

**Institute for Public Policy  
and Economic Analysis**

**The Economic  
Impact of  
Ski Areas  
Represented by  
the Inland  
Northwest Ski  
Association**

**David Bunting, Ph.D.  
Mark Wagner, M.A.  
D. Patrick Jones, Ph.D.**

October 3, 2005

# The Economic Impact of Ski Areas Represented by the Inland Northwest Ski Association

David Bunting, PhD  
Professor of Economics,  
Institute for Public Policy and Economic Analysis  
Department of Economics  
Eastern Washington University  
Cheney, Washington 99004  
509-359-7947  
[dbunting@ewu.edu](mailto:dbunting@ewu.edu)

Mark Wagner, MA  
Policy Analyst,  
Institute for Public Policy and Economic Analysis  
Eastern Washington University  
509-359-6937  
[mwagner@mail.ewu.edu](mailto:mwagner@mail.ewu.edu)

D. Patrick Jones, PhD  
Executive Director,  
Institute for Public Policy and Economic Analysis  
Eastern Washington University  
509-358-2266  
[dpjones@mail.ewu.edu](mailto:dpjones@mail.ewu.edu)

October 3, 2005

Institute for Public Policy and Economic Analysis  
668 N. Riverpoint Blvd.  
Suite A, Room 238  
Eastern Washington University  
Spokane, WA 99202-1667

# Table of Contents

	Page
List of Tables and Figures.....	3
1. Executive Summary.....	4
2. Analytical Framework	
2.1 Introduction.....	8
2.2 Impact Analysis.....	9
2.3 National and Regional Ski Industry Trends.....	12
2.4 Data.....	18
3. Economic Impacts	
3.1 Introduction.....	20
3.2 Total Impacts.....	22
3.3 Indirect Impacts by Industry.....	25
3.4 Induced Impacts by Industry.....	26
3.5 Tax Impacts.....	28
3.6 Summary.....	29
4. Comparisons with Other Studies.....	31
5. Concluding Thoughts.....	34
6. References.....	35

## List of Tables and Figures

- Figure 2.1 Location of INSA Member Ski Resorts
- Figure 2.2 Ski Visitors and Ski Areas, 1984-85 to 2003-04
- Figure 2.3 Index of Ski Visits, (2000-01 = 100)
- Figure 2.4 ID-WA Share of U.S. Ski Visits
- Figure 2.5 INSA Share ID-WA Ski Visits
- Figure 2.6 Spending Patterns at Ski Facilities
- Figure 4.1 Oregon Ski Areas Monthly Employment Levels
- Table 2.1 Ski Visits
- Table 2.2 Index of Ski Visits & INSA Visit Shares
- Table 2.3 Location of INSA Season Pass Holders
- Table 2.4 Percent Ski Facility Revenues by Source
- Table 2.5 INSA Operating Statistics
- Table 2.6 Composition of IMPLAN Sector 478 for the U.S.
- Table 2.7 Average Revenues, Payroll, Employment, Sector 478 for INSA Counties
- Table 3.1 INSA Economic Impact: New Visitors Scenario
- Table 3.2 INSA Economic Impact: New Visitors + Retention Scenario
- Table 3.3 INSA Economic Impact: All INSA Sales Scenario
- Table 3.4 INSA Output Multipliers
- Table 3.5 INSA Impact Multipliers
- Table 3.6 Indirect Impacts of the INSA in the Four County Region
- Table 3.7 Induced Impacts of the INSA in the Four County Region
- Table 3.8 Total Business Taxes Generated in the Four County Region (\$)
- Table 3.9 Direct Impacts of INSA Facilities by Scenario
- Table 3.10 Total Impacts of INSA Facilities by Scenario
- Table 4.1 Ski Impact Multipliers
- Table 4.2 Output Multipliers: Vermont and INSA
- Table 4.3 Employment by Occupation from Oregon Ski Impact Study
- Table 4.4 Shares of Off-Site Ski Expenditures (%)

## 1. Executive Summary

The Inland Northwest Ski Association (INSA) is represented in Washington State by 49 Degrees North in Stevens County and Mt. Spokane in Spokane County, and in Idaho State by Lookout Pass and Silver Mountain, both in Shoshone County, and Schweitzer Mountain in Bonner County. In the four seasons of 2000-01 through 2003-04, INSA resorts averaged just over \$17 million in total annual visitor spending and over 670 full and part time jobs, with an annual payroll of \$6.3 million.

The mission of the INSA is to “raise awareness of Inland Northwest skiing and snowboarding opportunities.” To this end, the association contracted with the Institute of Public Policy and Economic Analysis at Eastern Washington University to estimate the economic impact of its members on the counties where their ski facilities are located. The study goal is to determine the potential role and relative importance of INSA activities in local and regional development plans and proposals. The impact analysis was conducted with IMPLAN Pro, an impact analysis program developed by the IMPLAN Group, using operating statistics provided by INSA members and county data compiled by IMPLAN.

Recently, participation in skiing and related resort activities, as measured by the number of annual visitors to all U.S. ski areas, facilities and resorts, increased about 10 percent, after a long period of stagnation. From the 2000-01 through the 2003-04 season, ski facilities in Idaho and Washington averaged 3.2 million visitors annually, ranging from a high of 3.6 million during the 2001-02 season to a low of 2.6 million during the next season. Annual visits to INSA facilities show similar variation, ranging between 440,000 and 530,000 visitors, with an average of 487,000 over this four season period.

While a complete residence survey is not available, 71 percent of INSA season pass holders were drawn from the Inland Northwest, with more than 63 percent residing in Spokane County and most of the remaining living in Kootenai County. Visitors spending patterns at INSA facilities are consistent with those found nationally or for similar resorts, with lift tickets and season passes generating nearly 50 percent of total revenue, followed by restaurant and bar sales, lodging and miscellaneous sales.

In the industrial classification system developed by the U.S. Census Bureau, businesses operating ski facilities are assigned to industry 713920 (Skiing Facilities) and included in subsector 713 (Arts, Gambling and Recreation Industries). Skiing facilities and other parts of this subsector were incorporated into the impact modeling system as sector 478, Other Amusement, Gambling, and Recreation. Overall, INSA members are about 20 percent smaller than typical ski facilities nationally. While average employment of 134 is less than the national average of 168, average wages are slightly larger. When restricted to sector 478 industries in the four county study region, total sales at INSA ski facilities account for 11.4 percent of total sector output of \$149.3 million and 23.5 percent of total sector employment of 2,851.

Economic impact analysis seeks to estimate how *new*, not replacement, spending ultimately affects regional output, employment, and income. Major sources of new spending from INSA resorts are skiers from other regions and from “import substitution” by local skiers, that is, the substitution of out-of-area skiing and other out-of-area activities by residents of the four counties. In this report, “retention” refers to the more technical term of import substitution.

Impacts are estimated under three scenarios. All three use the average value of activities over the four seasons. Under the first, **New Visitor** spending, estimated at 29 percent of INSA output (sales), or \$4.94 million, indirectly resulted in \$1.97 million in purchases from industries supporting INSA activities and induced another \$1.52 million in consumer spending. This yielded a total annual impact of \$8.42 million. Direct employee compensation of \$1.79 million produced a total impact of \$3.27 million, business taxes of \$0.30 million grew to \$0.47 million in total taxes and direct average monthly employment of 194 expanded to a total employment impact of 276 equivalent jobs.

Under the second and most plausible scenario, **New Visitor + Retention** spending, estimated at 79 percent of output, or \$13.45 million, led to indirect sales of \$5.36 million and induced \$4.13 million in additional consumer spending. This yielded a total impact of \$22.94 million. Direct employee compensation of \$4.96 million produced a total impact of \$8.90 million, business taxes of \$0.81 million grew to \$1.28 million and

direct average employment of 529 expanded to a total employment impact of 751 equivalent jobs.

