

The Klondike Gold Rush 1896 - 1898

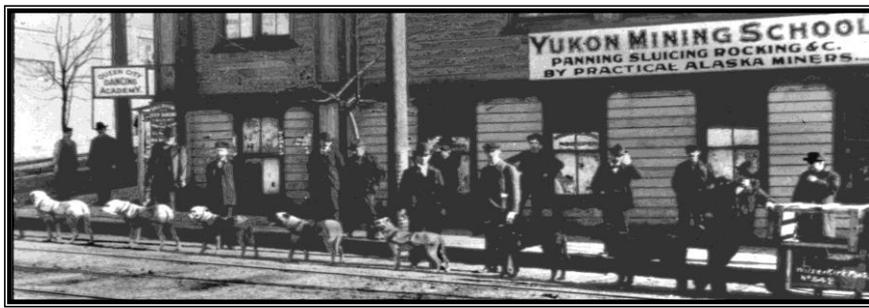
A Resource Guide
to
"The Last Grand Adventure"



**Klondike Gold Rush
National Historical Park
Seattle, WA**

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THE NATIONAL PARK SYSTEM

Congress established Yellowstone National Park March 1, 1872, in the territories of Montana and Wyoming, “...as a public park or pleasure ground for the benefit and enjoyment of the people...,” and placed it “under the exclusive control of the Secretary of the Interior.” Yellowstone was the first National Park in the world. Today there are more than 1200 national parks or equivalent reserves in more than 100 countries.

President Woodrow Wilson signed the law establishing the National Park Service on August 25, 1916. In part this law states:

“The service thus established shall promote and regulate the use of Federal areas known as national parks, monuments, and reservations by such means and measures as ... to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

Since 1916, the National Park System has grown to include almost 400 areas and 84 million acres. These areas not only protect unique natural values and biological diversity, but also prehistoric historic and cultural values as well. A list of the types of areas and numbers of these areas represented in the National Park System as of June 9, 2009, follows:

National Battlefield; National Battlefield Park;	
National Military Park; National Battlefield Site	24
National Historical Park; National Historical Site;	
International Historic Site	123
National Lakeshore	4
National Memorial	27
National Monument	74
National Park	58
National Parkway	4
National Preserve/Reserve	20
National Recreation Area	18
National Scenic Trail	3
National Seashore	10
National River; National Wild and	
Scenic River; National Riverway	15
Other Designations	11



For more information about the national Park System in general, refer to the U.S. Government Printing Office publication The National Parks Index 2007-2008 gives a complete listing of all the sites managed by the National Park Service.

The employees and volunteers of the National Park Service bring a diversity of background and skills to their work. Some park rangers perform resource and visitor protection duties; other work in resource education. Administrative staff, maintenance employees, trail crew, scientists, technicians, researchers, historian, architects, and many others work as a team to care for sites in the National Park System.



On June 30, 1976 President Gerald Ford signed the law authorizing Klondike Gold Rush National Historical Park. In part the law states, *“That in order to preserve in public ownership for the benefit and inspiration of the people of the United States, historic structures and trails associated with the Klondike Gold Rush of 1898, the Secretary of the Interior is authorized to establish the Klondike Gold Rush National Historical Park..., consisting of a Seattle unit, a Skagway unit, the Chilkoot Trail unit, and the White Pass Trail unit...”*

For more information about Skagway, Chilkoot and White Pass Trail units contact:

Superintendent - Klondike Gold Rush National Historical Park – Skagway Unit
P.O. Box 517
Skagway, AK 99840-0517
Telephone: (907) 983-2921

The law authorizing the National Historical Park also stated, *“...within the Pioneer Square Historic District in Seattle...the Secretary may select a suitable site for the Seattle unit...”* Today, true to the spirit of the legislation, the Seattle unit of the park is located in the historic Pioneer Square neighborhood at 319 Second Avenue South. In the park brochure for the Seattle unit is a map depicting the boundaries of the Pioneer Square Historic District.

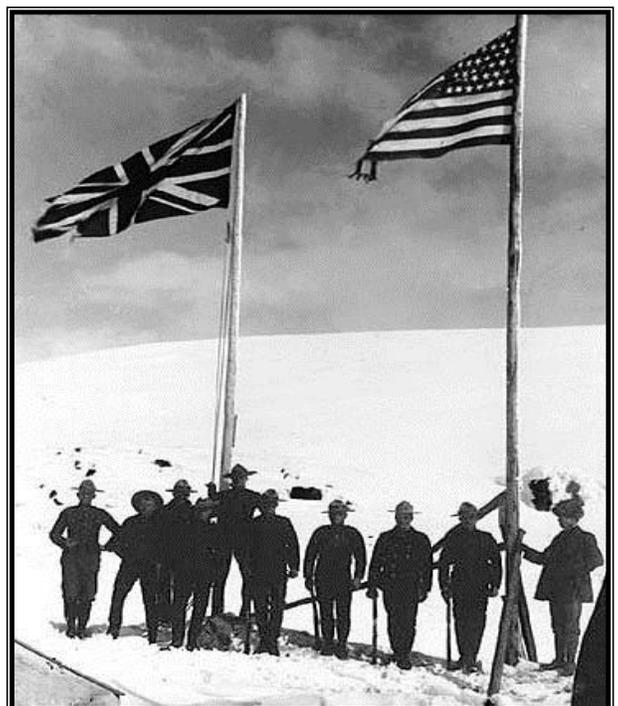
For information on the Seattle unit please contact:

Superintendent- Klondike Gold Rush National Historical Park – Seattle Unit
319 Second Avenue South
Seattle, WA 98104
Telephone (206) 220-4240

Parks Canada, Canada’s National Park Service, recognizes the Klondike Gold Rush natural and cultural values by managing Chilkoot Trail National Historic Site in British Columbia and the Klondike National Historic Sites in Dawson City, Yukon Territory.

