

# *A Study of the Relationships of Tourism and Potential Impacts on Montana Counties*

## *Phase One*

Prepared by:

Neal Christensen  
Institute for Tourism and Recreation Research  
The University of Montana  
Missoula, MT 59812  
(406)243-5686

**Please Note:** In reviewing this report it is important that the results are interpreted in the correct context. The study represented here made no attempt to test for cause-effect relationships between tourism and factors of quality of life. Relationships were tested and identified, but the underlying causes are still unproven and open to interpretation. In addition, this report is intended to inform committee members of the findings of analysis conducted to meet the specific needs of that committee. It does not attempt to fully inform the reader of all of the background and methodology of the study; some prior knowledge of the process is assumed.

## Community Tourism Impact Study

**Background:** The Institute for Tourism and Recreation Research along with the Montana Tourism Coalition developed this study to evaluate tourism's relation to local area impacts. Leaders in tourism dominant communities have expressed concerns about their abilities to meet demands placed on infrastructure and supportive services. This study attempted to address those concerns as well as concerns about impacts of tourism to individual residents' quality of life. It is recognized that these issues are complex and that a modest study of this kind cannot adequately answer these questions. It is possible, however, to move toward an understanding of tourism's effect on individuals and communities through this process.

**Study Objective:** This study was undertaken to assess the relationships between tourism and individual residents and communities in Montana. The study was divided into two separate, concurrent phases. Phase One of the study involved gathering existing indicators of individual quality of life and community livability and correlating those indicators with levels of tourism in each of the 56 Montana counties. Phase Two of the study was designed to assess tourism impacts to communities by collecting opinions and concerns from community leaders in 15 Montana cities and towns having varying degrees of tourism. This report presents the results of phase one of the impact study.

The first phase was conducted at the county level. The analysis included the formulation of an index of per-capita tourism development and the correlation of that index to census-type indicators of county living conditions.

**The Index:** The variables that were incorporated into the tourism development index reflect various aspects of tourism including: nonresident travel and spending patterns, resident travel patterns, tourism economic indicators, and the supply of recreation facilities, services and infrastructure. The variables included in the index were chosen because they were available for all of the counties, they were measured recently, and they reflected some aspect of travel demand or supply. See Appendix A for a description of the process used to calculate the index.

**The Correlations:** The correlations table lists the results of the tests that were conducted to determine if relationships exist between the relative level of tourism and various aspects of individual quality of life and community livability. The table reports two numbers for each indicator variable; the correlation coefficient and the significance level. The correlation table includes an asterisk (\*) next to each significance level of 0.05 or less. The table also includes a pound sign (#) next to those correlations significant between 0.10 and 0.05 levels. Appendix A contains a section on interpreting the results of the correlation analysis.

It is important to note that correlation analysis does not test for cause-effect in relationships between variables. As an example, there was a significant positive correlation found between levels of tourism and the 5-year change in population. From this analysis it cannot be determined if increases in tourism cause increases in population, or if increases in population cause increases in tourism, or if increases in tourism and increases in population are due to a third factor.

Caution should be taken when interpreting the results of the correlation analyses not to imply cause and effect.

**The Results:** The correlations table is divided into sections dealing with various aspects of individuals' quality of life and community livability. Each category contains several indicator variables that were available to address that aspect.

**Demographics:** Tourism-dependent communities, regardless of their size, are growing at a higher rate than non-tourism communities. Also significant in this section is education attainment. The residents of tourism areas tend to be more educated than in non-tourism communities. Residents of tourism areas are also younger on average than residents of nontourism areas.

**Residence:** In general, tourism areas have a lower percentage of native Montanans as residents. Conversely, the residents are more likely to have recently moved to the area and to Montana. While people from outside of Montana who move to Montana are more likely to choose tourism areas, Montana residents who relocate are not more likely to choose tourism areas over non-tourism areas.

**Family:** There is a positive correlation between tourism and marriage rates. However, there is also a slight positive correlation with divorce rates. Despite a younger population, and a higher marriage rate, tourism areas are no more likely to have a higher percentage of children or children in school.

**Housing:** Tourism areas do not having greater housing shortages than other areas. However, residents of tourism areas do pay a greater proportion of their income to rent than in other areas. Tourism areas also tend to have newer housing structures which may indicate recent growth.

**Economy, Jobs:** Tourism tends to occur in nonagricultural areas. Proportionately, a greater number of jobs in construction, manufacturing, retail and nonrecreational service are supported in tourism areas. However, there are no indications that income, unemployment or poverty have any relation to the level of tourism.

**Taxes:** All correlations in this study between tourism and taxes are negative. It appears that areas with higher levels of tourism tend to have lower tax burdens. This is especially apparent when looking at property tax rates which have the most significant negative correlation with tourism.

**Crime, Emergency Services:** There is no significant relation between these indicators and relative levels of tourism. It is not known from the available data if emergency service responses suffer seasonally during periods of high tourism.

**Health:** There is only one significant relation to per capita tourism. The relation is found in the number of physicians in the community, with tourism areas supporting more physicians per resident.

The following summary interpretation of correlations with the RTD Index are offered as a point of discussion for further refinement of the overall study.