Under the third scenario, assuming that total ski activity represented new spending, here **All INSA Sales**, \$17.02 million produced \$6.79 million in indirect sales and \$5.23 million in induced consumer spending. This yielded a total annual impact of \$29.04 million. Direct employee compensation of \$6.28 million produced a total impact of \$11.26 million, business taxes of \$1.03 million grew to \$1.62 million and average monthly employment of 670 expanded to a total employment impact of 951 equivalent jobs.

Each additional \$1.0 million dollars in sales directly leads to \$0.37 million in personal income, \$0.06 million in business taxes and 39.4 jobs. After indirect and induced effects, output increases to \$1.71 million, income to \$0.66 million, business taxes to \$0.10 million and 56 equivalent jobs are created. A \$1.0 million change in employee compensation leads to \$1.79 million in total personal income; a \$1.0 million change in business taxes produces \$1.57 million in total business taxes while each new INSA job ultimately results in a total of 1.42 equivalent regional jobs.

Based on the most plausible scenario, the *indirect*, or inter-industry impact of \$5.36 million by INSA resorts revealed an interesting pattern of affected industries. At the top was the real estate industry, accounting for 17 percent of all indirect spending, followed by professional, scientific, and technical services, at 11 percent. The indirect impact of employee compensation of \$2.15 million was distributed first to professional, scientific, and technical services industry incomes, at 16 percent, and then to administrative and support services, at 10 percent. Of the indirect employment impact of 122 equivalent jobs, 14 percent went to both the professional, scientific, and technical services industry and administrative and support services.

Again based on the most plausible scenario, the *induced, or consumption-driven* impacts of the INSA revealed similar distribution of affected industries. The induced output of \$4.13 million went first to health care and social assistance (17%) followed by both the owner occupied dwellings and retail trade sectors (12%). The induced impact for employee compensation of \$1.79 million, was led by a 27 percent increase in the incomes of health care and social assistance personnel and 17 percent increase for

retail trade personnel. Finally, the induced impact on employment was 100 equivalent jobs, of which 21 percent were in health care and social assistance followed by 18 percent in the retail trade industry.

Tax effects are separated because of differing Idaho and Washington tax codes. Under the second, or New Visitor + Retention scenario, INSA members paid an estimated \$0.81 million in direct business taxes. This increased to nearly \$1.28 million when total effects were considered. Nearly all these taxes were state and local sales and property taxes, accounting for 76 percent of the taxes paid in Idaho and 81 percent in Washington.

In summary, impacts from the third scenario are about three and a half times larger than those from the first. When only new visitors are considered, regional output is estimated to increase by \$8.42 million, personal income by \$3.27 million, business taxes by \$.47 million and employment by 276 equivalent jobs. Under the third, most optimistic scenario, where all INSA sales represent new spending, output would increase by \$29.04 million, personal income by \$11.26 million, business taxes by \$1.62 million and employment by 951 equivalent jobs. Under the second, most reasonable scenario, INSA facilities cause regional output to increase by \$22.94 million, personal income by \$8.90 million, business taxes by \$1.28 million and employment by 751 equivalent jobs.

The economic impact of ski facilities has been studied in a variety of contexts, with the common finding that they create significant economic benefits in the region where they are located. Impact multipliers found for INSA compare favorably with those from prior studies for the ski industry in Michigan, North Carolina and Vermont and for specific resorts in Michigan and Colorado.

To bring the most likely scenario, New Visitors + Retention, into clearer relief, INSA members should consider more elaborate visitor surveys that elicit spending patterns, geographical origins, and skiing and recreational experiences that compete with their resorts. This information would be useful for more elaborate impact studies as well as the identification of unmet skier needs and potential opportunities for expanded resort activities.

## 2. Analytical Framework

### 2.1 Introduction

The Inland Northwest Ski Association (INSA) is a non-profit organization representing five ski facilities or resorts in the Inland Northwest. Members in Washington State include 49 Degrees North in Stevens County and Mt. Spokane in Spokane County while members in Idaho State are Lookout Pass and Silver Mountain, both in Shoshone County, and Schweitzer Mountain in Bonner County. Figure 1 shows the location of each of these ski areas.

**Figure 2.1**  
**Location of INSA Member Ski Resorts**



The season for INSA ski areas generally begins around Thanksgiving and ends in early to mid April with four of the five areas, 49 Degrees North, Mt. Spokane, Schweitzer Mountain and Silver Mountain, providing night skiing. Snowfall ranges between 300 to 387 inches annually with Lookout Pass usually receiving the greatest amount. Only Schweitzer and Silver have snowmaking capacity. Individual ski resorts are between 3,790 to 4,500 feet above sea level, with summits of ski slopes ranging from 5,650 to 6,400 feet above sea level. The number of runs at each resort range from 23 to 59 with the longest between 1.5 to 2.7 miles in length. Resort ski terrain ranges from 400 to 2,500 acres with areas for beginner, intermediate, and advanced skiers; three have areas designated for expert skiers.

The stated mission of the INSA is to “raise awareness of Inland Northwest skiing and snowboarding opportunities.” To this end, the association contracted with the Institute of Public Policy and Economic Analysis at Eastern Washington University to estimate the economic impact of area resorts on the counties where member ski facilities are located to determine the potential role and relative importance of INSA activities in local and regional development plans and proposals. To avoid disclosure of sensitive business information, data relating to individual resorts are combined and all members are treated as a single facility, “INSA.” Similarly, relevant data relating to the four counties where INSA reside are also combined in a single region, “Inland Northwest.”

The economic impact of INSA ski area activities is estimated using data and economic impact multipliers compiled and estimated by the Minnesota IMPLAN Group for its impact analysis modeling system. The analysis begins with a discussion of the methodology of impact analysis and an explanation of different types of economic impacts, followed by a discussion of recent ski industry trends and the economic sector of which ski facilities are assigned. Direct, indirect, induced, and total economic impacts of INSA are then presented and contrasted with those for other sectors composing the Inland Northwest region. The report concludes with a review of ski industry impact studies and some recommendations for additional information to more precisely document the role of the INSA in the Inland Northwest economy.

## **2.2 Impact Analysis**

Using operating statistics provided by INSA members and county data compiled by IMPLAN, the regional economic impacts of INSA activities are estimated with IMPLAN Pro, an impact analysis program. As described by the IMPLAN Group (MIG),

The IMPLAN (IMpact analysis for PLANing) program was originally developed by the USDA Forest Service in cooperation with the Federal Emergency Management Agency and the USDA Bureau of Land Management to assist the Forest Service in land and resource management planning. MIG was formed in 1993 to privatize the development of IMPLAN data and software. Its software performs the necessary calculations, using study area data, to create models and provides an interface to study changes in a region’s economic description, create impact scenarios and to introduce changes to the local model.

IMPLAN data and accounts closely follow the accounting conventions used by the Bureau of Economic Analysis (BEA) when developing an Input-Output (I-O) model of the U.S. economy as well as formats recommended by the United Nations. (MIG, i-iii)

According to the BEA, the input-output (I-O) accounts show how the more than 500 industries that comprise the U.S. economy interact; specifically, how industries provide input to, and use output from, each other to produce gross domestic product. These accounts provide detailed information on the flows of the goods and services that make up the production processes of industries. Benchmark I-O accounts are based on detailed data from the economic censuses that are conducted every five years by the Bureau of the Census while annual accounts are prepared for selected years between the benchmarks based on less comprehensive data. The most recent benchmarks, for 1997, use a new classification system that is based on the North American Industry Classification System (NAICS) while the most recent annual account is for 2002.

I-O accounts can be used to study industry production or as a framework for preparing economic statistics. The accounts are an important analysis tool because they show the production functions of individual industries and the interactions among producers and between producers and final users in the economy. Specifically, these accounts can be used to estimate the direct and indirect effects of changes in final uses on industries and commodities; for example, to estimate the effects of a strike or a natural disaster on the economy, or, supplemented with additional information, to estimate the effects of an increase in U.S. exports on employment. (BEA)

To develop models to study local economies, MIG reconfigures coefficients and relationships from the national input-output model for local application. Data for this analysis are taken from state and federal sources compiled by the BEA, Bureau of Labor Statistics (BLS), U.S. Department of Commerce and state labor market information agencies such as the Washington State Labor Market and Economic Analysis (LMEA) Branch or Idaho State Department of Employment. Because of missing data, disclosure rules and collection procedures, some of these county data have to be estimated from more aggregate state or national sources. Data currently provided by MIG are for 2002, the most recent year available. Greater details on MIG multiplier estimation procedures and data compilation methods are found in the "Data Guide" section of the IMPLAN Professional Version 2.0 user guide.

