation (%)	Changes in Main Activity (%)
	Total Activity Participation (%)	As Main Activity (%)	Total Activity Participation (%)	As Main Activity (%)		
Hiking / Walking	53	23	79.1	40.5	26.1	17.5
Viewing Natural Features	64*	22*	83.9	21.2	19.9	-0.8
Driving for Pleasure	28	2	54.8	6.9	26.8	4.9
Downhill Skiing	5	5	5.5	5.3	0.5	0.3
Bicycling	4	2	7	4.3	3	2.3
Visiting Historic Sites	16	2	31.4	2.9	15.4	0.9
Viewing Wildlife	41*	4*	70	2.7	29	-1.3
Other Non-motorized	10	9	7	2.7	-3	-6.3
Fishing	10	7	5.4	2.3	-4.6	-4.7
Primitive Camping	7	4	4.9	2.3	-2.1	-1.7
Hunting	2	2	2.7	2.3	0.7	0.3
Relaxing/ ** Some Other Activity	62	20	74.3	10.3	12.3	-9.7
Developed Camping	7	5	4.6	1.5	-2.4	-3.5
Picnicking	16	1	14.5	1.4	-1.5	0.4
Motorized Trail Activity/OHV Use**	11	1	12.5	2.3	1.5	1.3
Motorized Water Activities	2	0	1.7	1	-0.3	1
No Activity Reported	NA	NA	0.4	0.5	NA	NA
Backpacking	3	1	1.9	0.4	-1.1	-0.6
Nature Study	8	0	20	0.2	12	0.2
Non-motorized Water	0	0	0.7	0.2	0.7	0.2
Gathering Forest Products	1	0	2.8	0.1	1.8	0.1
Cross-country Skiing	1	1	0.3	0.1	-0.7	-0.9
Nature Center Activities	11	0	21.6	0	10.6	0
Resort Use	3	1	0.9	0	-2.1	-1
Horseback Riding	2	1	0.7	0	-1.3	-1
Other Motorized Activity	2	0	0.5	0	-1.5	0
Snowmobiling	0	0	0	0	0	0

* first version of survey form used October through March had these two viewing categories combined as viewing scenery

** there activities were reported separately for the NVUM 2005 data.

Tables 2 and 3 present the number of visits and the number of travel parties respectively for motorized and non-motorized uses of the Coconino National Forest by trip segments. Total 1.47 million visitors were estimated to participate in non-motorized activities as their primary reasons for visiting the Coconino National Forest in 2005, while almost 300,000 visitors were estimated for motorized activity. Table 4 presents the estimated average spending per party per trip in a high spending area.

Table 2. Number of visits by activity types (FY 2005)

Activity	Trip Segment (number of visits)					
	Nonlocal Day	Nonlocal OVN	Local Day	Local OVN	Non-primary	Total
Hiking / Walking*	105,319	223,804	829,391	78,990	78,990	1,316,493
Backpacking	-	6,111	520	6,111	260	13,002
Bicycling*	11,182	23,762	88,059	8,387	8,387	139,776
Cross-country Skiing	325	1,008	1,755	130	33	3,251
Non-motorized uses**						1,472,522
Driving for Pleasure	13,457	20,186	159,247	6,729	24,672	224,291
Motorized Trail Activity /OHV Use	8,224	17,196	35,887	10,467	2,991	74,764
Motorized Uses**						299,055

*There activities share the same trip segment profile.

** No respondent reported horseback riding, other motorized activity and snowmobiling as their primary reasons for visiting the forest.

Table 3. Number of travel parties by activity types (FY 2005)

Activity	Trip Segment (number of travel parties)					
	Nonlocal Day	Nonlocal OV	Local Day	Local OVN	Non-primary	Total
Hiking/Walking*	50,152	97,306	460,773	35,904	29,255	673,390
Backpacking	-	2,350	400	100	113	2,964
Bicycling*	5,325	10,331	48,922	3,812	3,106	71,496
Cross-country Skiing	116	360	763	14	13	1,266
Non-motorized uses total**						749,116
Driving for Pleasure	6,408	7,764	88,470	11,215	10,280	124,137
Motorized Trail Activity /OHV Use	3,916	6,878	17,943	1,196	1,150	31,084
Motorized Uses total**						155,221

*There activities share the same trip segment profile.

