

Alaska – Glaciers, Gold and Grizzlies Part 2

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2 semester hours credit – Colorado School of Mines

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Cost with credit: \$1090. Cost without credit \$1000.

Day 1: Take the Alaska Railroad from Anchorage to Whittier, which includes traveling along the historic fishing and hunting grounds on the Athabaskan Eskimos along the Turnagain Arm of Cook Inlet. Although the natives used to trek over the dangerous Portage Pass and Portage Glacier to trade and fight with the Chugach Indians, the new rail route was built in the 1940's as Whittier became an important port during WWII. The rail route travels through the Anton Anderson Tunnel, one of the longest tunnels in North America at 2.5 miles in length as it journeys beneath the Chugach Mountains between Portage and Whittier. Specially built, this tunnel accommodates both the train and passenger cars. Learn the history of the native people, the geology of the Chugach Mountains and the Portage Glacier, as well as the history of the role Whittier played in WWII and currently in tourism. "Many miners and prospectors also used Portage Pass to reach the gold fields of Cook Inlet and the Kenai Peninsula in the late 19th century. Often dropped off at the head of Passage Canal, these adventurers used pack trains, sleds, and pulleys to drag equipment and supplies over Portage Pass in hopes of striking it rich in Cook Inlet or on the Kenai Peninsula. During this period, Portage Glacier still covered most of Portage Lake. Travelers climbed to Portage Pass and traversed the eastern edge of Portage Glacier to Bear Valley. From there they would walk the front of the glacier onto the base of Begich Peak and drop down to Portage Valley." <http://www.tunnel.alaska.gov/history.shtml>

At Whittier, we will learn the history of this tiny town of 200 full time residents and why it is such an important commercial port for Alaska. **1 hour lecture.** We will then board the Alaska Marine Ferry for an exciting journey across Prince William Sound, which encompasses 3800 miles of coast line and is a wonderland of 150 glaciers, including 17 tidewater glaciers. The gigantic Columbia Glacier calves hundreds of icebergs into the ice water of the Sound, where they drift among the feeding humpback whales, orcas, sea lions, and seals. Puffins, marbled murrelets, black-legged kittiwakes, and glaucous-winged gulls fish and mate among the rocky crags. We will keep a wildlife log as we sail across the sound and hopefully will see many of the 220 species of birds and 30 species of land mammals.

Landing at the port of Valdez, we will see the southern terminus of the trans-Alaskan pipeline which connects the oil field of Northern Alaska near Prudhoe Bay and travels 800 miles across inland Alaska to the port of Valdez. This is the site of the infamous 1989 Exxon Valdez oil spill, which spilled approximately 10.9 million gallons of crude oil into Prince William Sound. We will study the history of the oil spill, both in its costs to the wildlife and to its environmental impact.

This evening as we tour downtown Valdez, we will interview some of the local residents about their role in the fishing, tourism, and oil industry of Prince William Sound. We will also tour a local department store to watch a public video about the impacts of the 1964 Alaskan Earthquake.

Day 2: Off we sail for an up close kayaking tour of the massive Columbia Glacier, one of the largest tidewater glaciers in Prince William Sound. The tour includes wildlife watching, birding, and kayaking

among the calved icebergs from the Columbia Glacier. Our on board wildlife biologist will give us an overview of the impact of global warming on the tidewater glaciers of the sound. As we kayak among thousands of floating icebergs from the glacier, we will see for ourselves the huge amount of ice that is washing out to sea. This is the highlight of our tour of Valdez and Prince William Sound.

Day 3: After climbing aboard our rental car, we will head to the site of the Old Valdez, which was destroyed during the Earthquake of 1964. As the Pacific Plate continues its northwest journey at a pace of 5-7 cm. per year, the crust of southern Alaska becomes compressed and warped.

“On March 27, 1964, at 5:36 p.m. ADT (03:36 3/28 UTC) a great earthquake of magnitude 9.2 (moment magnitude) occurred in Prince William Sound region of Alaska. The epicenter was about 10 km east of the mouth of College Fiord, approximately 90 km west of Valdez and 120 km east of Anchorage. The epicenter was located at Lat. 61.04N, Lon. 147.73W, at a depth of approximately 25 km. This earthquake is the second largest earthquake ever recorded in the world, after a M9.5 earthquake in Chile in 1960. The duration of rupture lasted approximately 4 minutes (240 seconds).”

http://www.aeic.alaska.edu/quakes/Alaska_1964_earthquake.html

The tsunami wave, the 2nd largest ever recorded, that was created from the earthquake, intensified in strength as it entered the narrow channel leading to the town of Old Valdez, where it destroyed the entire town and claimed 82 lives. The waves were reported at 70 meters in the Valdez Arm. The town of Valdez rebuilt both its harbor and shipping yards as well as the town further out in the bay to avoid a reoccurrence of damage from the frequent earthquakes of the area. We will study the maps of the area and the geology of plate tectonics as well as the history of the earthquake.

Back on the road, we will continue up the Richardson Highway to the site of the January 25, 2014 avalanche that closed the only highway leading into Valdez from the outside world. Blocked by 30 feet of snow and ice, the avalanche left Valdez dependent upon its port as the only passage out. The Richardson Highway, Alaska's first "road" is important historically as the gold stampede travelers traveled this route from Valdez to the riches of Fairbanks. The trail was upgraded from a wagon route to an automobile route in 1920, but it was only hard surfaced in 1957. Viewing dozens of towering waterfalls and taking some short hikes will enable us to capture the essence of the local ecology. The Worthington Glacier provides a spectacular hike and a chance to witness the primary succession and land rebound as a large glacier recedes. This spectacular highway skirts the edge of the Wrangell - St Elias National Park, the largest in the U.S. National Park Service, with over 10 million acres. Wrangell - St. Elias is managed as a wilderness area, although there are agreements with the native Alaskans for land use. Many of the natives have fished and hunted in this pristine area for thousands of years. Alaska is the home of one of the biggest organized movements for Native rights in the U.S.

Day 4: Our morning class time will focus on the Kennicott Copper Mines National Historic Landmark. From 1911 until 1938, Kennecott mined nearly \$200 million of copper from this area that is now deep within the Wrangell - St. Elias National Park. Both a mine and a mill at the site employed approximately 600 people. The self contained company town sported a hospital, a store, a school, a recreation facility and a dairy. Most people arrived at the mine by railroad. By 1938, the high grade copper ore was depleted and Kennecott abandoned the site. The National Park Service has stabilized the area and it is now on the National Historic Registry.

Departing Valdez, we will either fly or take the ferry and railroad back to Anchorage to catch our flights home.