For more information contact:

Parks Canada – Yukon
Suite 205 – 300 Main Street
Whitehorse, Yukon Territory
Canada
Y1A2B5
Telephone 1-800-661-0486



White Pass Summit 1898



THE ERA OF THE GOLD RUSH

In western North America during the mid-19th century, prospectors had been seeking their fortunes. In the United States the California Gold Rush (1849) set in motion a migration of people across the continent and around the world. The name “forty-niner” became synonymous with these avid prospectors. Other mineral strikes resulted from miners exploring in the mountain ranges of North America.

By the last third of the 19th century similar explorations were occurring in British Columbia. Prospectors in the mid-1880s explored the Yukon River drainage. Fortymile, a mining camp 40 miles downstream from Fort Reliance in northwestern Canada, experienced three rushes, also known as stampedes, in 1887. Then years later members of this community initiated the first stampede to the Klondike



Chilkoot Pass winter of 1897 from The Scales



DISCOVERY IN THE KLONDIKE

Robert Henderson, of Nova Scotia, had been prospecting for gold along the tributaries of the Yukon River. In August, 1896, he struck up a conversation with George Washington Carmack, an American, who was accompanied by three companions: Carmack's Tagish Indian wife Kate (Shaaw Tlaá); her brother, "Skookum Jim" Mason (Keish); and their nephew, "Dawson Charlie" (Káa Goox).

As they talked, Henderson invited Carmack to work his claim on Hunker Creek but insisted Kate, Jim, and Charlie stay behind. Henderson did not care for the natives who lived along the Yukon River. He may also have suggested that Carmack explore Rabbit Creek, a tributary of the Klondike River, for gold deposits.

On August 16, 1896, Carmack and Jim were searching along Rabbit Creek when Jim saw "gold, shining like cheese in a sandwich." Carmack and Charlie rushed over. Carmack dipped a pan into the gravel. It yielded more than a quarter-ounce of the precious metal. This was outstanding! A good "pan" was considered one that yielded much less.

Jim remained to guard the area while the others rushed to Fortymile to register the claims. Carmack named himself as the discoverer, entitling him to two claims, and registered one claim each for Jim and Charlie. He also renamed Rabbit Creek "Bonanza."

After filing the claim Carmack went to Bill McPhee's saloon, a popular spot for Yukon prospectors. Calling for attention, he paused dramatically and announced, "Boys, there's been a strike on Rabbit Creek." Carmack's nickname in Fortymile had been "Lyn' George," but this time he told the truth.

Within a matter of days Bonanza and Eldorado creeks were staked from end to end. The unwritten "miner's code" said Carmack should send word to Henderson so that Henderson could stake a claim on the creek he had apparently suggested that Carmack explore. Carmack, still angry over the slight to his native Yukon family, did not. By the time Henderson arrived on the scene, there were no likely claims left to stake.

Although the gold was first discovered in August, 1896, word did not reach the "outside" world for 11 months when ships carrying news of the gold strike docked in San Francisco and Seattle. In the interim, the prospectors already at the Klondike or enroute accumulated a tremendous amount of gold. They became known as the "Klondike Kings."



THE UNITED STATES IN 1897

Why would someone leave home to travel to the Klondike goldfields? The answer cannot be found in bank accounts or photo albums. Instead, consider the human spirit of the late 1890s. A severe depression called the Panic of 1893 rocked the American economy, putting prosperous businesses into bankruptcy and sending the nation's morale into a downward spiral. There was no end in sight to the desperation felt by the thousands of unemployed.

In 1890 the Census Bureau declared that the western frontier had closed. In other words, every region of the contiguous United States had been settled. For the wanderers, adventurers, and explorers, this was the end of an era. The only place left was the great northern expanses: Alaska and northwest Canada. The Last Frontier.

Rumors of a big strike on the Yukon River in Canada proved true with the arrival of the *SS Excelsior* in San Francisco on July 15, 1897. The \$750,000 of gold on board caught the attention of people across the country, especially those in Seattle. The miners arriving in San Francisco let it be known that the *SS Portland*, bound for Seattle, carried even more gold.

The Seattle Post-Intelligencer sent a group of reporters on a chartered tug to intercept the *Portland* as it neared Seattle. After interviewing its passengers the reporters sped back to Seattle. News of the ship's impending arrival with prospectors and gold hit the streets before

**"GOLD! GOLD! GOLD!
STACKS OF YELLOW METAL."**

In an article written by *Post-Intelligencer* reporter Beriah Brown were the words that would trigger the great stampede: "At 3 o'clock this morning the steamship *SS Portland* from St. Michael for Seattle, passed up [Puget] Sound with more than a ton of solid gold on board. . . .A ton of gold and 68 passengers." The *SS Portland* actually carried at least *two* tons of gold.