** No respondent reported horseback riding, other motorized activity and snowmobiling as their primary reasons for visiting the forest.

Table 4. Average Spending per party per trip (FY 2005)

Activity	Spending per party per trip				TOTAL
	Nonlocal Day	Nonlocal OVN	Local Day	Local OVN	
Hiking / Walking*	57.86	367.02	26.08	126.93	577.89
Backpacking	-	157.42	26.08**	137.44	320.94
Bicycling*	57.86	367.02	26.08	126.93	577.89
Cross-country Skiing	82.34	506.40	46.76	303.84	939.34
Non-Motorized Average	66.02	349.47	31.25	173.79	604.02
Driving for Pleasure	63.81	265.61	36.24	159.36	525.02
Motorized Trail Activity /OHV Use	100.70	260.69	57.19	156.42	575.00
Motorized Average	82.26	263.15	46.72	157.89	550.01

* These activity groups share the same spending profile.

**Average spending of local day backpackers was not available, because backpacking was grouped with primitive camping in the spending report. Average spending of hikers was used as a proxy.

The average spending per party per trip by each activity in Table 4 were multiplied by the number of parties engaging in each activity in the Coconino National Forest to calculate the total spending by each activity group (Table 5).

Table 5. Total Spending by Activity (Average Spending per party per trip in FY 2005)

Activity	Spending (Average Spending X Number of parties)				TOTAL
	Nonlocal Day	Nonlocal OVN	Local Day	Local OVN	
Hiking / Walking	2,901,801.33	35,713,249.72	12,016,948.10	4,557,339.72	55,189,338.87
Backpacking	-	370,005.30	10,433.93	13,746.54	394,185.76
Bicycling	308,092.49	3,791,777.13	1,275,873.50	483,865.70	5,859,608.82
Cross-country Skiing	9,559.09	182,247.21	35,686.50	4,294.18	231,786.98
Non-Motorized Total	3,219,452.91	40,057,279.35	13,338,942.03	5,059,246.14	61,674,920.43
Driving for Pleasure	408,915.26	2,062,178.26	3,206,170.80	1,787,153.88	7,464,418.20
Motorized Trail Activity /OHV Use	394,361.24	1,793,096.10	1,026,178.01	187,112.86	3,400,748.22
Motorized Total	803,276.51	3,855,274.37	4,232,348.81	1,974,266.73	10,865,166.42

4. Economic Contribution Assessment

Direct and indirect economic contributions on the affected region can be assessed through a county-level input-output analysis. From the NVUM survey, the visitor expenditures were estimated in eight categories: 1) Lodging; 2) Restaurant and Bars; 3) Groceries; 4) Gasoline and oil; 5) Other transportation (bus, shuttles etc.); 6) Activities including guide fees & equipment rental; 7) Entry, parking, or recreation use fees; 8) Souvenirs/clothing and other miscellaneous expenses. Due to the nature of the NVUM survey, all these expenditures are trip-related only. The OHV users incur additional expenditures for purchasing and maintaining OHV equipments and vehicle. According to the 2002 OHV Survey and Report by Silberman, trip expenditures were about 28% of the total direct OHV expenditures (38% for equipment expenditures; 34 % vehicle expenditures). Table 7 shows the estimated spending average of motorized recreation visitors for the Coconino National Forest by the eight spending categories.

Table 7. Spending Averages for Motorized Recreation Visitors (\$ per travel party)

Spending Categories	OHV use				Driving			
	Nonlocal		Local		Nonlocal		Local	
	Day	OVN	Day	OVN	DAY	OVN	Day	OVN
Lodging	0.00	33.59	0.00	20.15	0.00	72.76	0.00	43.66
Restaurant/Bar	15.24	41.24	8.66	24.74	13.83	77.25	7.85	46.35
Groceries	13.42	51.39	7.62	30.83	5.52	21.34	3.13	12.80
Gas and Oil	53.97	91.97	30.65	55.18	37.40	51.86	21.24	31.12
Other Transportation	0.00	0.00	0.00	0.00	0.00	4.80	0.00	2.88
Activities	5.06	6.96	2.87	4.18	0.22	5.49	0.12	3.29
Admissions/Fees	4.98	9.23	2.83	5.54	2.14	5.81	1.22	3.48
Souvenirs/Other	8.03	26.31	4.56	15.78	4.70	26.29	2.67	15.78
Total Spending	100.70	260.69	57.19	156.42	63.81	265.61	36.24	159.36

In order to estimate the total spending of the motorized recreation visitors of the Coconino National Forest, the spending averages was multiplied by the average number of traveling parties in each trip segment (Table 8).

