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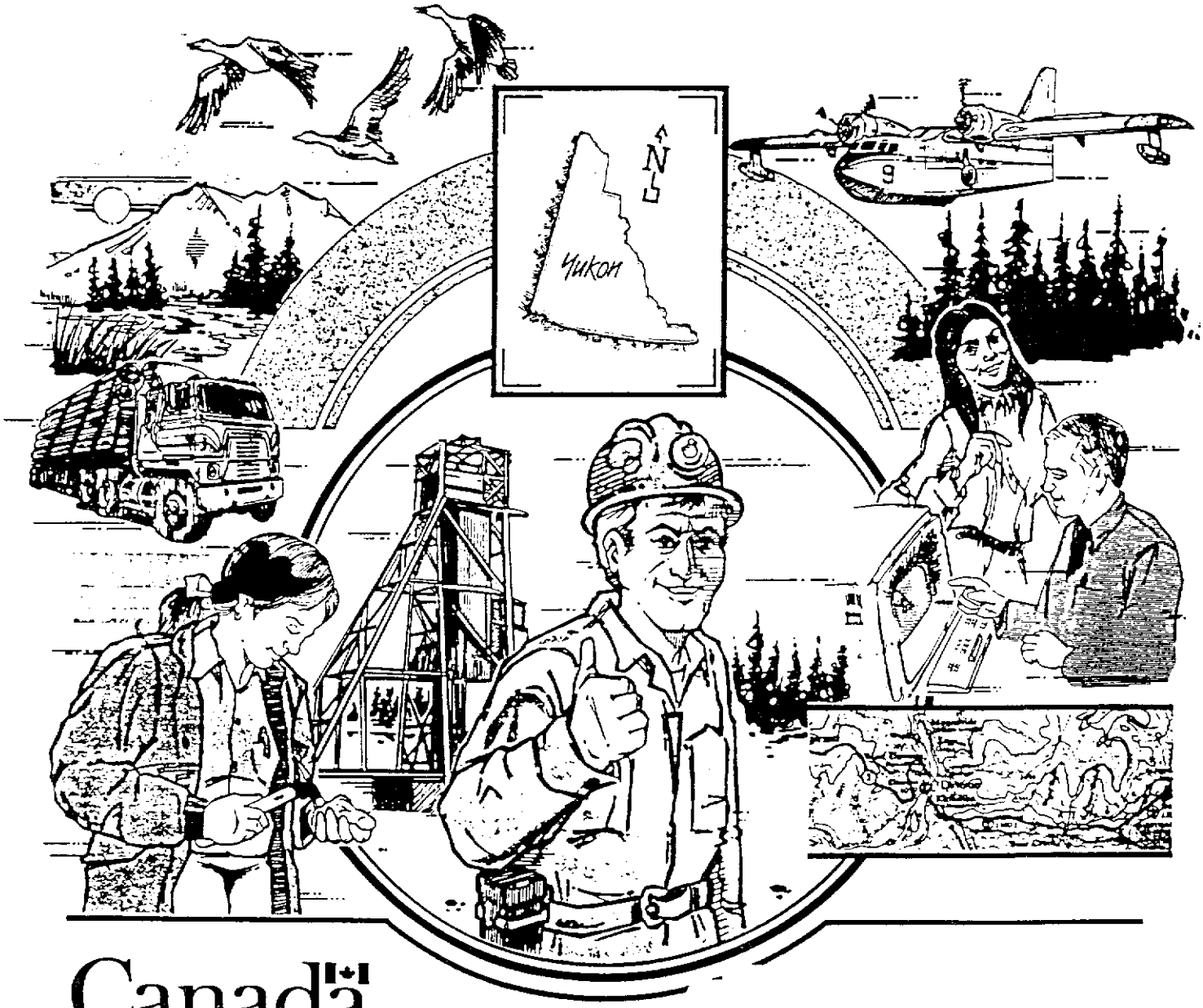

Canada

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Although it is more than eighty years since the world's last great gold rush – the Klondike – the word Yukon still brings to mind buckets of nuggets, the Chilkoot Pass, and Dangerous Dan McGrew. As a major producer of placer gold, Yukon Territory ranks well down the list; its notoriety was established for other reasons – advanced communications technology and the fact that the rush occurred during a severe depression.

Some relative production figures in millions of ounces of placer gold compared with the Yukon's 12 are: Cariboo 3, Australia 13, Alaska 20, and California 48. Unlike placer fields in more temperate climates, however, which have been largely taken over by more familiar industries, the Territory holds a good deal of potential in a land that has little to offer but minerals. If the placer operations proposed for 1980 are implemented, then the Klondike Rush may be relegated to the position of the world's second-last great gold rush.

