

How Climate Warming Affects Juneau, Alaska

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Juneau Alaska

Introduction

With all the recent controversy over the issue of global climate change, it has been a growing concern in the town of Juneau, AK, what effect this will have on the community. As home to one of Southeast Alaska's most visited and known glaciers, the Mendenhall, Juneau residents certainly have a just cause to be worried about ice and snow disappearing off the mountain sides and the glacier's mass. We founded our project on this concern. We attempted to determine how the changing temperature and increasing rainfall in the immediate Juneau area has affected and is presently affecting the glacier area and recession of the glacier itself. We also were interested in the hypothetical situation that conditions continue to escalate, and how much ice will be lost in the next two decades if it does.

Work Site

The area in concern is primarily the Mendenhall Valley watershed, all the bodies of water it contains were tested in some way to establish the impact of the shifting climate on them and the changes in the watershed resulting from these impacts.

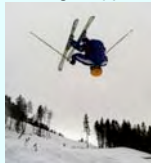
Mendenhall Glacier Visitor Center



The Mendenhall Valley Watershed consists of 6 major streams and rivers that flow from or around the Mendenhall Glacier itself. The Nugget, Jordan, Steep, Duck, and Montana creeks all flow down into the watershed while the Mendenhall River drains from the Mendenhall Lake itself, fed by the melting of the Glacier before getting additional water from groundwater systems and some branches of the creeks named above that join it.

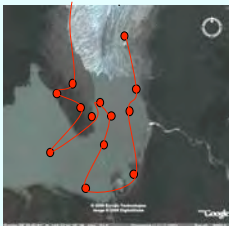
Procedure

During the winter time, when Mendenhall Lake was completely frozen over, we skied along the edge of the glacier, making a track line and marking waypoints.



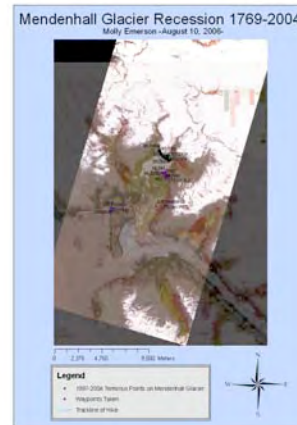
Tyler marking waypoints on our track

Back at the lab, we downloaded the waypoints and track onto the computer so we could have a precise representation to where the edge and moraines of the glacier were now at present. Then we measured the distance from the moraines of previous years to our waypoints.



As you can see, the accuracy of our points was taken into account very seriously.

Results



Mendenhall Glacier Recession 1769-2004

Moraine Dates	Distance (m)	Distance (m) per Year
2004	1769	4279
2004	1849	4668
2004	1863	3773
2004	1786	3934
2004	1833	3571
2004	1832	3826
2004	1835	3953
2004	1865	3713
2004	1886	4010
2004	1899	3745
2004	1908	3748
2004	1885	3372
2004	1916	3476
2004	1905	3601
2004	1910	2770
2004	1909	3480
2004	1820	4199
2004	1942	1706
2004	1949	1262
2004	1962	927
Average Rate of Recession:		28.03569753

Conclusions

"The glacier is receding at an unsafe speed."

-Chamillionaire

"We better change our ways."

- Snoop Doggie Dog

"SNAP YO FINGAS."

-Lil' Jon & E-40

Juneau will be flooded in little more than 1 week.

Literature cited

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Acknowledgments

We thank you all.

For further information

WWW.MYSPACE.COM

