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# The Economic Effects of Ski Resorts on Communities in the State of Maine

Rachel Freierman '09

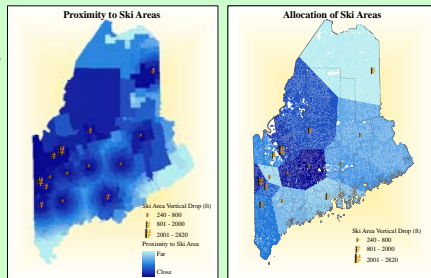
Colby College Department of Environmental Studies

## Introduction

Skiing and snowboarding is a fairly expensive activity for participant and one in which the industry as a whole makes handsome profits. In the 2005/06 season, resorts in the Northeast reported an average gross revenue of \$18.5 million. (NSAA) With the current weather phenomenon of El Nino, however, resorts in New England especially, have been suffering economically. The gross revenue in New England in the '05/'06 season was down 4% from the previous year, likely due to the fact the total snowfall declined by 16%. (NSAA) Much of this loss in revenue came during the Christmas to New Years vacation period. In the 2007 season, most mountains were less than half-opened during this peak week and the number of skiers and riders was especially low. With such a large decrease in profits, it is likely that many people will soon be affected (if they have not already been), including local employees. This project, therefore, seeks to analyze the impact that the resorts have on the local economies in order to determine the potential problems the changing snowfall patterns could have on locals' well-being. It is hypothesized that there will be a strong correlation between the proximity of a community to a resort and the relative economic prosperity of that community; meaning that the ski industry is a pivotal part of their income and livelihood.

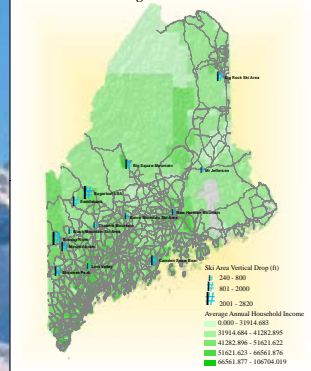
## Methods

This project uses GIS to map the fourteen ski areas in the state of Maine and the economies of the surrounding census blocks. The main relationship analyzed is between the proximity of a census block to a ski area and the relative economic success of that census block. The measures of economic success are: average annual household income and the percentage of the population that is living in poverty, as determined from the US Census Bureau data. Other comparisons are made between the ski areas and the effective communities based on the size of the ski area – measured by their vertical drop. An initial map was created (below, left), which shows how far away a census block is from any ski area as a relative distance. The distance is computed in a Euclidean format that is presented in a relative index. A lengthy attempt was made to calculate the distance using the road coverage and speed limit as a measure of driving time from a census block to a ski area, but due to time constraints and feasibility issues, this more accurate and complex model was abandoned. A second map was created (below, right), showing the allocation of ski areas from any census block – essentially, which ski area is the closest. With this statewide data, more specific and individual relationships were made by looking at the distance as it correlates to the size of ski areas, which were divided up into three categories of small, medium, and large. The categories were formed on the basis of vertical drop on the mountain as there is typically a direct relationship between vertical drop and other size aspects such as the number of runs and lifts. Both average annual household income and the percent of households in poverty were graphed in relationship to the relative distance for the entire state. Then Sugarloaf, Big Rock Ski Area, and Lost Valley were selected (one to represent each of the three size categories and to provide data from a wider range of state locals) and the economic factors for the census blocks allocated to these mountains were mapped against the distance.

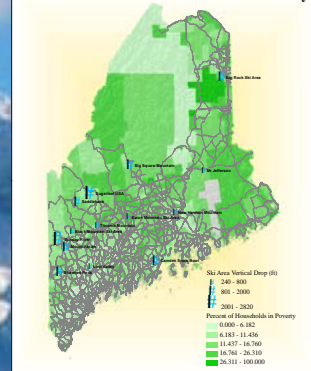


## Results

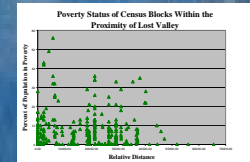
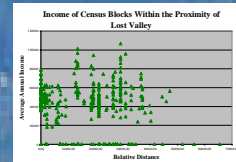
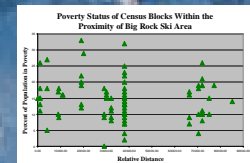
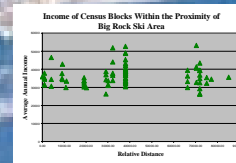
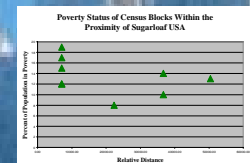
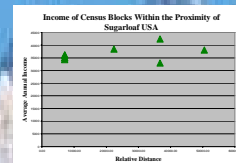
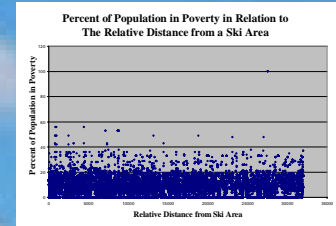
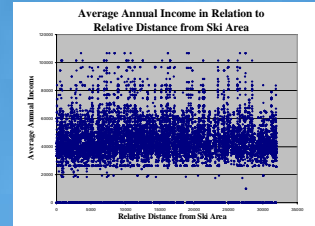
Maine Census: Average Annual Household Income



Maine Census: Percent of Households in Poverty



## Statistical Analysis



## Analysis

None of the graphs above produced a relationship between the distance from the ski resort and either the income level or the percent of population in poverty. Both of the graphs that display the data from the whole state show a very constant level of income and poverty across all distances. The individual graphs also do not show a clear correlation between the distance and economic well being. There are some possible sources of error to explain why the hypothesis was proved false. The first is that the Euclidian distance analysis that was done is not the most accurate tool for measuring distance traveled. Because it takes the distance as a straight line from one point to another, it does not incorporate the fact that most roads in Maine do not go in straight lines and that it would take longer to get somewhere in reality. It also does not take into account that there are varying speed limits on roads that will affect the rate of travel. Secondly, only two forms of economic criteria were looked at, which is likely not a broad enough field to make an accurate conclusion. There are many potential measurements for economic success, and having a greater range of these determinants would prove more accurate. Finally, the allocation method used was also not as accurate as possible, because like the Euclidian distance analysis, it operates on a purely geometric scheme where it simply draws a line across the land in the middle of two ski areas as opposed to calculating the middle distance of travel on the roads. A future attempt to reevaluate this issue would certainly take into account the complications that the distances posed and would incorporate the non-Euclidian analysis. Additionally, the second attempt would make try to create relationships using more variables of economic success in the hopes of better answering the questions of how greatly, if at all, ski areas effect local economies.

## Works Cited & Acknowledgements

National Ski Areas Association (NSAA). 2005/06 Ski Resort Industry Research Compendium. RRC Associates, Inc. 2006.  
Data from: US Census Bureau, New England Ski Resorts by SkiTown.com, Maine Geographic Information System  
Pictures: Title Picture – Roger Medlin, 2003; <http://www.oregonicons.com/elkhormountainssunrise.jpg>, Roger Medlin 2003  
Results Picture – Zwieselalm sight; Results: <http://auto.pge.org/2003-dachstein-west/zwieselalm-ausblick.jpg>  
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