NATIVE DISCOVERY OF COPPER

Placer mining had been carried on in the Territory long before the gold rush of 1898.

The first placer miners were undoubtedly the Indians who recovered native copper from Kletsan Creek at the headwaters of the White River near the present Alaska-Yukon boundary.

Their mining methods were understandably primitive: the gravels were stirred with caribou horns and any visible nuggets picked out by hand. Although production was probably minimal, by the time the first white men arrived, copper had become a valuable trading commodity throughout much of the Pacific Northwest for use in weapons, tools and ornaments.

When the Russians discovered and claimed Alaska in 1741 the Hudson's Bay Company was already exploring westward through Rupert's Land from eastern Canada. Both the Russians and the H B C were interested almost exclusively in the fur trade. Eventually a boundary had to be established between them, so negotiations between the Russians and the British started in 1824.

As A.A. Wright points out in his excellent history *Prelude to Bonanza*, the treaty of 1825 that resulted was to have a profound effect on the future of the Yukon. The Russians insisted that the eastern non-coastal boundary of Alaska be the 139th meridian, but in exchange for concessions in the Alaska "Panhandle", they agreed to the 141st. Longitude 139°W passes through King Solomon Dome and Burwash Landing; had this been defined as the boundary, the Klondike Gold Rush would have taken place in Alaska!

FIRST WHITE MEN IN YUKON

During the Russians' 126-year stay in Alaska, they did not explore inland as far as the present Yukon Territory. In fact, they did not ascend the Yukon River as far as the Hudson's Bay post at Fort Yukon until 1863. The first white men to set foot in the Yukon were apparently members of the British Navy - Admiral Franklin and his party - who reached the Arctic coast in 1826. The purpose of their expedition was to map the area and to prove (finally) there was no Northwest Passage to India. Franklin's report on the area, however, was unintentionally responsible for the accelerated exploration of the northern Yukon.

In ascending the lower part of "Alexander Mackenzie's River" in 1827, 38 years after Mackenzie, Franklin took the wrong channel and found himself on a river which would later be named the Peel. His report that most of the natives were wearing beautiful furs prompted the Hudson's Bay Company to investigate.

Meanwhile (circa 1828) the same company was exploring the southeastern Yukon: John McLeod had already ascended the Liard and Frances Rivers as far as Simpson Lake. Trading posts or forts were established by Robert Campbell during the following twenty years: at Frances Lake in 1842, at Pelly Banks in 1845, and at Fort Selkirk in 1848. In the north, other company employees built Peel's River Post (Fort McPherson), N.W.T., in 1840, La Pierre House on the Bell River in Yukon Territory about 1842, and in 1847, Fort Yukon at the mouth of the Porcupine River, over 100 miles inside Russian territory.

Ostensibly, these activities had little to do with mining but in fact, they established access routes, basic geographical information and

supply depots for the prospectors who would follow.

EARLY GOLD DISCOVERIES

It was HBC explorer Robert Campbell who first reported gold in the Yukon at Fort Selkirk about 1850. (The original fort was on the south bank of the Pelly across the Yukon River from its present site). Campbell saw gold on a gravel bar in front of the fort but was apparently not impressed. (This may have been the same bar that Robert Henderson rocked three ounces of fine gold from in 1894).

Between 1848 and 1858 there had been three major gold rushes in the world — in California, Australia and the Cariboo — therefore there were many experienced prospectors searching for new placer deposits.

In 1861 gold was discovered on bars in the Stikine River; this area was adjacent to the Yukon and foreshadowed penetration of the Territory by miners. The Russians, although they had never shown any interest in mining, sent the corvette *Rhynda* to ensure that the mining was not being carried out in their territory, as the Crimean War five years earlier had not helped Russo-British relations.

The following year at Fort Yukon, Reverend McDonald reported gold which he could have gathered with a spoon on a small river not far from Fort Yukon. This was undoubtedly "The Preacher's Creek", a fork of Birch Creek in the Circle gold fields. not rediscovered until 1893.

Frederick Whymper, in an account of his explorations in 1866 and 1867 on behalf of the ill-fated Collins Overland Telegraph line to Siberia, noted that "tiny specks of gold had been found by HBC men in the Yukon". He did not elaborate.

Events in 1867 were to have far-reaching effects on the Yukon. To the horror of its populace, the United States purchased Alaska from Russia, which heaved a sigh of relief. Meanwhile, a confederation was formed uniting all British lands in North America. The new Canadian Parliament opened negotiations the following year to buy Rupert's Land (i.e. the bulk of the present Canadian territory) from the HBC. A settlement, however, was not reached until 1870, so the Yukon remained in HBC control until that date.