The initial stampede was not to the Klondike, far to the north, but rather to Schwabacher's Dock on the Seattle waterfront. That's where the *Portland* docked at 6 a. m. on July 17, 1897, to be greeted by 5,000 curious spectators. They were eager to see the gold and to hear first-hand stories of the 68 mines on board. It was almost as if just hearing the miners' stories would bestow the touch of Midas—or so many hoped.



By 9:30 that same morning people were resigning from their jobs. The promise of a paycheck, no matter how large or small, was no match for the “certain” wealth to be made in the Klondike. Streetcar operators, salesmen, policemen, ministers—even the mayor of Seattle, W. D. Wood—left their jobs. In 10 days, more than 1,500 hopefuls had left for the Klondike, and many more were anxious to join them.

From 1897 to 1898 thousands of stampedeers came through Seattle on their way to the Klondike goldfields. As men, women, and families—mostly men—passed through the city, they left an immediate impact, one that revitalized the city’s struggling economy.

Merchants, who for four years had been reeling from the effects of the Panic of 1893, were suddenly set upon by frenzied optimists preparing for the journey north. Stores such as Cooper and Levy, the Bon Marché, and Frederick and Nelson prospered. An outfit for the average Klondike-bound adventurer cost between \$250 and \$500. In the first eight months of the rush, Seattle retailers sold millions of dollars worth of goods. The city became the leading retail center of the Pacific Northwest.

Thousands of prospective miners who flocked to Seattle made the city their temporary home, delighting merchants but creating shortages of hotel rooms and boarding houses. Newcomers swarmed to downtown Seattle bent on finding a “flop” or bed. Spare rooms, basements, and attics were converted into living quarters for stampedeers awaiting transportation to Skagway, Alaska, and other points north.



Pioneer Square, then Seattle’s downtown, offered many diversions to those who had time and money to spare. Hungry stampedeers could purchase meals at the Merchant’s Café or any one of many other restaurants and cafés. Abundant gambling halls, variety theaters, saloons, and brothels catered to other needs and whims. Adding to the neighborhood’s already rough-and-tumble reputation, petty thieves and confidence men preyed upon unsuspecting stampedeers.

Cooper and Levy Store



A KLONDIKE LEGACY

Seattle lacked a U. S. Assay Office to purchase and process the miners' raw gold. To prevent the loss of this potential revenue source to San Francisco, local merchants and banks bought the miners' raw gold. Prominent Seattleites also vigorously lobbied Congress to establish a local assay office and one opened in 1898. In its first year the new office received and processed \$1.5 million in gold.

Most of the stampeders who went through Seattle never reached the goldfields. Many made Seattle their permanent home. During the two years of the rush—1897 and 1898—Seattle's population rose about 10 per cent, to some 64,000.

The city offered many incentives to those who decided to stay, particularly jobs. As business improved, merchants hired clerks and stockers to keep up with rising demand. Local manufacturers of equipment and clothing, food processors, and shipyards, among other industries, also needed workers. Municipal workers, including police, were needed to replace those who'd quit to follow their dreams of riches awaiting them in the north.

The overall effect was a complete metamorphosis for a once sleepy city. Booms in business, population, and national recognition secured Seattle's viability as a major Northwest city. The foundation for the Seattle we know today was laid during this period.

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Although the Klondike goldfields lay in Canada, some 1,600 miles north of the city, Seattle's Chamber of Commerce began a vigorous campaign to sell the city as the "Gateway to the Goldfields." Other northwest cities, among them Vancouver and Victoria in British Columbia, Tacoma, Washington and Portland, Oregon, also sought to attract stampeders and their dollars. Seattle dominated all. It had the advantage of being the northernmost American city with both a seaport and transcontinental railroad connections. And it also had Erastus Brainerd, a Harvard-educated journalist with a flair for salesmanship.



Erastus Brainerd



Brainerd, hired by the Chamber of Commerce to head the “Bureau of Information,” a committee organized to publicize Seattle as a developing port and commercial center, had ambitious plans:

- He took out advertisements in hundreds of newspapers throughout the U. S.
- He prepared a fact sheet on the goldfields and Seattle for the mayor of every U. S. community with a population of 5,000 or more.
- He sent a personal letter of invitation to the rulers of other countries.
- He wrote advertisements thinly disguised as news stories about the gold rush and Seattle.

Brainerd’s efforts largely established Seattle’s reputation as the best source of supplies and transportation to the north. Many stampedes chose Seattle as their supply base and departure point because Brainerd, in effect, told them to.

**Seattle
Klondike
Alaska**

THE SEATTLE WASH. Chamber of Commerce HAS ESTABLISHED A
BUREAU OF INFORMATION
WHICH WILL ANSWER
FREE OF CHARGE
all questions as to Routes of Transportation, Cost of Outfitting, etc., for
the Yukon, Copper River, Kenai Peninsula and other ALASKAN GOLD
FIELDS; for which Seattle is the port of departure. Address
E. BRAINERD, Secretary, Seattle, Wash.