Three conventional indicators of economic activity, output, employment and labor income, will be used to estimate the impacts of INSA resorts on the regional economy, defined as follows:

**Output** is the value of production by industry for annual calendar year production. Output can be measured either by the total value of purchases by intermediate and final consumers (final sales), or by intermediate outlays plus value-added. Output can also be thought of as a value of sales plus or minus inventory. (MIG, 253)

**Employment** includes total wage and salary employees as well as self-employed jobs in a region. It includes both full-time and part-time workers and is measured in annual average jobs. (MIG, 231)

**Income** is employee compensation. Employee compensation is wage and salary payments as well as benefits, including health and life insurance, retirement payments, and any other non-cash compensation. (MIG, 249)

The relative size of the output, employment and labor income of the INSA Ski resorts has an initial, direct impact the regional economy. Further, changes in these indicators also have impacts.

**Direct Impacts** are changes in the industry used to describe the events being analyzed. For example, output of INSA ski areas increase by \$1,000,000.

**Indirect Impacts** are changes in inter-industry purchases in response to the new demands of the directly affected industry. For example, sales in the plastic pipe industry increase by \$30,000 because INSA resorts require additional pipe in their facilities due to their increased output.

**Induced Impacts** are changes in spending from households as income increases or decreases due to changes in production. For example, output in the region increases by \$100,000 as the additional income paid to employees to produce the additional output at the INSA resort and plastic pipe industries is spent.

It should be noted that these impacts are not one time events. Instead, the pipe industry might require additional trucking services that could lead to additional truck sales and then on to additional truck insurance, fuel, tires and so on. Induced spending has this same “multiplied” effect, in that employees hired as a consequence of

additional household spending also receive additional income which, when spent, leads to still further output and income.

However, these rounds of spending and respending do not continue indefinitely. Instead, the impacts of the initial output change and subsequent rise in earnings quickly leak out of the region in the form of imports or purchases of goods and services produced in other regions, out-of-area spending, taxes and saving.

When added, the three impacts measure the **Total Impacts** of the initial output change. Thus,

Direct Impacts-----> Indirect and Induced Impacts----->Total Impacts  
and

$$\text{Direct Impacts} + \text{Indirect Impacts} + \text{Induced Impacts} = \text{Total Impacts.}$$

The ratio of the total to the direct impacts is called a **multiplier**, viz.,

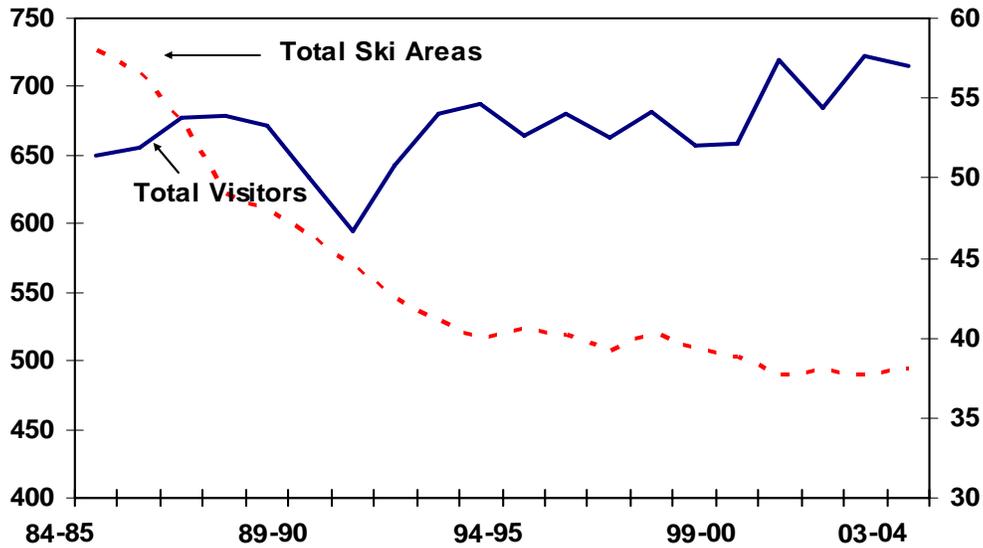
$$\text{Multiplier} = \frac{\text{Total Impacts}}{\text{Direct Impacts}}$$

Obviously, for the same initial change in output, industries with the largest multipliers will have the greatest economic impact on the regional economy. However, large multipliers do not imply large industries. Since technical production and employee compensation characteristics of an industry determine the size of its multiplier, a relatively large industry could have output, employment and income multipliers much smaller than a relatively insignificant one. Usually, because of spending leakages, multipliers are rarely larger than 2.0.

### **2.3 National and Regional Ski Industry Trends**

Recently, participation in skiing and related wintersport activities, as measured by the number of annual visitors to all U.S. ski areas, facilities and resorts, increased about 10 percent, after a long period of stagnation. As the right hand scale of Figure 2.2 shows, from the mid 1980s to the late 1990s the number of visitors to U.S. ski areas fluctuated around 52 million annually, increasing to about 57 million visitors during the 2000-01 ski season. During this period of low growth, the number of ski areas, as shown by the left hand scale, fell from about 30 percent, from 720 to 490.

**Figure 2.2 Ski Visitors and Ski Areas, 1984-85 to 2003-04**



With year to year fluctuations explained by weather and political conditions, annual ski visitors at all U.S. facilities since the recent growth spurt have remained around 57 million as shown in Table 2.1. Ski facilities in Idaho and Washington averaged 3.2 million visitors annually, ranging from a high of 3.6 million during the 2001-02 season to a low of 2.6 million during the next season. Visits to INSA facilities show similar variation, averaging 487,000 annually, ranging between 440,000 and 530,000 visitors annually.

**Table 2.1  
Ski Visits**

Year	US	ID-WA	INSA
2000-01	57,337,114	3,199,539	472,851
2001-02	54,410,802	3,619,905	502,641
2002-03	57,593,611	2,620,905	440,425
2003-04	57,067,320	3,317,993	530,751
<b>Ave</b>	<b>56,602,212</b>	<b>3,189,586</b>	<b>486,667</b>

Source: NSAA, INSA

For comparative purposes, figures from Table 2.1 are shown in Table 2.2 as indexes based on 2000-01 equal to 100. As can be seen, growth in skiing in Idaho and Washington matched the national growth, while INSA growth was 3 percent larger. The table also shows the Idaho/Washington share of U.S. ski visits and INSA's share of the

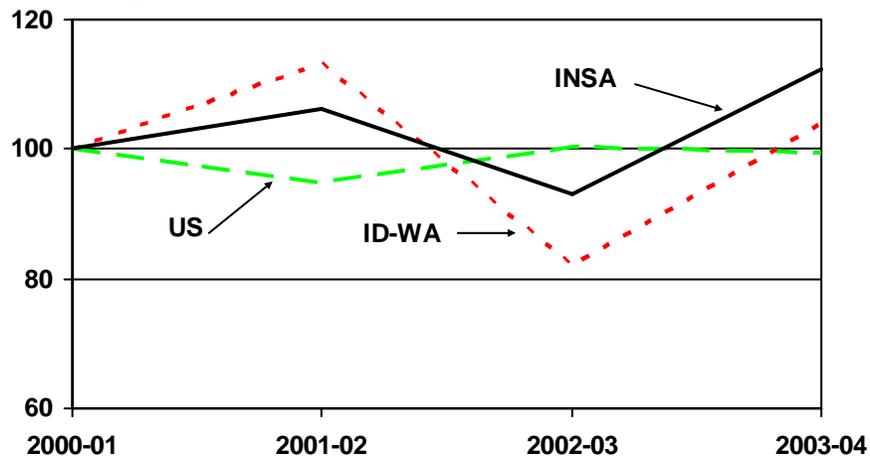
two state visits. By either measure, changes in skiing in both states matched national changes while INSA increased its relative share. These conclusions are illustrated in Figure 2.2, showing U.S., Idaho-Washington (ID-WA), and INSA visits from 2000-01 to 2003-04, Figure 2.3, showing ID-WA share of U.S. visits and Figure 2.4, showing the INSA share of ID-WA visits.

