## 2008 Repeat Photographs of Darwin and Dana Glaciers, Sierra Nevada, California Hassan Basagic

October 2008

I collected repeat photographs of two Sierra Nevada glaciers in September, 2008 to maintain the photographic record of glacier change. This brief report contains the repeat photographs and observations of Darwin and Dana glaciers.

Darwin Glacier is located on the north side of Mount Darwin in Kings Canyon National Park. I photographed Darwin Glacier on September 5, 2008. The location of the image was the same location as G.K. Gilbert's 1908 photograph. Darwin Glacier lost area and mass when compared to 2004 photographs. The glacier had very little snow remaining from the past winter. A bergshrund was present on both lobes of the glacier. A large amount of rock debris was observed on the base of the glacier. One pile of debris, located at the middle of the glacier terminus was several meters high. Several measurements were made along the glacier perimeter with a GPS unit. These points confirmed that the glacier is smaller along the western boundary compared to 2004.

Dana Glacier is located on the north side of Mount Dana in the Inyo National Forest. I photographed the Dana Glacier on September 11, 2008. The location of the image was same as I.C. Russell photo in 1883. Dana Glacier lost area when compared to 2004. The glacier boundary had receded along the western boundary. Ice and snow did not reach the top of the couloir. A bergshrund was observed in the upper portion of the glacier and where the couloir joins the glacier. Several crevasses were observed below the bergshrund. A small moraine was observed at the glacier terminus, which was not observed in 2004.

## **Darwin Glacier**

Darwin Glacier was photographed by G.K. Gilbert on August 14, 1908 (top). The glacier lost 54% of the original area by August 14, 2004 (middle, H. Basagic). The glacier has continued to shrink as observed on September 5, 2008 (bottom, H. Basagic).







## Dana Glacier

Dana Glacier was

photographed by I.C. Russell in August, 1883 (top). The glacier had lost 64% of the original area by 2003 (Basagic, 2008). This is apparent in the photograph taken on September 8, 2004 (middle, H. Basagic). The glacier has continued to shrink as observed on September 11, 2008 (bottom, H. Basagic).







contact:

Hassan Basagic Portland State University basagic@pdx.edu