Table 8. Total Spending of Motorized Recreation Visitors (\$: Average Spending X total number of travel parties in FY 2005)

Spending Categories	Nonlocal	Local	Total
Lodging	795,942	513,701	1,309,643
Restaurant/Bar	1,031,781	1,399,566	2,431,347
Groceries*	607,062	594,516	1,201,578
Gas and Oil*	1,486,288	2,844,010	4,330,298
Other Transportation	37,305	32,331	69,637
Activities	111,699	104,469	216,167
Admissions/Fees	141,843	204,253	346,096
Souvenirs/Other*	446,634	513,760	960,394
Total Spending	4,658,554	6,206,606	10,865,160

- Expenditures in these categories were margined for IMPLAN analysis, as they represent retail sales.

The total spending estimated within each spending category (Table 8) was applied to IMPLAN model by using appropriate bridge tables to match the NVUM spending categories to IMPLAN sectors. Table 9 shows the total economic contributions of motorized recreation uses of the Coconino National Forest in 2006. Table 10 shows the economic contributions generated per 1000 visits.

Table 9. Economic Contributions of Motorized Recreation Uses of the Coconino National Forest (FY 2005)

		Direct Impact	Indirect Impact	Induced Impact	Total Impact
Local	Labor Income (\$)	1,113,357	228,660	281,054	1,623,071
	Employment	52.1	7	9	68.1
Non-local	Labor Income (\$)	980,757	202,560	247,381	1,430,698
	Employment	45	6.1	7.9	59.1
Total	Labor Income (\$)	2,094,114	431,220	528,435	3,053,769
	Employment	97	13	17	127

Table 10. Economic Contributions per 1000 Motorized Recreation Visits (FY 2005)

		Direct Impact	Indirect Impact	Induced Impact	Total Impact
Local	Labor Income (\$)	5,244	1,077	1,324	7,644
	Employment	0.25	0.03	0.04	0.32
Non-local	Labor Income (\$)	16,605	3,430	4,188	24,223
	Employment	0.76	0.10	0.13	1.00
Total	Labor Income (\$)	21,849	4,506	5,512	31,867
	Employment	1.01	0.14	0.18	1.32

Alternative calculation of economic contributions

For this report, the economic contributions of motorized recreation uses in the forest to the regional economy have been estimated in two different ways. Both methodologies have limitations. The economic contributions based on the 2006 NVUM report employed the forest-level visitation data supplemented with the national average of spending for different recreation activity and trip segments in a high spending area. The Forest Service NVUM expenditure data does not include durable goods purchases and the expenditure data only identifies purchases made for the single trip associated with the interview. OHV expenditure data is identified only for trips where OHV use is identified as the primary purpose. Although the 2002 Silberman report was based on the statewide survey, it did not have specific visitation data for the motorized recreation in the Coconino National Forest. Because of the discrepancy in data collection and sampling methods, the results of two studies paint different pictures of the economic contributions of motorized travel. However, these two estimates together provided a reasonable range of economic contributions of the motorized recreation in the forest.

Table 11 shows the OHV recreation days, total OHV related expenditures, which include expenditures for motorized vehicles, tow trailers, related equipment, accessories, insurance and maintenance costs, as well as trip related expenditures. The table also shows economic contributions generated in the three counties adjacent to the Coconino National Forest according to the aforementioned report. The OHV related expenditures and the economic contributions were much larger than those estimated with the NVUM data, which only include the trip related expenses.

Table 11. OHV uses, expenditures and economic contributions in the affected region (in 2002 dollar as published)

	Coconino County	Gila County	Yavapai County
OHV Recreation Days	1,974,295	1,262,607	1,195,742
Total OHV Expenditures	215.3 million	120.5 million	183 million
Total OHV Recreation Trips	106.4 million	53.4 million	112.4 million
Vehicles/Equipment Purchase for OHV use	108.9 million	67.1 million	70.6 million
Labor Income Generated	51.7 million	22.3 million	43.9 million
Employment Generated	2,580	1,322	2,067

Table 12 shows the economic contributions generated per 1,000 visits. In order to calculate the economic contributions generated by the motorized uses of the forest, the economic contributions per visit were averaged over three counties then multiplied by the total number of motorized recreation visits (See Table 2) to the forest.