Brainerd newspaper ad promoting Klondike

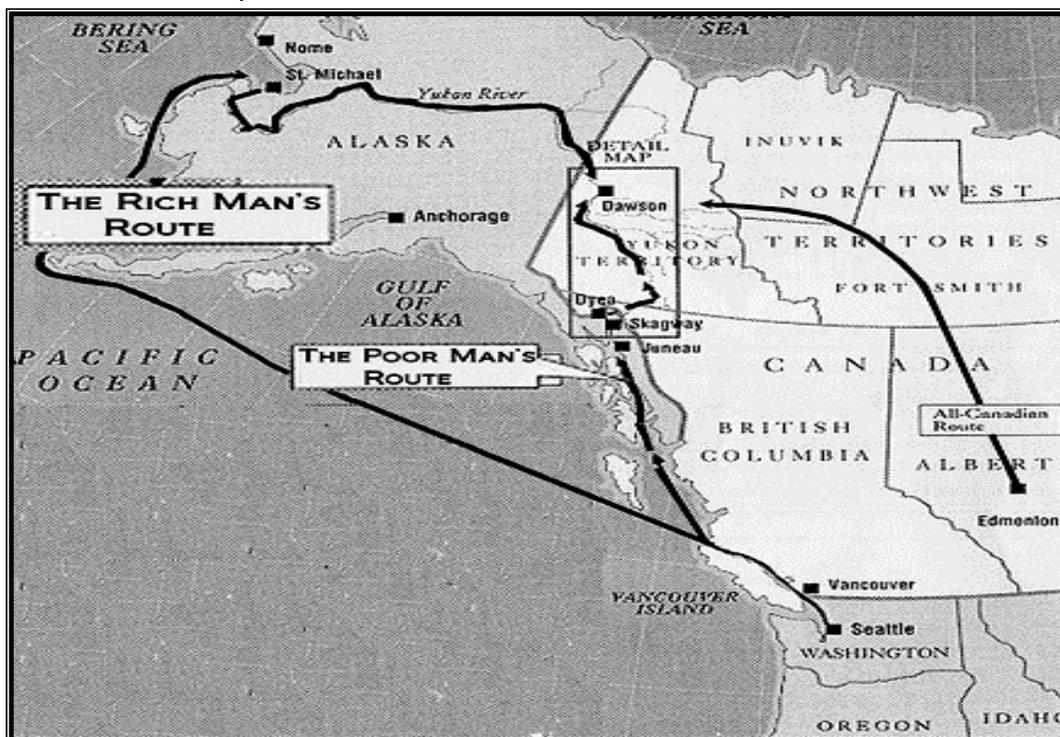


THE JOURNEY NORTH

The all-water route, sometimes referred to as the rich man's route because of its expense, involved sailing 2,000 or so miles from Seattle or some 3,000 miles from San Francisco to St. Michael, Alaska, at the mouth of the Yukon River. There travelers transferred to a river boat that steamed up the Yukon some 1,700 miles to Dawson City, near the goldfields. Approximately 10 per cent of the stampedeers took this route, advertised by the Alaska Commercial Company to cost \$150 and take about a month. In reality, storms and navigation problems on the Yukon commonly doubled or more than doubled the time involved. Some stampedeers spent more than a year attempting to reach the Klondike because their river boats became trapped in ice for months at a time. Fares also jumped. A \$2,000 fare was not uncommon at the height of the rush.

An all-Canadian route, promoted by merchants in Edmonton, Alberta, departed from that city. Perhaps 2,000 people started on this extremely rugged overland route, a few hundred of whom arrived at the goldfields long after the rush had ended.

The most popular route usually began at Seattle and for 1,000 miles followed the Inside Passage off the coast of British Columbia and southeast Alaska to the head of the Lynn Canal at the adjoining towns of Skagway and Dyea, Alaska. From there stampedeers hiked over either the Chilkoot or White Pass trails—roughly 33 arduous miles—to Lake Linderman and Lake Bennett just over the border in British Columbia, where they built or assembled rafts and boats to carry themselves and their supplies down the Yukon some 560 miles to Dawson City.





The demand for steamships to carry passengers to the Klondike was high and ships were pulled from other routes. Many that had been out-of-service were renovated and sailed again. Old sailing ships were converted into barges and towed north. Ships ranged in size from the *SS Dora*, about 100 feet long, to the *SS Athena*, a passenger steamer almost four times as long. Propeller-driven steamships were common, but just about anything thought seaworthy—and some that weren't—was used.

Overcrowding on ships headed north was common. Small steamers, such as the *SS Amur*, designed for 160 passengers, carried as many as 500. Temporary quarters usually consisted of a bunk bed in the hold, next to animal stalls. As the demand for berths increased, the price for a one-way ticket to Skagway from Seattle rose from \$10 to \$20 prior to the stampede to as much as \$50 afterward.

