

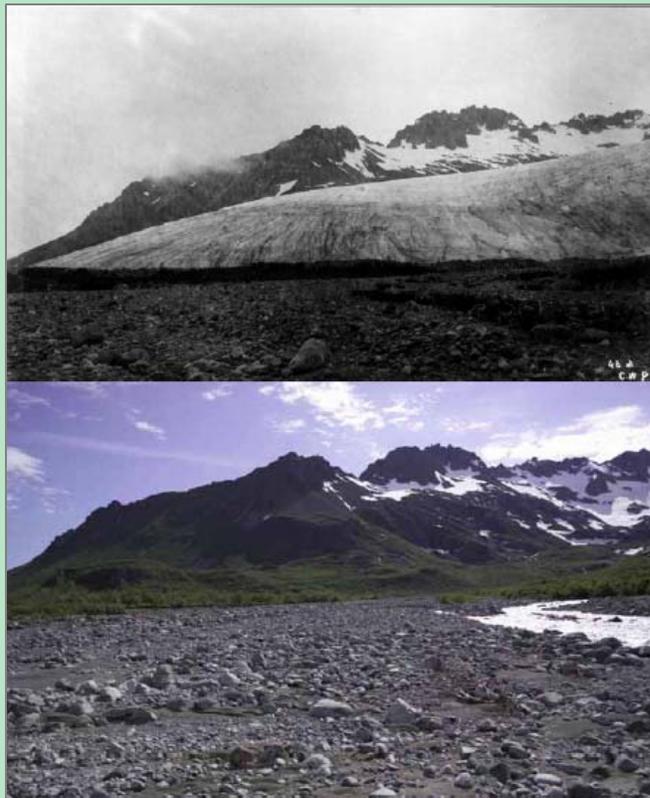
Landscape Processes-repeat photography

Vital Signs Monitoring- Southwest Alaska Network



Importance / Issues

Repeat photography is the art of locating the actual site of an old photograph, duplicating the position of the original camera and taking a repeat image of the same scene. It is a useful technique for comparing landscape changes occurring during a human lifetime and in analyzing long-term trends. Old photographs create much visitor interest and repeat photography provides an effective way of communicating and demonstrating how natural processes are operating in Alaska's National Parks.



Unnamed glacier south of Cape Douglas in KATM as seen in 1895 (C. Purington) and 2005 (Jorgenson). Purington's photograph shows the glacier's terminus at or near its maximal extent following the Little Ice Age. By 2005, it had retreated out of the field of view.

Repeat Photo Database

A project was initiated in 2003 with ABR, Inc to assess landscape changes in the Southwest Alaska Network (SWAN) through the use of repeat photography. A total of 1,076 historical photographs dating as far back as 1895 have been acquired for SWAN parks. A digital archive structure and *ThumbsPlus*-Access database have been developed to compile information about the photographs and prioritize them for repeat photography. The photographs are stored as high-resolution images for archiving and research, and low-resolution images for rapid review and broader distribution. The database allows the user to easily sort and view photographs by the desired data fields. During 2004–2005, a total of 214 photographs were repeated in three SWAN units by ABR and NPS personnel: 59 in Lake Clark; 136 in Katmai, and 19 in Aniakchak.

Status and Trends

In comparing the old and recent photographs, it is evident that a variety of changes associated with vegetation succession and geomorphic processes have occurred within the parks. Volcanism in Katmai and Aniakchak has created extensive barren landscapes that for the most part have been slowly colonized except in favorable microsites. Most glaciers have shown dramatic retreat since the early 1900s, with newly exposed surfaces becoming rapidly vegetated by tall shrubs and trees at low elevations but remaining sparsely vegetated at higher elevations. Expansion of trees and shrubs was observed in western Katmai, and altitudinal increase in treeline was observed at many locations in Lake Clark and Katmai.

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