**Table 2.2**  
**Index of Ski Visits & INSA Visit Shares**

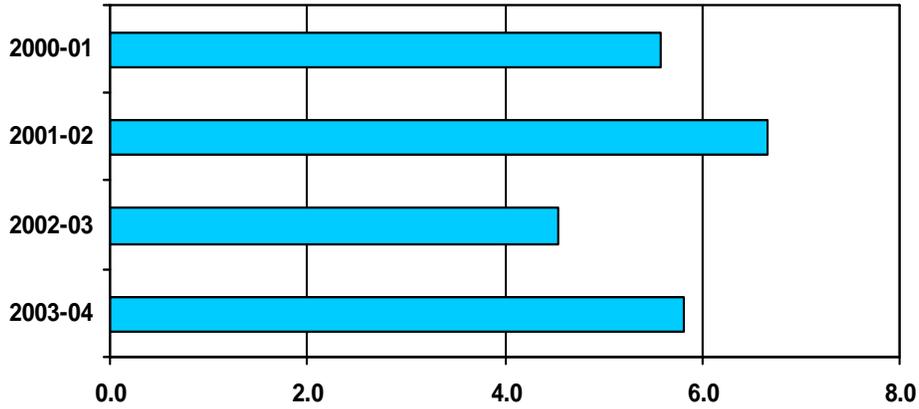
Year	US	ID-WA	INSA	ID-WA	INSA
				Share	Share
				US	ID-WA
2000-01	100	100	100	5.6	14.8
2001-02	95	113	106	6.7	13.9
2002-03	100	82	93	4.6	16.8
2003-04	100	104	112	5.8	16.0
<b>Ave</b>	<b>99</b>	<b>100</b>	<b>103</b>	<b>5.6</b>	<b>15.3</b>

Source: NSAA, INSA

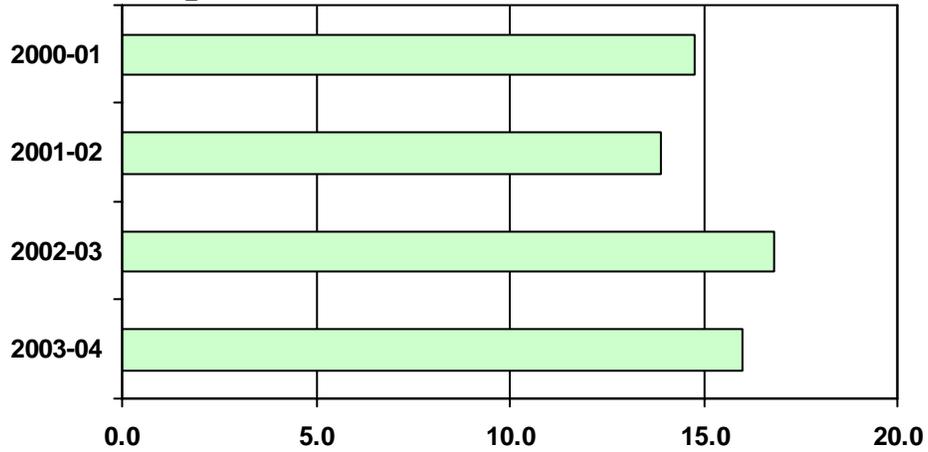
**Figure 2.3 Index of Ski Visits, (2000-01 = 100)**



**Figure 2.4 ID-WA Share of U.S. Ski Visits**



**Figure 2.5 INSA Share of ID-WA Ski Visits**



While a complete residence survey of visitors is not available, Table 2.3 shows that 71 percent of INSA season pass holders are drawn from counties composing the Inland Northwest, with more than 63 percent residing in Spokane County alone. Of the remaining 29 percent, most live in Kootenai County with others scattered in Montana, the Tri-Cities, and the Lewiston-Clarkston-Moscow-Pullman area.

**Table 2.3  
Location of INSA Season Pass  
Holders**

<b>Location</b>	<b>Share</b>
Four County Region	71.4
Bonner County, ID	4.2
Shoshone County, ID	1.2
Spokane County, WA	62.8
Stevens County, WA	3.1
Other	28.7
Kootenai County, ID	19.1
All Other Locations	9.6
<b>Total</b>	<b>100.0</b>

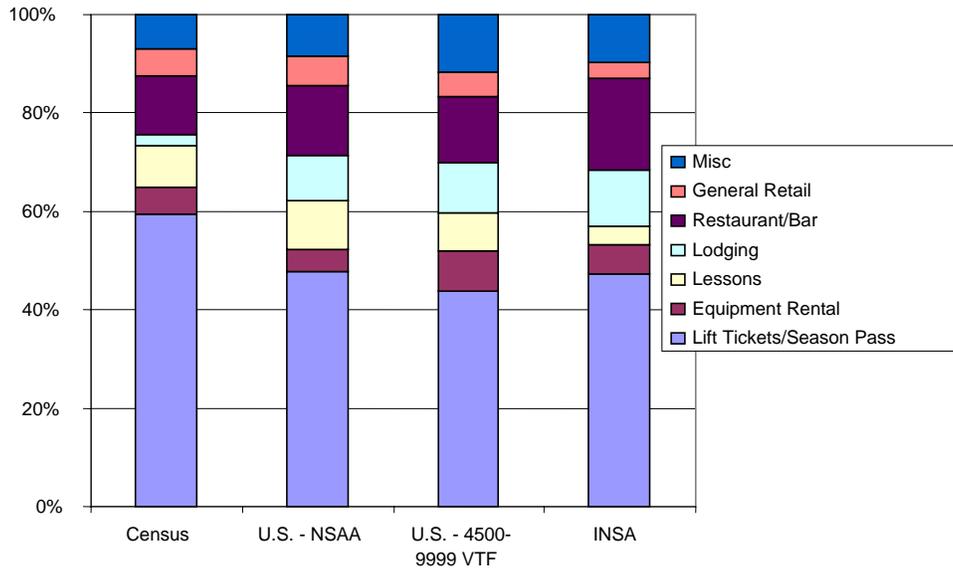
Visitors spending patterns at INSA facilities are consistent with those found nationally in the 2002 U.S. Economic Census [U.S. Census, 2004] or by the National Ski Areas Association [NSAA] for all member resorts or for those similar to INSA members as measured by ski lift capacity VTF/h (Vertical Transport Feet per hour: the vertical rise of lifts times the rated skiers per hour capacity in thousands). As Table 2.4 shows and Figure 5 illustrates, lift tickets and season passes generate nearly 50 percent of total revenue, followed by restaurant and bar sales, lodging and miscellaneous sales.

**Table 2.4  
Percent Ski Facility Revenues by Source**

<b>Revenue Source</b>	<b>Census</b>	<b>NSAA-U.S.</b>		<b>INSA</b>
		<b>All</b>	<b>4500-9999 VTF</b>	
Lift Tickets/Season Pass	59.5	47.8	43.7	47.2
Equipment Rental	5.4	4.4	8.2	6.0
Lessons	8.5	10.1	7.7	3.7
Lodging	2.3	9.3	10.3	11.7
Restaurant/Bar	11.9	14.1	13.3	18.5
General Retail	5.6	6.0	5.0	3.3
Miscellaneous	6.9	8.4	11.7	9.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Census, NSAA, and INSA

**Figure 2.6 Spending Patterns at Ski Facilities**



Operating results for INSA facilities for the 2000-01 through 2003-04 seasons are summarized in Table 2.5. While the \$2 million increase in total sales for 2003-04 seems to suggest a recent growth surge, this is largely explained by extremely favorable snowfalls and weather conditions. Over the four years considered, INSA total sales averaged about \$17 million annually while payrolls averaged \$6.2 million. Since skiing is a seasonal activity, employment sharply fluctuated, averaging 670 monthly with a maximum of 1,155 at the height of the ski season, in some months between December and March, depending on snowfall.