Table 12. Economic Contributions per 1000 Motorized Recreation Visits and total economic contributions generated by the Coconino National Forest (in 2002 dollar as published)

Per 1000 visits	Coconino County	Gila County	Yavapai County	Three County Average	Coconino National Forest Total
OHV Expenditures	109,052	95,437	153,043	119,177	35,640,586
Total OHV Recreation Trips	53,893	42,293	94,000	63,395	18,958,722
Vehicles/Equipment Purchase for OHV use	55,159	53,144	59,043	55,782	16,681,864
Labor Income Generated	26,187	17,662	36,714	26,854	8,030,827
Employment Generated	1.31	1.05	1.73	1.36	407

Table 13 presents a comparison of two economic contribution estimates in 2006 dollar. The economic contributions from the Silberman report were adjusted for inflation using the Consumer Price Index for all urban consumers. Motorized recreation activities contributed about 0.2% to 1% of labor income, and about 0.1% to 0.3% of total number of jobs to the regional economy of three counties.

Table 13. Total Economic Contributions of Motorized Recreation Visits to the Coconino National Forest (in 2006 dollar)

	Estimates based on the 2006 NVUM report	Estimates based on the 2002 Silberman Report
OHV Expenditures	N/A	40,594,009
Total OHV Recreation Trips	10,865,166	21,593,655
Vehicles/Equipment Purchase for OHV use	N/A	19,000,354
Labor Income Generated	9,020,600*	48,374,243
Employment Generated	127*	407

*These economic contributions estimates do not include the economic contributions generated by purchase and maintenance of vehicles and equipments.

Economic Consequences

The economic effects will be mostly short-term. In a long term, most of economic effects will be absorbed by the whole economy. For example, after experiencing increase or decrease in sales, most businesses will adjust their business structure to accommodate the changes.

Alternative 1

Direct Effect

Under this alternative, the economic contributions of motorized recreation are expected to grow. Total activity participations in motorized activities in the Coconino National Forest grew 27% from 2001 to 2005, and the number of visitors who said participating motorized activities was their main reason for their recreation visits for the forest grew 6%. If this trend continues, the economic contributions of motorized recreation are expected to be larger than now as expenditures for trips and for purchasing and maintaining vehicles and equipments would increase.

Indirect Effect

If implementation of this alternative would result in continued erosion of non-motorized recreation setting, participations to non-motorized recreation would be affected. The economic contributions from non-motorized recreation would experience stagnant growth or decrease. Total activity participations in non-motorized activities in the Coconino National Forest grew 26% from 2001 to 2005, and the number of visitors who said participating non-motorized activities was their main reason for their recreation visits for the forest grew 17%. The economic contributions of non-motorized recreation activities in the Coconino National Forest were not analyzed here. Considering the number of visits for non-motorized recreation activities was five times more than that for motorized recreation, the economic contributions of non-motorized recreation in the forest should be significant.

Alternative 3

Direct Effect

This alternative will limit access to the forest to the open road system and some designated routes may experience more traffic as options for travel routes decrease. The reduced or diminished motorized recreation opportunity could result in decreased number of visits to the forest and short trip durations, which could result in reduced economic contributions from motorized recreation. However, if most people adapt to use of the designated road and trail system, there may not be significant changes in recreation demand. The economic impacts of this alternative could be neutral or negative, but the extent of the change can not be estimated without knowing the reduced number of visitors and changes in their trip expenditures, specifically resulting from the implementation of this alternative.

Indirect Effect

The more limited access to the forest can eventually lead to reduced expenditures for purchasing and maintaining OHV vehicles and equipments, if there are no substitute sites for motorized recreation activities. Although the reduction of motorized access to the forest may not increase non-motorized recreation activities greatly, decrease in motorized recreation can result in improvements in non-motorized recreation setting and more diversity to recreation settings in the forest. Potentially, negative effects on OHV-related industries can mean positive effects on non-motorized recreation related businesses.

Alternative 4

The economic effects of this alternative would be similar to those of Alternative 3.