Repeat Photography of Historical U.S. Geological Survey Expedition Photographs in Gates of the Arctic National Park and Preserve, Alaska

Project Overview

PARK SERVIC

During summer 2018 the National Park Service began a project with the objectives of using repeat photography techniques to document changes in the physical, biological, and cultural landscape of Gates of the Arctic National Park and Preserve (GAAR), Alaska and to better understand the history of geologic exploration of the park and surrounding area. It is critical for effective park management to understand how the natural resources of GAAR have changed during the past century and how the ecosystems and landscape of the park are responding to stressors such as climate change and human sitation and development. Repeat photography was selected as the investigation method for this project because it is an efficient tool for documenting andscape changes and communicating the complex effects of climate change to diverse audiences including park visitors, resource managers, and

Study Area

GAAR, the second largest and least visited National Park in the U.S., is a remote, roadless wilderness park located above the Arctic Circle in the Brooks Range in Alaska. The isolated nature and lack of infrastructure present significant challenges for studying and managing park resources. Walker Lake was selected as the focus for the 2018 field season because of the oncentration of high quality historical photos, access to the area by float plane from Bettles AK, and the fact that Walker Lake serves as a starting point for many Kobuk River float trips and accordingly is one of the most visited locations in the park. Walker Lake is almost 14 miles long and averages more than 1 mile wide, with elevations ranging from 600 feet at the lake to over 4,000 feet on many of the surrounding peaks. The lake was designated a National Natural Landmark in April 1968. The Walker Lake Natural Landmark Brief describes the significance of the area as:

This lake provides a striking example of the geological and biological relationships of a mountain lake at the northern limit of forest growth on the south slope of the Brooks Range. A full range of ecological communities from the dense white spruce forest of its shores to the barren talus slopes 2,000 feet above the lake document the rapid biological change in a markedly compressed linear distance. Some of the dominant habitat forms are open spruce forest, tall shrub, dry tundra, bluffs-slides outcrops, and standing waters. Other types presented in small amounts include low shrub, tussock-heath tundra, sedge-grass marsh, and flowing waters. Animal life here is well representative of that of northern Alaska (National Park Service, 2010)

Photo Pair 2

August 12, 1901 - W.C. Mendenhall

July 11, 2018 - R.D. Karpilo Jr.

USGS Expeditions

The U.S. Geological Survey (USGS) conducted numerous expeditions and surveys in Alaska during the past 125 years. The authors evaluated several USGS expeditions in the GAAR area decided to focus on the trips by USGS geologists Walter C. Mendenhall in 1901 and Arthur T. Fernald in 1952 because they both made high-quality photographs during their fieldwork and the dates of the expeditions provide nicely spaced snapshots of GAAR resources 117 and 66 years ago respectively.

Mendenhall's 1901 reconnaissance expedition "was carried out in pursuance of a plan which has been followed for some years by the United States Geological Survey in the topographic and geologic exploration of the little-known parts of Alaska and in the collection of such information as will be of value not only to the scientific world, but to the prospector, the miner, and the trader (Mendenhall, 1902)." The expedition also investigated the known and probable locations of gold and other economically desirable minerals, made observations about the distribution of fish, game, and plants (including the collection of numerous botanical specimens), collected meteorological data, and provided notes about the local native populations they encountered. The field party was led by Mendenhall (geologist) and the topographic work was conducted by Dewitt L. Reaburn (topographer), camp hands and assistan