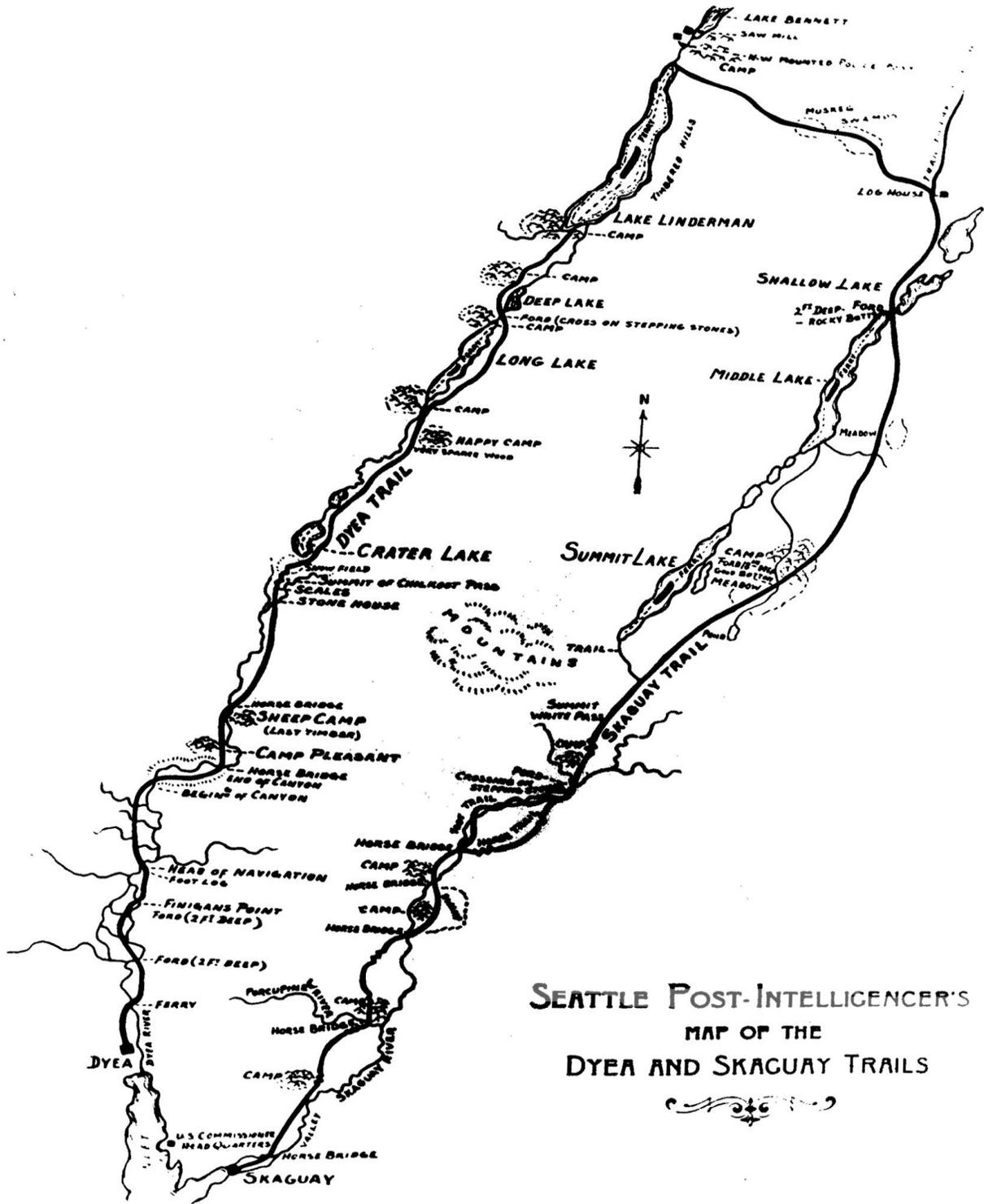
Seattle's waterfront became a jumble of confusion as stampedeers, well-wishers, and tons of freight lined the docks waiting to be loaded. More than 9,000 people and 36,000 tons of supplies left Seattle in the first six weeks of the gold rush.

The stampedeers who chose the sea/land route via the Inside Passage faced another challenge when they arrived at Skagway or Dyea. Two trails, the White Pass from Skagway and the Chilkoot from Dyea, crossed through the Coast Range mountains to lakes Linderman and Bennett, headwaters of the Yukon. Although the trail over the White Pass was seven to 10 miles longer, the summit was at least 500 feet lower than that over the Chilkoot. The stampedeers who arrived in Skagway in 1897 wanted to believe that the White Pass was the better route. Those who brought pack animals expected to find an improved trail. Instead, they found a wretched boulder-strewn narrow passageway so treacherous that more than 3,000 horses were killed in the attempt to cross. The White Pass soon became known as the "Deadhorse Trail." A combination of "Klondicitis"—the panic and rush to reach the Klondike before the next person—lack of proper feed, poor trail conditions and mistreatment contributed to the high animal death toll. In May, 1898, construction began on the White Pass and Yukon Route Railway, completed two years later, ending use of the White Pass.

During the gold rush the Chilkoot trail proved to be the most direct route to the headwaters of the Yukon. It had long been a vital link in an extensive trade network in the region. The Tlingits, a native people of Alaska and Canada, controlled the Chilkoot trail, making annual trips from the coast to trade fish oil, clam shells and dried fish for fur and other products of the native peoples of the interior.