**Table 2.5  
INSA Operating Statistics**

Indicator	2000-01	2001-02	2002-03	2003-04	Average
Total Sales (Output)*	16,404,525	16,801,582	16,417,423	18,453,721	17,019,312
Total Payroll*	6,122,667	6,206,385	6,135,016	6,659,110	6,280,795
Persons Employed:					
Maximum	1,171	1,162	1,150	1,136	1,155
Monthly Average	684	690	653	649	670
Visitors	472,851	502,641	440,425	530,751	486,667

Source: INSA; \*2002 dollars

## 2.4 Data

The impact of INSA operations on regional output, employment, wages and taxes is estimated by incorporating operating statistics provided by INSA members into the IMPLAN regional impact economic model composed of all Inland Northwest industries. Data for the IMPLAN model are based in part on the U.S. Economic Census, conducted every five years by the U. S. Census Bureau to compile “facts about the structure and functioning of the nation’s economy.” The Census provides measures of inputs and outputs, production and prices to measure short-term changes in economic conditions. Its data are intended to be used by federal, state and local policy makers to monitor and access business activity, by trade associations to identify market trends, and by individual businesses to evaluate their performance relative to industry or area averages.

Data from the economic census are organized according to the 2002 North American Industry Classification System (NAICS), composed of 20 sectors, subdivided into 100 three digit subsectors, 317 industry four digit industry groups and 1,179 six digit industries. The ski industry is assigned to NAICS sector 71 (Arts, Entertainment and Recreation), subsector 713 (Arts, Gambling and Recreation Industries), industry group 7139 (Other Amusement and Recreational Services) and industry 713920 (Skiing Facilities), defined as comprising of

. . . establishments engaged in (1) operating downhill, cross-country, or related skiing areas and/or (2) operating equipment, such as ski lifts and tows. These establishments often provide food and beverage services, equipment rental services, and ski instruction services. Four season resorts without accommodations are included in this industry.

Skiing Facilities and other parts of NAICS subsector 713 were incorporated into the IMPLAN impact modeling system as IMPLAN sector 478, Other Amusement, Gambling, and Recreation. While the skiing industry is a small fraction of this IMPLAN sector as Table 2.6 shows, accounting for less than one percent of the establishments, three

percent of annual revenues and nine percent of paid employment, Table 2.7 indicates that on an establishment or average size basis, ski facilities have the largest number of employees and rank only behind gambling casinos in terms of average sales or payrolls.

**Table 2.6  
Composition of IMPLAN Sector 478 for the U.S.**

<b>NAICS Code</b>	<b>Group or Industry</b>	<b>Annual Estab</b>	<b>Annual Revenue (\$M)</b>	<b>Annual Payroll (\$M)</b>	<b>1Q Payroll (\$M)</b>	<b>Paid Employees</b>
7131	Amuse. parks, arcades	3,196	9,622	2,111	429	123,419
7132	Gambling industries	2,201	20,181	3,726	892	161,823
71391	Golf courses	12,189	17,434	6,610	1,346	310,833
71392	Skiing facilities	421	1,813	645	281	70,648
71393	Marinas	4,276	3,482	759	157	28,173
71399	Other amuse., rec. inds.	13,223	5,843	1,420	309	84,871
	<b>Total</b>	<b>35,506</b>	<b>58,375</b>	<b>15,270</b>	<b>3,414</b>	<b>779,767</b>
	Share skiing facilities (%)	1.19	3.11	4.22	8.23	9.06

Source: U.S. Census Bureau (2002). Economic Census

Employment figures in the 2002 Economic Census represent “full- and part-time employees who were on the payroll during the pay period including March 12.” Since in the Inland Northwest, this date coincides with seasonally high ski industry employment and low employment in other industries such as golf courses and marinas, ski employees will be disproportionately represented in sector employment statistics. This is shown in Table 2.6 where 44 percent of the industry’s annual payroll is paid in the first quarter (1Q). This seasonality is also apparent in average earnings where first quarter earnings are similar to other industries but less than half or more on an annual basis.

**Table 2.7**  
**Average Revenues, Payroll, Employment, Sector 478 for INSA Counties**

<b>NAICS Code</b>	<b>Group or Industry</b>	<b>Average Revenue</b>	<b>Average Payroll</b>	<b>Ave 1Q Payroll</b>	<b>Ave Emp</b>	<b>Ave Ann Wage</b>	<b>Ave 1Q Wage</b>	<b>1Q/Ann Payroll</b>
7131	Amuse. parks, arcades	3,010,590	660,517	134,200	39	17,104	3,475	20.3
7132	Gambling industries	9,169,114	1,692,866	405,054	74	23,025	5,509	23.9
71391	Golf courses	1,430,287	542,249	110,432	26	21,264	4,330	20.4
71392	Skiing facilities	4,305,513	1,531,302	667,185	168	9,125	3,976	43.6
71393	Marinas	814,296	177,570	36,750	7	26,951	5,578	20.7
71399	Other amuse., rec. inds	441,913	107,364	23,395	6	16,727	3,645	21.8
	<b>INSA</b>	<b>3,403,862</b>	<b>1,256,159</b>		<b>134</b>	<b>9,374</b>		

Source: U.S. Census Bureau (2002). Economic Census; INSA

Overall, INSA members are about 20 percent smaller than typical facilities nationally, with average revenues of \$3.4 million and payroll of \$1.3 million compared to \$4.3 and \$1.5 million nationally. While average employment of 134 is less than the national average of 168, average wages are slightly larger. When the components of IMPLAN sector 478 are restricted to other amusement, gambling, and recreation industries in the four county region of the INSA, total sales of INSA ski facilities of \$17.0 million account for 11.4 percent of total output of \$149.3 million. Total employment of 670 represents 23.5 percent of total sector employment of 2,851.

### 3. Economic Impacts

#### 3.1 Introduction

The basic purpose of economic impact analysis is to estimate how an initial change in spending ultimately affects the output, employment, and income of a particular region. In the case at hand, impact analysis can be used to determine how increases in spending on ski related activities can influence economic activity in the counties where INSA resorts are located. While any skiing related spending has economic effects, impact analysis focuses on the effects of new, not replacement, spending where one activity is substituted for another.

There are two major sources of new spending at INSA resorts. First, the resorts “export” ski services and activities by attracting skiers from other regions. Although information is incomplete, Table 2.3 showed that about 29 percent of INSA season pass holders did not reside in the four county region. This fraction is assumed to represent the share of all “out-of-area” visitors to INSA facilities, implying that 29 percent of INSA sales revenues represent new spending to these four counties.

A second source for new spending is based on the counterfactual, “what if” situation, where the INSA skiing facilities are assumed not to exist. If they did not, what kind of recreational activities would all local skiers undertake? Would they all go to Disneyland or leave the Inland Northwest to ski elsewhere, thereby causing a reduction in local spending and economic activity? While these questions can never be precisely answered, they do suggest that local facilities “capture” spending that would otherwise leave the area. In effect, these facilities allow local skiers to substitute local skiing for out-of-area skiing and other out-of-area activities they might have otherwise undertaken. In other words, the use of local facilities constitutes a form of “import substitution” and represents another type of new spending. We refer to this source of spending as “retention”.