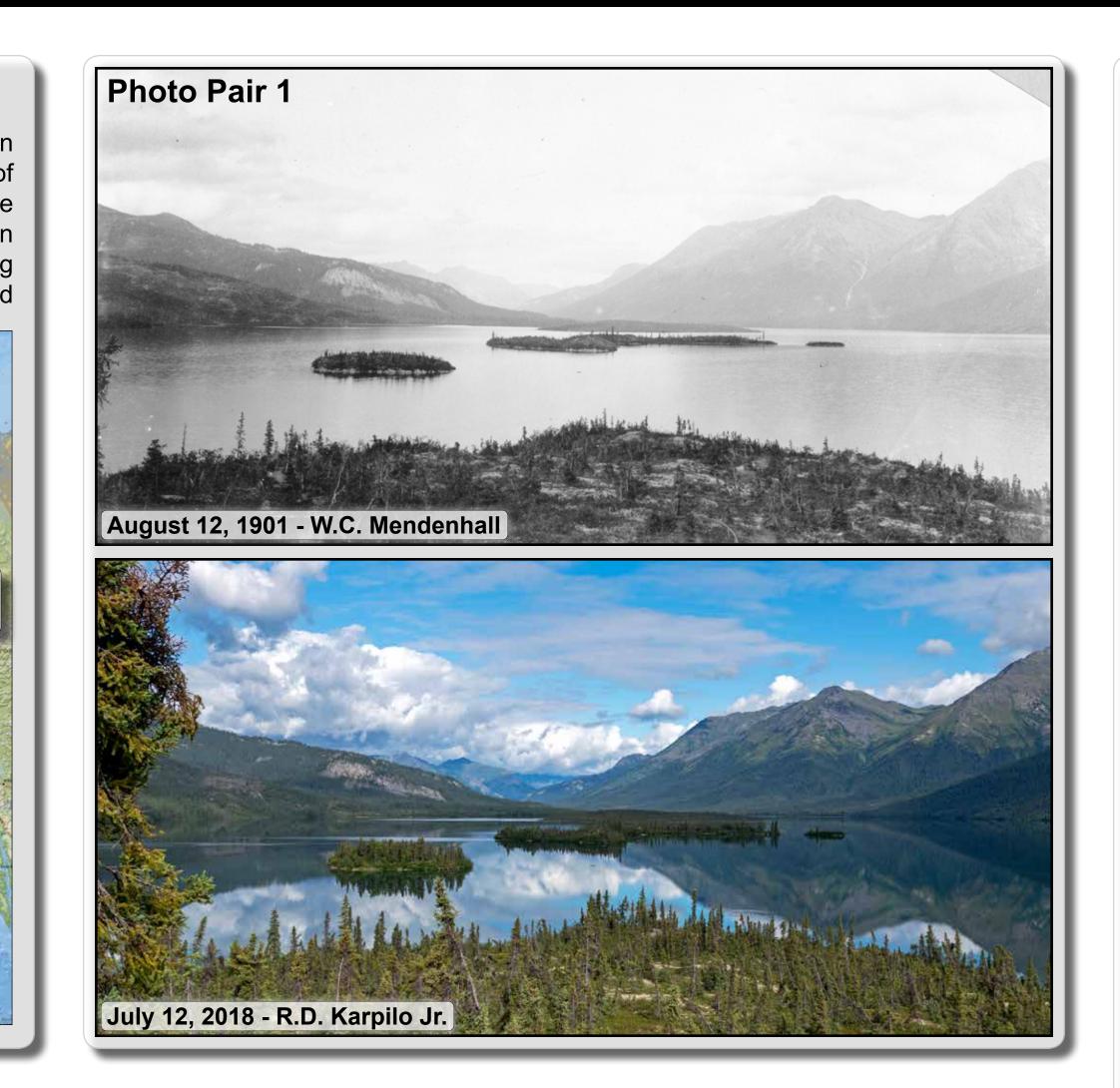
included: R.C. Applegate, W.B. Reaburn, W.W. Von Canon, George Revine, and W.L. Poto. The expedition left Fort Yukon on the Yukon River on June 8th and arrived at the newly formed mining town of Deering on the south shore of Kotzebue Sound on September 15th. The party covered a total of 1,169 miles traveling in lightweight Peterboro canoes, which they rowed, poled, sailed, tracked, or carried up and downstream several rivers and over two portages (totaling 23.5 miles and 2,800 feet of vertical elevation gain). See Mendenhall, 1902 for the published maps and report from the expedition.