PROSPECTING PARTIES REACH THE YUKON

By 1872 the Cariboo gold rush had cooled and prospecting parties struck out in search of new pay gravels. Two of these parties chanced to meet on the Liard at Nelson Forks and decided to join forces.

Three members were to become famous in the history of the Yukon: Arthur Harper, Leroy McQuesten and Albert Mayo. Prospecting the Liard proved too slow and laborious, so they decided to drift down the Mackenzie and enter the Yukon via Rat Pass and the Porcupine. (They were probably unaware that prospectors had preceded them up the Liard and found paying bars above the mouth of the Smith River in British Columbia). Harper reported that they found colours on the Liard, nothing on the Mackenzie, "fair prospects" on the Peel, some colours on the Porcupine, and finally, "colours everywhere" on the Yukon.

Immediately upon arriving at the Yukon River in 1873, Harper undertook an expedition up the White River to investigate the reported source of native copper, a sample of which had been shown to him by an Indian at Fort Yukon. This trip was unsuccessful. At the same time the Liard prospectors, who had wintered with the bar miners on the Stikine, discovered rich creeks at Dease Lake. By 1874 there were 1,500 miners in the area and predictably, many of these formed parties to prospect the surrounding regions.

One such expedition ascended the upper Liard into Yukon Territory. At Sayyea Creek they discovered coarse gold in 1874—the first in the Territory. The deposit was not rich compared to Dease Lake: four men worked for 115 days to recover 77 ounces including some one-ounce nuggets. The remote and inhospitable nature of the region caused much hardship for the twelve-man party and after four of its members died of scurvy (on Scurvy Creek) the diggings were abandoned.

Similar parties prospected on the Frances, Yusesyu and Hyland Rivers but found no economically viable deposits. One exception was the mouth of the Finlayson River on Frances Lake

where a miner recovered about $8 or $9 per day –probably about wages if the high cost of supplies was considered. In any event, this miner stayed a very short time on this deposit in 1876.

FORT RELIANCE

Back on the Yukon River in 1874, McQuesten and Mayo–unaware of the Dease Lake strike –were building a trading post at Fort Reliance, about five miles downstream from the present Dawson City. The first steamboat had appeared on the river, so supplies for the prospectors and traders had been put on a more reliable footing. Harper and McQuesten had little time for prospecting but found "good prospects" on bars of the lower Sixtymile River in 1877. They sent "Outside" for mercury to recover the fine bar gold but apparently never found time to develop their prospect. In the meantime, Harper wrote off White River as a placer stream.

OPENING THE CHILKOOT PASS

Until the 1870s, access to the Yukon had been via the Yukon, Porcupine and Liard Rivers because the most obvious route—the Chilkoot Pass—was guarded by fierce Chilkat Indians. Sometime between 1875 and 1878, however, a prospector named George Holt managed to slip past the Chilkats into the Territory. On his return to Sitka he reported he had walked to Marsh Lake, up the McClintock and over to the Teslin where he found course gold. His story was somewhat sketchy and he was killed by Copper River Indians in Alaska on his next prospecting trip before he could give more details, however, it prompted a group of miners to ask the U.S. Navy to negotiate with the Chilkats for access through the Chilkoot. Permission was granted in 1880 and the first prospecting party entered the Yukon with Chilkats as packers and guides as far as Lake Lindeman. They built boats there, descended the Yukon River, and worked their way up the Teslin. Very little gold was found and the party returned to the coast for the winter.

The next party over the Chilkoot ascended the Big Salmon River to Quiet Lake in 1881. They found colours along the length of the river and a few paying bars to mine. They also mined a bar at the mouth of a small creek entering the Yukon River below Marsh Lake but were able to recover only $2.50 in gold per day. The location of this creek was well documented and today it is the one on which "Black Mike's" tourist gold panning operation is situated.

The following year, in spite of the gold strike at Juneau, twenty miners left that settlement and climbed the Chilkoot. They prospected the Pelly River thoroughly at least as far as Hoole Canyon but results were less than spectacular. Twelve men, instead of returning to the coast, drifted to Fort Reliance for the winter. The social gatherings or meetings they held there most evenings became the nucleus for the Yukon Order of Pioneers. At one of these meetings Leroy (Jack) McQuesten was elected mining recorder.

GOOD PROSPECTS ON THE STEWART RIVER

During the summer of 1883, as Lt. Schwatka's party rafted the Yukon River to the Bering Sea, these miners worked bars on the Fortymile and Sixtymile Rivers with mediocre results. Four men tried bars on the Stewart and reported very encouraging prospects. Most of the men who had wintered at Fort Reliance returned to the coast that fall but a few remained, among them Joseph Ladue and William Moore, who were to leave their mark in the history books of the Yukon. Unfortunately, McQuesten's supply steamer failed to arrive from St. Michael and the entire Fort Reliance population was forced to drift to the mouth of the Tanana for the winter.