Because the fraction of local skiers who would use out-of-area facilities is unknown, the economic impact of INSA on the Inland Northwest is estimated under three scenarios. In the first, labeled **New Spending**, the 29 percent of reported INSA output (sales) representing spending by visitors as measured by fraction of non-residential season pass holders, captures the direct effects. In the second, of the remaining output of 71 percent, 70 percent of that is assumed to represent substitution of local skiing for out-of-area skiing and other activities. Combining the first scenario with local substitution, the second scenario, labeled **Visitors + Retention** represents 79 percent of reported INSA output (sales), e.g.,  $29\% + (71\% \times .7)$ . In the final scenario, labeled **All INSA Sales**, all reported INSA output is considered as representing new spending. While the first scenario seems too pessimistic and the last perhaps too optimistic, the middle one assuming skiing by the four county residents at any location would decline about 30 percent if local facilities did not exist, seems most plausible.

### 3.2 Total Impacts

From 2000-01 to 2003-04, INSA ski areas averaged \$17.02 million in annual total output or sales. Under the first scenario, **New Visitors**, where only 29 percent of this output or \$4.94 million represents new direct spending, the impact of the INSA on the four county region composed of Spokane and Stevens Counties in Washington and Bonner and Shoshone Counties in Idaho, as shown in Table 3.1, consists of \$1.97 million in sales of goods and services sold by various other industries to the INSA and \$1.52 million from the spending of incomes earned by people associated with the INSA for a total annual impact of \$8.42 million. The income paid INSA employees because of these visitors was \$1.79 million. When spent, this income as well as that paid to those employed in industries supporting INSA activities, had a total impact of \$3.27 million. From revenues created by the visitors, INSA ski areas directly paid an estimated \$0.30 million in business taxes, which, after the indirect and induced effects are taken into account, grew to \$0.47 million in total business tax effects. Finally, in this scenario, the INSA directly employed an estimated monthly average of 194 people and indirectly caused or induced employment of the equivalent of another 82 people for a total employment impact of 276 workers.

**Table 3.1**  
**INSA Economic Impact: New Visitors Scenario**

Indicator	Direct	Indirect	Induced	Total
Output*	4.94	1.97	1.52	8.42
Personal Income*	1.79	.79	.66	3.27
Business Taxes*	.30	.08	.09	.47
Employment	194	45	37	276

\*Millions 2002 dollars

Under the second scenario of new visitors and import substitution, **New Visitors + Retention**, new direct spending is \$13.45 million, or 79 percent of average output. The total impact of the INSA as shown in Table 3.2 here consists of \$5.36 million from sales of goods and services sold by various other industries to the INSA and \$4.13 million from the spending of incomes earned by people associated with the INSA for a total annual impact of \$22.94 million. New direct income paid to INSA employees in this

scenario was \$4.96 million. When spent, this income, as well as that paid to those employed in industries supporting INSA activities, had a total impact of \$8.90 million. From resort revenues, INSA ski areas directly paid an estimated \$0.81 million in business taxes, which, after the indirect and induced effects are taken into account, grew to \$1.28 million in total business tax effects. Finally, an estimated monthly average of 529 people were directly employed which indirectly caused or induced employment of the equivalent of another 222 people for a total employment impact of 751 workers.

**Table 3.2**  
**INSA Economic Impact: New Visitors**  
**+ Retention Scenario**

Indicator	Direct	Indirect	Induced	Total
Output*	13.45	5.36	4.13	22.94
Personal Income*	4.96	2.15	1.79	8.90
Business Taxes*	.81	.21	.26	1.28
Employment	529	122	100	751

\*Millions 2002 dollars

Under the third scenario, **All INSA**, all INSA direct sales of \$17.02 million are considered new spending. As shown in Table 3.3, the total impact of the INSA here consists of \$6.79 million from sales of goods and services sold by various other industries to the INSA and \$5.23 million from the spending of incomes earned by people associated with the INSA for a total annual impact of \$29.04 million. The income paid INSA employees in this scenario was \$6.28 million. When spent, this income, as well as that paid to those in industries supporting INSA activities, had a total impact of \$11.26 million. From resort revenues, INSA ski areas directly paid an estimated \$1.03 million in business taxes, which, after the indirect and induced effects are taken into account, grew to \$1.62 million in total business tax effects. Finally, an estimated monthly average of 670 people were directly employed which indirectly caused or induced employment of the equivalent of another 281 people for a total employment impact of 951 workers.

**Table 3.3**  
**INSA Economic Impact: All INSA Sales Scenario**

<b>Indicator</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Output*	17.02	6.79	5.23	29.04
Personal Income*	6.28	2.72	2.26	11.26
Business Taxes*	1.03	.26	.32	1.62
Employment	670	154	127	951

\*Millions 2002 dollars

Since all economic impacts ultimately depend on output, Table 3.4 shows the effect of an increase in INSA output on output, employment, income, and business taxes in the four county region, regardless of scenario. Each additional one million dollars of output directly leads to \$0.37 million in personal income, \$0.06 million in business taxes and 39.4 jobs. After indirect and induced effects are taken into account, the effect of the initial output change of \$1.0 million increases output to \$1.71 million, income to \$0.66 million, business taxes to \$0.10 million and creates 56 equivalent jobs.

**Table 3.4**  
**INSA Output Multipliers**

<b>Indicator</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Output	1.00	.40	.31	1.71
Personal Income	.37	.16	.13	.66
Business Taxes	.06	.02	.02	.10
Employment	39.37	9.05	7.44	55.88

Finally, Table 3.5 shows the impact of changes in INSA output, employment, income or taxes on the four county region, again regardless of scenario. A one million change in output produces \$1.71 in total output; a \$1.0 million change in resort employee compensation leads to \$1.79 million in total personal income; a \$1.0 million change in business taxes produces \$1.57 million in total business taxes while each new INSA job ultimately results in a total of 1.42 equivalent regional jobs.

**Table 3.5  
INSA Impact Multipliers**

<b>Indicator</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Output	1.00	.40	.31	1.71
Personal Income	1.00	.43	.36	1.79
Business Taxes	1.00	.26	.31	1.57
Employment	1.00	.23	.19	1.42

### 3.3 Indirect Impacts by Industry

New spending not only carries direct impacts on the output, employment and income of a region but also indirect and induced impacts from industries affected by skiing. Ski areas require transportation, legal, accounting, construction, communication and computer services. Buildings and lifts require maintenance and protection and, ultimately, replacement. All these activities, as well as many more, represent the indirect impact of INSA resorts—that is, the economic activities undertaken to facilitate and support the production of ski industry goods and services.

Based on the second scenario where 79 percent of sales represents new spending, Table 3.6 shows the extent of indirect impacts of the INSA on various Inland Northwest NAICS subsectors, ranked by output, with related employment and income impacts, as well as the percentage distribution of these impacts.

In 2002, the indirect impact of INSA resorts on the four county output was \$5.36 million. Of this, \$0.91 million (17% of the total) went to the real estate industry, followed by \$0.58 million (11%) for professional, scientific, and technical services, and \$0.47 million (9%) for finance and insurance. The indirect impact of employee compensation paid by INSA resorts on the Inland Northwest was \$2.15 million. This increased professional, scientific, and technical services industry incomes by \$0.35 million (16% of the total), followed by administrative and support services with \$0.22 million (10%) and by transportation and warehousing with an increase of \$0.20 million (10%). Finally, the indirect impact on the four county employment was 122 equivalent jobs. This supported an additional 17 jobs in the professional, scientific, and technical services industry, followed by another 17 jobs in administrative and support services (both 14% of the

total) and 16 jobs (13%) in arts, entertainment, and recreation. Overall, the table indicates that the indirect impacts of the INSA are distributed across a broad array of industries.