The Chilkoot trail began at Dyea, just west of Skagway, and ran 33 miles to Lake Bennett. Shorter but steeper than the White Pass, its most memorable feature was the final ascent to the 3,739-foot summit of Chilkoot Pass. Stampedeers cut steps in the ice leading to the summit—the "Golden Stairs"—to help ease the climb and avoid sliding backwards. Letters and newspapers tell of the hardships and dangers of the Chilkoot such as the avalanche of April 3, 1898 that killed more than 60 people.

THE CHILKOOT AND WHITE PASSES



SEATTLE POST-INTELLIGENCER'S
MAP OF THE
DYER AND SKAGUAY TRAILS



In the autumn of 1897 an enterprising stamper set up a horse-powered tram that could hoist luggage between a point on the pass, known as the Scales, to the summit for a small fee. By the following spring, there were three gasoline and steam powered tramways in operation that ran up and down the length of the pass. If a stamper could afford the fee, five to fifteen cents a pound, buckets suspended on a cable could carry cargo to the summit.

At the summit of the Chilkoot Pass, Canadian Northwest Mounted Police set up a checkpoint. Stampeders would pay duties on their goods, and the Mounties would inspect each outfit. To insure that those who entered Canada were prepared for the rough winter conditions, the "One Ton Law of 1898" was put into effects. An outfit consisted of 1200 pounds of food and 800 pounds of clothing and equipment.

The Chilkoot and White Pass trails ended at two adjoining lakes: the Chilkoot at Lake Linderman and the White Pass at Lake Bennett. While scores of people coming across the Chilkoot Pass stopped at Lake Linderman, many continued onto Lake Bennett, fearing travel through the rapids between the two lakes.

THE YUKON RIVER

The Yukon was the most obvious route to follow to the goldfields, but the journey was by no means easy. The upper portions of the Yukon River were navigable for approximately five months of the year; late May through mid-October. Because of their timing, or lack of it, several thousand people would find the Yukon River and the lakes completely frozen upon their arrival. Regardless of where a stamper stopped, they all faced the same prospect; waiting for the river to thaw.

A major task facing most of the stampeders was the construction of a boat that would allow them to complete their journey to the Klondike. Some had purchased prefabricated boats that were hauled over the passes in pieces and then later assembled. Most however, were faced with the prospect of building a boat. Very few had any experience as boat builders. However, this did little to discourage them from the task at hand. The area around the lakes was quickly stripped of standing timber so the stampeders could easily satisfy their need for wood.

On May 29, 1897 the ice began to break and 7000 boats set sail for the Klondike. A series of rapids was awaiting the stampeders as they moved down the Yukon River. In the first few days ten people drowned and more than 150 boats were wrecked.

The Mounties, under the leadership of Superintendent Samuel Steele, established specific regulations for boats going down the Yukon. Only experienced pilots were allowed to navigate boats through the more difficult rapids. Women and children were required to walk around rapids. The Mounties required each boat to display a serial number. The number, along with the names of the boat's occupants and the addresses of their next of kin, were recorded. The lists were sent to various checkpoints run by the Mounted Police along the river.



THE CITY OF GOLD

Dawson City was named for George M. Dawson, a government geologist, by Joseph Ladue the city's founder. When whispers of the gold rush began, Ladue knew that wealth was found more readily by supplying stampedes. Instead of rushing to stake a claim in the goldfields, he platted a townsite on the swamp below the tapering mountain at the Klondike's mouth. Ladue returned to his sawmill and loaded his raft with enough timber to move to the new townsite. The sawmill and cabin Ladue built were the first buildings in the new mining camp.

Dawson city grew slowly that winter. By April 1897, there were about 1,500 people in the community. By the summer of 1897, the population was nearing 3,000. During the peak of the Klondike gold rush in 1898 the population of Dawson City and the surround area exceeded 30,000. It soon became a large cosmopolitan city with telephone service, running water, steam heat, electricity, dozens of hotels, motion picture theaters, a hospital, and many restaurants.

Despite the amenities in Dawson, the city suffered from its share of problems. There was no sewer system or garbage disposal in Dawson, by midsummer, the whole city was a reeking swamp. Malaria and typhoid epidemics swept over the city and scurvy was also prevalent due to the stampedes poor diets.

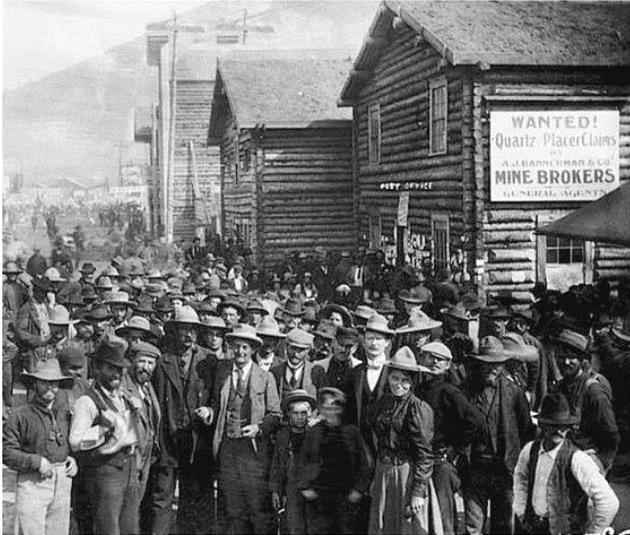


Dawson City 1898



THE GOLD FIELDS

The Klondike Gold Rush was fueled by hope, rumors, and speculation; but what were the facts? Historians are fairly certain that over 100,000 people left for the Klondike region via the west coast port cities. Fewer than 40% completed the journey. Half of those who did complete the trip never even bothered looking for gold when they saw that the creeks were already staked.



