



Centre Mondial d'Excellence des Destinations
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Impacts of climate change on the Québec ski industry

Summary of a study by the Ouranos Consortium (June 2006)

www.ouranos.ca/doc/produit_f.html

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OURANOS CONSORTIUM

CONSORTIUM ON REGIONAL CLIMATOLOGY AND ADAPTATION TO CLIMATE CHANGE

The Ouranos Consortium pools the expertise and disciplines of numerous researchers in order to advance the understanding of the issues and the associated requirements for adaptation resulting from climate change on the scale of the North American continent.

Ouranos is international in its scope, with a team including more than one hundred scientists and specialists. The partnerships founded by Ouranos add contributions from over 150 academic and institutional researchers and the Institut national de la recherche scientifique (INRS).

CONTEXT OF THE STUDY

Several scientific studies, all with relatively high levels of certainty, show that climate changes and their variability due to the increasing atmospheric concentrations of greenhouse gases will manifest themselves in the future.

These climate changes will have significant impacts on several economic sectors, including those of the tourism and recreation industries, which will call for the implementation of a variety of adaptation measures.



THE SKI INDUSTRY IN QUÉBEC

Currently, there are 84 ski centers in Southern Québec. Of these, 15 represent 70 % of the market. Another 12 have focussed on clients from outside of Québec, mainly central USA, but they face stiff competition from ski centers both on the East and West coasts of North America.

Directly dependant on the climate, the Québec ski industry will more than likely be affected by the climate change phenomenon. The ski season may likely be affected by milder winters with important economic losses as a result.
What are these impacts ?

METHODOLOGY

In order to undertake the impacts and adaptation studies, researchers have developed methodology elements and have tested these in 4 workshops in which industry stakeholders participated.

These models calculate daily climatic parameters used for our analysis

- Minimum and maximum temperatures
- Precipitations (snow and rain)
- Atmospheric humidity
- Wind velocity

Data were calculated based on data collected during the 1961-1990 control period. They enable a calibration of the models for the same period. This calibration is then extrapolated and applied to future data.

RESULTS OF THE STUDY

The impacts of and adaptations to climate change of the ski industry in Southern Québec show that future climate change and variability will have significant negative impacts.

The impacts of climate change on the length of the ski season and on snow conditions will vary according to the region, the future time period involved and the climate scenario used.

According to the climate scenarios used, there will very likely be important changes in a variety of key climate variables and parameters, mainly temperature and precipitation, which will have negative impacts on the ski industry and associated industries, leading to significant losses in revenues.

RESULTS OF THE STUDY (cont.)

There will be a drastic reduction in the length of the ski season in the future, more so for the more southern regions of Québec.

The windows of opportunity for gaining revenues, in particular with respect to tourists coming from outside of Québec (United States, Ontario, Europe), are:

- Thanksgiving in the United States
- Christmas holidays
- March break
- Easter weekend

In fact, most ski stations plan their season and their profitability by hoping to achieve at least two-thirds of their revenues during these critical periods.

RESULTS OF THE STUDY (cont.)

Snow making costs are increasing as well as the cost for electricity and property taxes. To this, must be added equipment cost amortization over 7 years which, in reality is more so over a period of 25 to 30 years.

The financial means to make enough snow, the capacity to secure water to make the snow, the necessity of diversifying activities during the summer and the importance of regularly replacing infrastructures and equipment are all essential parts of an investment strategy.



CLOSING REMARKS

We know that future climatic changes will have a definite impact on a number of economic sectors, not to mention ecological sectors.

We must be on the look-out for new research and new technologies for the purpose of better preventing negative impacts.

However, managing climatic changes is not yet on the agenda of public organizations.