*Tourism dependent areas are growing at a faster rate than non-tourism areas. The residents of the tourism areas tend to be more educated and younger than in other areas. They are less likely to have been born in Montana, less likely to have lived in the same county five years ago and more likely to have moved to Montana in the last five years. Viewed another way, long-time residents of Montana who relocated within state in the past five years were no more likely to choose tourism dependent areas than non-tourism areas. But if the resident relocated from out-of-state they were more likely to choose a tourism dependent area. Residents of tourism areas must pay a greater portion of their income to cover housing rental expenses. The housing units in tourism areas tend to be newer than in other areas. Tourism counties are less likely to be agricultural areas, but they are more likely to support jobs in construction, manufacturing, retail and services. There are indications that tax burdens are not as great in tourism counties as in non-tourism counties, and specifically, property taxes tend to be lower in these areas. Crime rates are not related to the level of tourism nor are the numbers of emergency service workers. finally, health care has only a minor correlation with tourism. Tourism areas are able to support more physicians per capita than nontourism areas.*

The interpretation of results related to individuals as offered above does not imply actual cause-effect relations with tourism, but rather is offered as a possible interpretation of the correlations that were identified. This study could benefit from further analysis in all of these areas. In particular, there is a lack of data for community-level impacts such as infrastructure, traffic, emergency services and other public services. For example, there is no indication of emergency response times or ability to deliver needed assistance. Tax burden is an interesting, yet complex issue which needs more in-depth study to quantify that burden and assess its relation to tourism. The above analysis was conducted using data measured on a yearly basis. Because of that restriction, seasonal peak demands and impacts in tourism dependant communities may be masked by the lack of activity in the off seasons.

## Appendix A

**The Tourism Development Index:** The following equations show how the tourism index was calculated. All of the variables were first converted to a standardized scale of 1 to 100 for comparability. All variables were divided by county population before being entered into the equation. As the following equations indicate, each variable was given an importance weight to reflect its contribution to the index. The weights were derived for each equation using a principal components factor analysis which quantifies the relative contribution of each variable in explaining the overall variance in the factor (the factor in this case was the level of community-based tourism). The principal components analysis identified three distinct factors from the pool of tourism-related variables. One of the factors appeared to be the strongest measure of tourism - specifically community-based nonresident tourism. Only the variables loading on that factor were subsequently included in the Tourism Development Index. The factor score coefficients were used as the weights in constructing the composite index from each variable. The results of the equations were standardized to a base index score of 100. This was done by assigning the county having the highest level of tourism a score of 100 and all other counties a proportion of that score. To do this, each observation was divided by the highest observation of the score and then multiplied by 100.

**Relative Tourism Development Index Equation** = (Accommodations Tax \* 0.23988) + (Nonresident Overnight Stays \* 0.31715) + (Nonresident Expenditures \* 0.31856) + (Hotel Rooms \* 0.23457)

The Tourism Development Index Rankings table that follows lists the 56 counties in rank order along with their respective index scores.

**The Correlation Analysis:** The first number in the correlations table is the correlation coefficient which is a number in the range of -1 to +1. The second is the significance level, which is a number between 0 and 1. Correlation coefficients close to 1 or -1 indicate strong relationships between the two variables. Furthermore, the closer the significance level is to 0, the more confident one can be that the relationship detected is not due to random chance. Therefore, two perfectly correlated variables would have a correlation coefficient of 1.0000 and a significance level of 0.000. In practice it is generally acceptable to report relationships that have a significance level of 0.050 or less. However, because of the small sample size in this study, it may be acceptable to relax that criteria and accept relationships as significant if they achieve a level of 0.100 or less.

## **Appendix B**

### **Some Observations from the Results of Phase II:**

The committee received seven responses out of the 14 communities polled. The representatives of Kalispell provided the most comprehensive and balanced information regarding tourism impacts. While they were supportive of tourism, they provided evidence that their protective services are burdened by tourism, or at least by nonresidents of the community. A large traffic problem was identified in Kalispell. Officials stated that they do not have the financial ability to adequately address solutions to their congestion, but they are taking positive steps in that direction with available funds.

The city of Bozeman submitted similar concerns as those of Kalispell, but they were not as well documented. The city of Billings did not identify any major concerns and indicated that their economy is diverse and their infrastructure is able to handle the present visitors. The airport officials at Billings felt that tourism was very important to them. The community of Wibaux was supportive of tourism, felt that they presently come out ahead on impacts, and felt they had great potential for an expanded role in tourism. The community of Polson submitted several service delivery and infrastructure concerns in their response. However, no effort was made by them to separate local impacts from tourism's contribution to the increased summer problems.

Many of the concerns submitted by the respondents, such as traffic problems and increased summer-time use could be attributable to tourism and other factors. The direct relationship to tourism is hard to document. An official in the Missoula Street Department pointed out that they have been adversely affected by ever increasing traffic. However, that increase is due to growth in the community and growth in the surrounding areas as well as growth in tourism activities.

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## Summary of Findings

### **Phase I:**

Tourism dependent areas are growing at a faster rate than non-tourism areas. The new residents of those areas are less likely to have been born in Montana, less likely to have lived in the same county five years ago and more likely to have moved to Montana in the last five years. Tourism development tends to be concentrated in more urban areas.

The residents of the tourism areas tend to be more educated and younger than in other areas. Residents of tourism areas must pay a greater portion of their income to cover housing rental expenses. The housing units in tourism areas tend to be newer than in other areas. There are indications that tax burdens are not as great in tourism counties as in non-tourism counties, and specifically, property taxes tend to be lower in these areas.

Tourism counties are less like to be agricultural areas, but they are more likely to support jobs in construction, manufacturing, retail and services.

Crime rates are not related to the level of tourism nor are the numbers of emergency service workers. Finally, health care has only a minor correlation with tourism. Tourism areas are able to support more physicians per capita than nontourism areas.

### **Phase II:**

The committee received seven responses out of the 14 communities polled. The representatives of Kalispell provided the most comprehensive and balanced information regarding tourism impacts. While they were supportive of tourism, they provided evidence that their protective services are burdened by tourism, or at least by nonresidents of the community. A large traffic problem was identified in Kalispell. Officials stated that they do not have the financial ability to adequately address solutions to their congestion, but they are taking positive steps in that direction with available funds.

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