The first claim on any creek or river is called the Discovery Claim. The claims upstream from the Discovery Claim were numbered "One Above"; the claims downstream "One Below" and so forth. Preceding the number was the name of the creek or river the claim was on.

Many of the original claim owners became very rich. Charley Anderson, dubbed "The Lucky Swede" purchased #29 above on Eldorado for \$880. In less than four years, he had removed more than one million dollars from it. Thomas Lippy staked #36 Below Eldorado, which he

traded for #16 Below Eldorado. As luck would have it, over one million dollars was produced from #16 and very little from #36 Below. This area of the Klondike has yielded the highest concentrations of placer gold in the world to date. In some areas, single pans were panning out at over \$500 to the pan.

Upon their arrival in Dawson City, a majority of the stampedees were quick to realize that all the known gold deposits were claimed. Only a fortunate few who had the financial capital to purchase an existing claim, buy into partnership, or lease a claim, had an opportunity of finding gold. It is believed that only approximately 300 stampedees earned \$15,000 or more from mining in the goldfields.



GOLD! GOLD! GOLD!

Gold possesses several physical characteristics that make it unique and contribute to its relative value. Gold is so malleable (ability to be pounded into a sheet) that it can be pressed thinly enough to see through (gold leaf). It is so ductile (ability to be drawn into a wire) that 1 ounce can be drawn into a wire over 40 miles long! Because gold is an excellent conductor, it is often used to plate electronic connections. Gold is impervious to virtually all substances (most acids, etc.) that cause other materials to corrode. This is why gold maintains its distinctive color and luster.

One characteristic of gold that is important to a prospector is its specific gravity. Specific gravity is a unitless number that is the ratio of the weight of a given volume of substance to the weight of an equal volume of water. The ratio of the weight of an object to its volume is the density of the object. The density of water is one gram per cubic centimeter, therefore, the specific gravity of an object is the numeric value of its density without units of weight and volume. Gold is an extremely dense material with a specific gravity of 19.2 (19.2 times heavier than water). Most minerals, and therefore rocks, are 2.5 to 4 times heavier than water. The extremely high specific gravity of gold is the reason why techniques such as panning and sluicing work.

Gold is deposited from hot solutions of water that move up into the crust of the earth, allowing minerals such as gold to be deposited as pressure and temperature decrease. The solutions may originate from molten rock below the earth's surface or from deeply buried sedimentary rocks. These solutions commonly move toward the surface of the earth along fractures. The mineral deposits occurring along fractures are called veins. On some occasions the mineralizing solution may move through the pores in the surrounding rock producing a disseminated deposit. Mining a material that is in place within solid rock in which it was deposited is referred to as lode mining. However, the lode can be subjected to weathering and the erosive effects of streams, glaciers, wind, etc. A mineral deposit that is no longer in place within solid rock in which it was deposited is a placer deposit. Placer deposits were mined in the Klondike. The source of this placer deposit was never located.

Placer mining involves removing gold from associated sediments. One of the least complicated and best known ways to do this is by panning. It is a portable means of finding gold that is inexpensive and requires little skill.

The technique for actually separating the gold from the gravel is relatively simple. The pan is filled with the sand and gravel and then submerged in water. The pan is then shaken, allowing the denser materials to move to the bottom of the pan. The less dense material, which is now near the top of the pan, is rinsed away by tipping the pan and lifting it upward and out of the water. The process is repeated to concentrate the relatively dense material in the bottom of the pan. The material remaining will include more than gold. Nuggets and larger



Seattle Assay Office



pieces of gold are picked out by hand or with tweezers. Finer grained gold is separated from the commonly associated black sand by using a magnet. After drying, a magnet will attract the magnetite, or "black sand," and leave the gold. "Flour" gold will typically be removed from the remaining sediment by mercury amalgamation. Mercury is placed in the pan, where it readily forms a mixture, or amalgam, with the gold. The amalgam is then heated. The mercury vaporizes and the gold remains.

For some prospectors, panning is the only method used to find gold. In the Klondike, panning was a preliminary sampling technique. In this instance, panning is utilized to allow a prospector to decide whether or not to stake a claim and establish a large scale mining operation. With panning, only a small amount of material can be processed at any time. Even though gold concentrations were high in the Klondike, the key to potentially acquiring a large amount of gold would be to process a large amount of gravel.