**Table 3.6  
Indirect Impacts of the INSA in the Four County Region**

Industry	(\$)			Percent		
	Output	Income	Empl	Output	Inc	Empl
Real Estate	906,000	98,000	14.9	16.9	4.6	12.2
Prof, Scientific & Tech Services	584,000	346,000	17.4	10.9	16.1	14.3
Finance & Insurance	468,000	196,000	5.6	8.7	9.1	4.6
Information	459,000	173,000	6.6	8.6	8.1	5.4
Admin & Support	362,000	223,000	16.7	6.8	10.4	13.7
Transportation & Warehousing	291,000	204,000	7.2	5.4	9.5	5.9
Construction	270,000	155,000	7.1	5.0	7.2	5.8
Other State & Local	262,000	74,000	2.2	4.9	3.4	1.8
Other Services (e.g. Pub Adm)	251,000	91,000	6.6	4.7	4.2	5.4
Manufacturing	244,000	90,000	3.4	4.6	4.2	2.8
Wholesale Trade	219,000	125,000	4.2	4.1	5.8	3.5
Federal Electric Utilities	218,000	27,000	0.3	4.1	1.3	0.2
Mgmt of Companies	213,000	146,000	3.7	4.0	6.8	3.0
State & Local Elec. Utilities	160,000	18,000	0.4	3.0	0.8	0.3
Arts, Entertainment & Rec.	132,000	43,000	15.9	2.5	2.0	13.1
Retail Trade	102,000	62,000	3.7	1.9	2.9	3.0
Other Utilities	90,000	29,000	0.6	1.7	1.3	0.5
Accommodation & Food Svcs	74,000	37,000	3.6	1.4	1.7	2.9
Other	55,000	12,000	1.8	1.0	0.6	1.4
<b>Total</b>	<b>5,360,000</b>	<b>2,149,000</b>	<b>121.9</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

### 3.4 Induced Impacts by Industry

People receive incomes as a consequence of either direct or indirect employment in INSA ski areas. As this income is spent, regional output expands, employment increases to facilitate the spending and additional incomes are earned. In turn, this activity causes still further increases in output, employment, and income. For

example, more houses are built and sold because INSA workers purchase homes; food and drinking places hire additional employees because INSA workers purchase out-of-home meals. However, this induced impact, caused by the effects of spending incomes earned by some sort of INSA employment, does not continue forever. The income eventually “leaks” out of the Inland Northwest as people save, pay taxes, make out-of-region purchases or purchase goods and services produced in other places.

Increases in output, employment, and income caused by the spending of earnings received either directly from employment in INSA activities or indirectly from support of INSA activities, represent the induced impacts of the INSA. Based on the second scenario where 79 percent of sales represents new spending, Table 3.7 lists these impacts by NAICS subsector ranked by output, with related employment and income impacts as well as the percentage distribution of these impacts.

In 2002, the induced impact of the INSA on the output of the Inland Northwest was \$4.13 million. Of this, \$0.71 million (17% of the total) went for health care and social assistance, followed by \$0.50 million both for owner occupied dwellings and retail trade (both 12%). The induced impact of INSA ski areas on the income of the Inland Northwest was \$1.79 million. This increased the incomes of health care and social assistance personnel by \$0.49 million (27% of the total), retail trade by \$0.30 million (17%) and finance and insurance personnel by \$0.15 million (8%). Finally, the induced impact on employment was 100 equivalent jobs. This produced an additional 21 jobs (21% of the total) in health care and social assistance followed by 18 jobs (17%) in retail trade and 13 jobs (13%) in the accommodation and food services industry. Again, the table indicates that the induced impacts of the INSA are spread across a broad array of industries.

**Table 3.7  
Induced Impacts of the INSA in the Four County Region**

Industry	(\$)	(\$)	Empl	Percent		
	Output	Income		Output	Inc	Empl
Health Care & Social Asst	705,000	483,000	21.3	17.1	27.0	21.3
Owner Occupied Dwellings	498,000	0	0.0	12.0	0.0	0.0
Retail Trade	493,000	298,000	17.6	11.9	16.7	17.3
Finance & Insurance	402,000	148,000	5.0	9.7	8.3	5.0
Real Estate	259,000	30,000	4.6	6.3	1.7	4.6
Accommodation & Food Svcs	246,000	126,000	12.7	6.0	7.0	12.7
Wholesale Trade	234,000	133,000	4.5	5.7	7.4	4.5
Manufacturing	223,000	66,000	2.3	5.4	3.7	2.3
Other Services (e.g. Pub Adm)	216,000	125,000	10.2	5.2	7.0	10.2
Information	138,000	49,000	3.3	3.3	2.7	3.3
Prof, Scientific, & Tech Services	126,000	75,000	3.9	3.0	4.2	3.9
Transportation & Warehousing	119,000	65,000	2.5	2.9	3.6	2.5
Other State & Local	90,000	31,000	0.9	2.2	1.7	0.9
Admin & Support Services	73,000	44,000	3.4	1.8	2.5	3.4
Educational Services	72,000	44,000	3.1	1.7	2.5	3.1
Federal Electric Utilities	52,000	6,000	0.1	1.3	0.3	0.1
State, Local Elec. Utilities	38,000	4,000	0.1	0.9	0.2	0.1
Mgt of Companies	36,000	24,000	0.6	0.9	1.3	0.6
Other Utilities	35,000	11,000	0.2	0.8	0.6	0.2
Other	78,000	26,000	3.6	1.9	1.5	3.6
<b>Total</b>	<b>4,133,000</b>	<b>1,788,000</b>	<b>99.9</b>	<b>100.0</b>	<b>99.9</b>	<b>99.9</b>

### 3.5 Tax Impacts

Because of differing tax codes, the tax effects from INSA operations in Idaho and Washington are separated. Under the most plausible scenario of total output of \$13.45 million, the three INSA resorts in Idaho and the two in Washington paid an estimated \$0.81 million in direct business taxes annually, which increased to nearly \$1.28 million when total effects are considered. As Table 3.8 shows, nearly all these taxes were state and local sales and property taxes, accounting for 76 percent of the taxes paid in Idaho and 81 percent in Washington.

**Table 3.8  
Total Business Taxes Generated in the  
Four County Region(\$)**

Tax Type	Idaho	Washington
Federal	119,000	25,000
State & Local	769,000	256,000
Motor Vehicle License	18,000	2,000
Other Taxes	43,000	16,000
Property Taxes	295,000	72,000
Non-Taxes	28,000	9,000
Sales Tax	384,000	157,000
Severance Tax	1,000	--
<b>Total</b>	<b>888,000</b>	<b>281,000</b>

### 3.6 Summary

Table 3.9 summarizes the direct impact of INSA facilities under the three scenarios considered. Differences in the scenarios are based on the extent to which combined INSA sales represent new spending in the four counties. Estimates for the “New Visitors” scenario used 29 percent of sales while the “New Visitors + Retention” scenario used 79 percent of sales. The range in estimates of direct impacts from the lowest to the highest estimates for each indicator is about three and a half. That is, if only new visitors are considered, their direct impact is \$4.94 million. If all INSA sales are considered, the direct impact is \$17.02 million. The other indicators have similar interpretation. As previously indicated, the second scenario seems most reasonable because most, but not all, local skiers would leave the four county region to ski elsewhere if the INSA facilities did not exist.

**Table 3.9  
Direct Impacts of INSA Facilities by  
Scenario**

Indicator	Scenario		
	New Visitors	New Visitors + Retention	INSA Sales
Output*	4.94	13.45	17.02
Personal Income*	1.79	4.96	6.28
Business Taxes*	.30	.81	1.03
Employment	194	529	670

\*Millions 2002 dollars

Table 3.10 summarizes the total impact of INSA facilities on the four county region. Again the range of the impacts is about three and a half. When only new visitors are considered, regional output is estimated to increase by \$8.42 million, personal income by \$3.27 million, business taxes by \$.47 million and employment by 276 equivalent jobs. Under the most optimistic scenario where all INSA sales represent new spending, output would increase by \$29.04 million, personal income by \$11.26 million, business taxes by \$1.62 million and employment by 951 equivalent jobs. Under the most reasonable scenario, the existence of INSA facilities causes regional output to increase by \$22.94 million, personal income by \$8.90 million, business taxes by \$1.28 million and employment by 751 equivalent jobs.