Intelligence Division, Office of the Chief of am White (bush pilot) The expedition was based near the village of visit several lakes near the Kobuk River and made canoe traverses Mauneluk, and Kobuk Rivers. See Fernald, 1964 for the published map and repo elated to the fieldwork

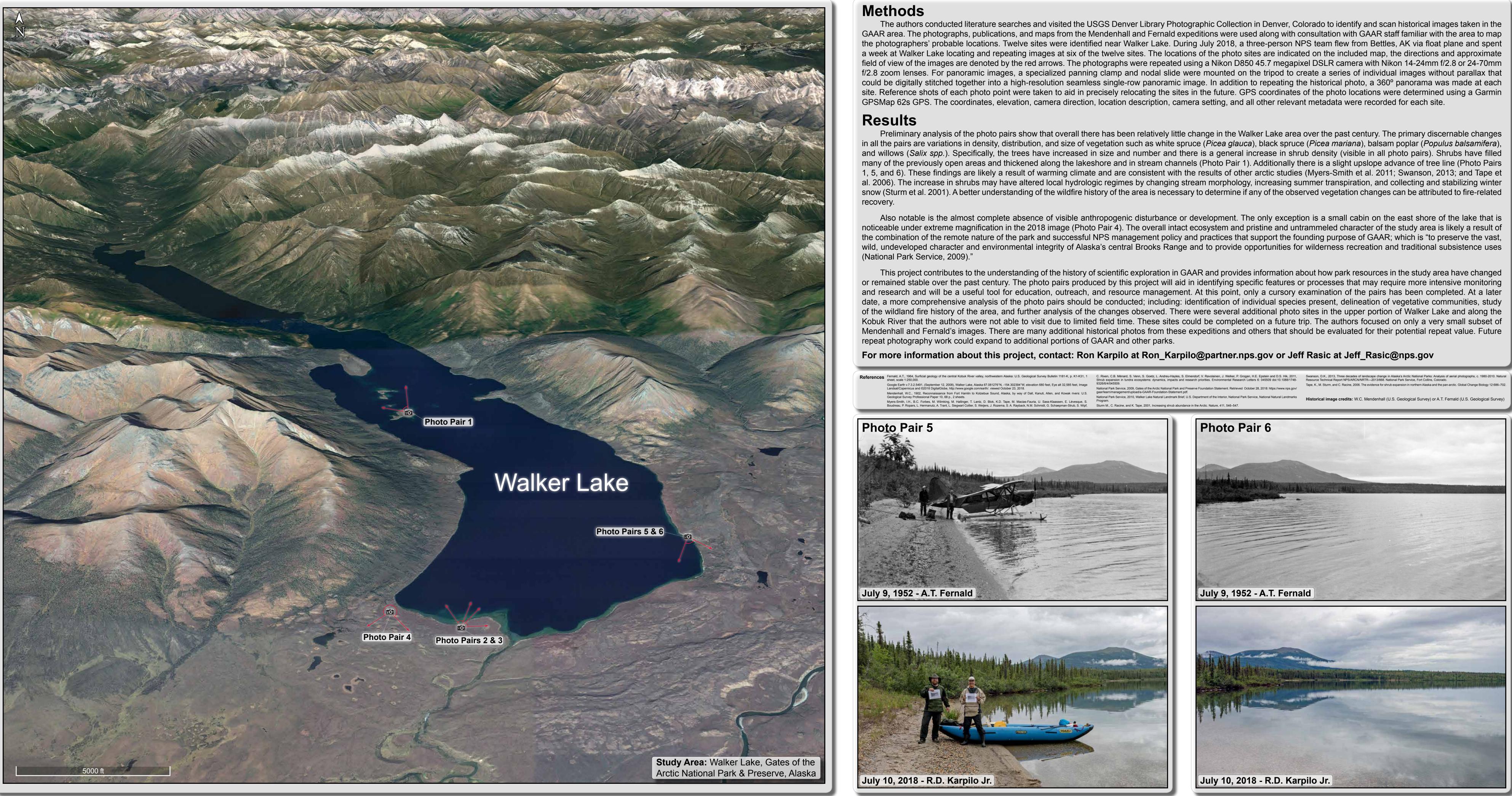


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