Sluice box of Berry Claim

One device that is more efficient than a pan is a sluice box. In its simplest form a sluice box is nothing more than an open-ended trough through which water flows. Riffles, small strips of wood, are commonly attached to the bottom of the sluice. Additionally, burlap or canvas may be placed beneath or between the riffles.

The method by which the sluice operates is simple. As water flows through the sluice, gold-bearing gravel is shoveled in. The running water carries away the less dense sediments whereas the heavier sediments (gold, black sand, etc.) settle to the bottom of the sluice. The riffles and the cloth trap these heavier sediments. Water is allowed to run through the sluice until it is clear of gravel, then the flow of water is stopped. The material that has accumulated at the bottom of the sluice is removed, the riffles cleaned, and then panned or amalgamated to separate the gold. If some type of cloth was placed along the bottom of the sluice this cloth is removed at the end of the sluicing operations and burned. Any gold dust present in the cloth is easily separated from the ash.



In order to operate a sluice efficiently, it is essential to have an adequate supply of gravel and running water. Sluices were built either in or near streams. Gravel was typically removed from the bottom or the banks of the stream. However, this presented a problem in the Klondike because streams were frozen for eight to nine months in a year. This deprived the prospectors of flowing water and access to gravel located in the bed of the stream.

It is important to understand that stream sediments can be found in places where streams no longer flow. Through time, streams change location. They can move across the floor of a valley, depositing material. Streams can also deepen their valley through erosion while simultaneously depositing material. This means that stream sediments may be found along the valley walls at elevations above that of the stream surface. These stream sediments that are no longer in contact with the stream may also contain gold.

To process these sediments, some sort of mining operation would have to be undertaken. In most cases, loose sediments cannot be mined utilizing the typical subsurface mining techniques of digging vertical shafts and lateral drifts. The passages would simply collapse. However, permafrost, or permanently frozen ground, exists in the Klondike. The "loose" stream sediments are always frozen. Mine passages could be safely constructed after controlling thawing, utilizing fires or steam.



Women working sluice

In the years after the initial rush, hydraulic mining was utilized to process larger amounts of gravel. Taking advantage of the abundance of water, rather than digging shafts into the permafrost, large cannons sprayed water under high pressure onto the sediments. The sediments would wash down into the stream bed where they could be processed.

Miners would spend the winter months mining gravel, and the summer months performing "clean up": separating gold from gravel. Since the mines might be some distance from a source of water, a sluice was not a practical way to separate the gold from the gravel. Miners would typically use a rocker box to accomplish the task. A rocker box does not require the large amounts of water needed to operate a sluice.



THE KLONDIKE LEGACY

The riches that came from the Klondike gold fields combined with the profits made by Seattle's merchants triggered a period of explosive economic growth and changed that lasted until 1910.

Seattle's prosperity, followed the end of the gold rush in 1898, continued to attract people to the Pacific Northwest. In the decade after the gold rush more than 170,000 people migrated to Seattle. While most of these new residents came from other regions of the United States, Seattle attracted a substantial number of immigrants from Europe and Asia. By 1910 Seattle had one of the largest populations of Chinese and Japanese immigrants on the western seaboard. Matching the growth in population, Seattle's city limits expanded as well. The city grew along every point of the compass, annexing small hamlets, such as Ballard and a substantial portion of Lake Washington's western shore.

The city could not have grown in the fashion it did without the benefit of a vibrant economy. As miners returned to Seattle, many of them invested their fortunes into local businesses. John Nordstrom invested \$13,000 of his Klondike gold into a local shoe store owned by a cobbler he had met in Alaska. Existing outfitters, such as the Bon Marche, were able to capitalize on their successes in the gold rush and transform their small store fronts into large department stores.

Given the volume of business, Seattle quickly surpassed Portland as the commercial center for the Pacific Northwest. Maritime links to San Francisco, the Midwest and Northeast, Seattle's manufactured goods and natural resources could be shipped both nationally and internationally.

As business flourished, Seattle's tax coffers began to grow, allowing city planners to consider a number of public works projects that would propel Seattle into the twentieth century. The numerous hills that loomed above Seattle were either eliminated or lowered in elevation. Starting at the turn of the century, and for the next fifteen years, millions of cubic feet of soil were moved. Once Seattle had room to grow, improvements were also made on the sewer, water, and gas systems.

As Seattle's fortunes grew, the city's business community wanted to construct a ship canal connecting the two large fresh water lakes, Union and Washington, with Puget Sound. After numerous attempts by private contractors, with the help of the Corps of engineers, a channel was dug between the two bodies of water. A dam, fish ladder, and lock system was built at Ballard, allowing vessels to pass from lakes into the Sound.

The buildings that have been preserved in Pioneer Square and the businesses that have roots in the 1890's, are important reminders of the part Seattle played in the Klondike Gold Rush. In contemporary Seattle, just as in 1897-98, thousands of customers still frequent the Bon Marche, Nordstrom and C.C. Filson. Concerned citizens have preserved the distinctive nineteenth century buildings that many of the stampedeers frequented in Pioneer Square and along the waterfront. In 1976 Congress passed legislation that created Klondike Gold Rush National Historical Park, a park dedicated to telling the story of Seattle's role in the stampede north. The legacy of the rush continues.



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