**Table 3.10  
Total Impacts of INSA Facilities by Scenario**

Indicator	Scenario		
	New Visitors	New Visitors + Retention	INSA Sales
Output*	8.42	22.94	29.04
Personal Income*	3.27	8.90	11.26
Business Taxes*	.47	1.28	1.62
Employment	276	751	951

\*Millions 2002 dollars

## 4. Comparisons with Other Studies

The economic impact of ski facilities has been studied in a variety of contexts with the common finding that they create significant economic benefits in the region where they are located. Table 4.1 compares impact multipliers found for INSA with those estimated for the ski industry in Michigan, North Carolina and Vermont and for specific resorts in Michigan and Colorado (see references). These studies, undertaken in various years between 1976 and 2001, not only cover a wide range of locations, but also incorporated a variety of impact methodologies. Overall, the impact multipliers found for INSA are similar to those found in other studies.

**Table 4.1  
Ski Impact Multipliers**

Study	Output	Income	Empl
Michigan State	1.6	1.2	1.6
North Carolina State	1.8	-	-
Vermont State	1.9	1.9	1.4
Giants Ridge, MI	2.4	-	-
Crested Butte, CO	2.0	1.2	2.0
<b>INSA</b>	<b>1.7</b>	<b>1.8</b>	<b>1.4</b>

An especially complete study of the impact of the ski industry was undertaken by the state of Vermont in 1999 (University of Vermont, 1999). Table 4.2 compares results from this study with those found for INSA. For the most part, the impact multipliers are similar, with differences such as for output or employment explained by differences in state as opposed to regional effects.

**Table 4.2**  
**Output Multipliers: Vermont and INSA**

Indicator	Direct	Indirect	Induced	Total
<b>Vermont (1997)</b>				
Output	1.00	.39	.55	1.94
Personal Income	.35	.12	.19	.66
Business Taxes	.05	.02	.03	.10
Employment	32.10	4.50	8.20	44.80
<b>INSA (2005)</b>				
Output	1.00	.40	.31	1.71
Personal Income	.37	.16	.13	.66
Business Taxes	.06	.02	.02	.10
Employment	39.37	9.07	7.44	55.88

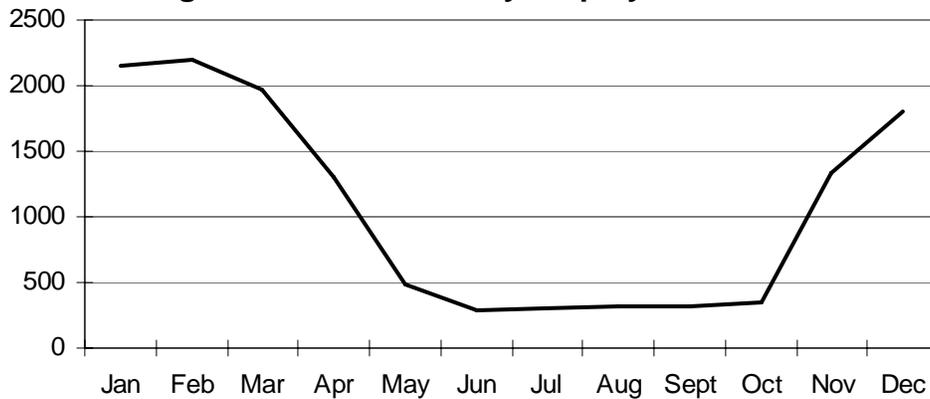
Other studies of the impact of the ski industry have looked at occupational and local, off-site spending effects. A study for the Oregon Labor Market Information System (Tauer, 2001) examined the occupations directly involved directly with skiing and snowboarding activities. As shown In Table 4.3, about 50 percent of the occupations are directly related to ski resort operations such as instructors, attendants and cashiers while the remaining largely involve support or administrative functions. The seasonal ebb and flow of employment in these occupations is shown in Figure 4.1

**Table 4.3  
Employment by Occupation  
from Oregon Ski Impact  
Study**

<b>Occupation</b>	<b>Share (%)</b>
Sports Instructors	15
Recreation Attendants	13
Food & Beverage	10
Cashiers	9
Transportation	8
Mechanics, Repairers	7
Counter and Rental Clerks	6
Protective Service Workers	5
Office Workers	5
Managers, Administrators	4
Fork Lift, Drivers	4
Janitors Cleaners	4
Other Professional	2
Salespersons, Retail	1
All Other	7
<b>Total</b>	<b>100</b>

Source: Tauer

**Figure 4.1  
Oregon Ski Areas Monthly Employment Levels**



Source: Tauer

Results of two statewide off-site spending surveys are reported in Table 4.4. Both studies, for Michigan by Stynes and Sun (2001) and for North Carolina by Millsaps and Groothuis (2003), found that skiers spent that greatest proportion of their off-site expenditures on restaurants/bars, lodging, other retail and transportation. While a survey of this type is beyond the scope of this study, these findings provide further indication of the economic impact of ski resorts on their regional economies.

**Table 4.4  
Shares of Off-Site Ski  
Expenditures (%)**

Item	North	
	Carolina	Michigan
Lodging	33	28
Restaurant/Bar	18	24
Gasoline/Oil	17	25
Other	24	11
Grocery	8	12
<b>Total</b>	<b>100</b>	<b>100</b>

## 5. Concluding Thoughts

INSA members should consider more elaborate surveys of their customers, not only to estimate their impact on local economic activities but also for marketing purposes. Detailed information is not currently available to determine the residence or demographic characteristics of skiers or the nature and extent of off-site activities and spending. This information would be useful for more elaborate impact studies as well as for identifying unmet skier needs and potential opportunities for expanded resort activities.

## 6. References

- Deming, Kenneth A., McGinty, Robert L. and Norris, Arthur J. (1976). *The Socio-Economic Impact of the Crested Butte Resort on the County of Gunnison in the State of Colorado*. Western State College of Colorado. Gunnison, CO
- Gerritson, Stephen L. (1988). *Economic Impacts of Giants Ridge*. Economics Research Associates. New York, NY
- [MIG, 2002] Minnesota IMPLAN Group (2002). *IMPLAN Professional, Version 2.0*. Stillwater, MN. <http://www.implan.com>.
- [MIG, 2000] Minnesota IMPLAN Group (2000). *IMPLAN Professional, Version 2.0. User's Guide. Analysis Guide. Data Guide*. Stillwater, MN. <http://www.implan.com>.
- [MIG, 2004] Minnesota IMPLAN Group (2004). "2001 IMPLAN Data Sectoring Scheme – Replacement for Appendix A in IMPLAN User's Manual."
- Millsaps, Steven W., and Groothuis, Peter A. (2003). *The Economic Impact of the North Carolina Ski Areas on the Economy of North Carolina 2002-03 Season*. Report Prepared for North Carolina Ski Areas Association, Appalachian State University. Boone, NC
- [NSAA Econ Analysis, 2004] National Ski Areas Association and RRC Associates (2004), 2003/2004 *Economic Analysis of United States Ski Areas*. Thirty-sixth Edition. Lakewood, CO
- [NSAA, 2002] National Ski Areas Association and RRC Associates, (2002) *Kottke National End of Season Survey*. Twenty-third Edition. Lakewood, CO
- [NSAA, 2004] National Ski Areas Association and RRC Associates, (2004) *Kottke National End of Season Survey*. Twenty-fifth Edition. Lakewood, CO
- Stynes, Daniel J., and Sun, YaYen. (2001). *Economic Impacts of Michigan Downhill Skiers and Snowboarders, 2000-01*. Michigan State University. East Lansing, MI
- Tauer, Guy. (2001). Oregon's Snowsport Industry. Oregon Labor Market Information System. Salem, OR
- University of Vermont (1999). *The Impact of the Tourism Sector on the Vermont Economy: The Input-Output Model*. University of Vermont. Burlington, VT [http://www.uvm.edu/~snrvtdc/publications/tourism\\_impact.pdf](http://www.uvm.edu/~snrvtdc/publications/tourism_impact.pdf).
- U.S. Census Bureau. (2004). 2002 *Economic Census. Arts, Entertainment, & Recreation—Industry Series*, "Amusement, Gambling & Recreation Industries," EC02-711-03, <http://www.census.gov/prod/ec02/ec0271i03.pdf>.