In 1884 miners again prospected the Pelly, Teslin and Yukon Rivers. This time they found a rich bar—Cassiar Bar—which paid about two ounces per man per day. News that the six men who mined it recovered between $200 and $900 in gold each for the season (from 15 to 60 ounces) would bring more miners in from Juneau the following spring.

The Stewart River bars had proved rather disappointing in 1884, but the next year saw the discovery of Chapman and Steamboat bars. While miners twelve miles up the Stewart near the mouth of Simmons Creek were making only five dollars a day per man, the six men on the upper bars recovered $3,500 to $6,000 each for the season.

Even Jack McQuesten made a special trip from Fort Reliance to see for himself and in five days he rocked for and recovered fifteen ounces. That winter fifteen miners stayed at Fort

Reliance. This time the news that reached Juneau would prompt over 100 miners to climb the Chilkoot in the spring. In anticipation, Harper and McQuesten moved their trading post to the mouth of the Stewart.

The summer of 1886 saw increased activity on all the proven river bars, especially the Stewart. Near the end of the season two disappointed Stewart bar miners drifted down-river and found course gold on the Fortymile a few miles inside Alaskan territory. Discoveries followed on the Canadian side and the Stewart bars were virtually abandoned. With remarkable patience, McQuesten and Harper packed up their brand-new post and moved down-river to build yet another at the mouth of the Fortymile. The mining industry in the Yukon was finally firmly established, and the following season would see more than 300 miners on the Fortymile.

THE YUKON EXPEDITION

The most notable event in 1887 was the start of the Canadian government's "Yukon Expedition". Three of Canada's most experienced and dedicated men led these exploratory journeys: Dr. George M. Dawson and R.G. McConnell, officers of the Geological Survey of Canada, and William Ogilvie, one of the Department of the Interior's most qualified surveyors.

Dawson and McConnell ascended the Stikine to the Cassiar gold fields and Lower Post, surveying, mapping geology and reporting on the Cassiar placer operations. From the Cassiar fields, Dawson followed the old HBC route past Frances Lake to Fort Selkirk, thence up-river and over the Chilkoot. McConnell descended the Liard and Mackenzie Rivers to Fort McPherson. He followed the HBC route to Fort Yukon, travelled up the Yukon River and left via the Chilkoot in 1888.

Ogilvie entered the Yukon by the Chilkoot and carried a traverse to the Yukon River below Forty Mile. During the winter of 1887/88 he established an astronomical observation post and defined the Yukon-Alaska boundary. This expedition collected more systematic geological, topographical and resource information in two years than had been documented in the previous fifty.

In his report, Dawson predicted that the discovery of major placer deposits "may be expected to occur at any time." (This prediction came true nine years later, and the town of 25,000 which grew at the mouth of the Klondike was named in his honour.) Ogilvie and McConnell returned to the Yukon several times in later years, Ogilvie as Commissioner and McConnell as the most prolific writer among the early geologists. Ogilvie, although no miner, suggested the "burning-down" method of reaching bedrock through the permafrost on the Fortymile diggings. As a senior government official, he received constant complaints from the miners about the unfairness of the mining laws in the Yukon relative to those just across the border on the upper Fortymile. He also commented that the laws were made in Ottawa by people who had little or no knowledge of conditions or problems. This has a familiar ring even today.

MINERS' MEETINGS IN THE NORTH

Miners' meetings apparently originated during the California gold rush in the late 1840's. At these rather informal gatherings, local miners ruled on all mining questions including the size of claims, fees, and use of water. They even arbitrated disputes and levied fines. (Since the meetings were usually held in the Forty Mile local saloon, fines often consisted of rounds for the house.) On occasion, they sentenced miners to flogging, exile or even death. The Canadian government frowned on these meetings, although several were held in the Yukon at Forty Mile and the mouth of the Stewart. The Alaskans decided that a claim was to be 1,320 feet square (the size stipulated by the U.S. Mining Law of 1872) and the recording fee two or three dollars. The Canadian regulations required a fifteen dollar free-miner's licence and a recording fee of fifteen dollars for a 100 foot claim. However, Americans were allowed to stake and mine in the Yukon, while Canadians had to become American citizens in order to mine in Alaska.

Once clause in Canada's regulations would be just as unpopular today as it was then: if for any three consecutive days during the mining season a claim was not worked, it was considered abandoned and it accordingly lapsed.

Forty Mile settlement circa 1890 (Yukon Archives—Alaska Historical Society Collection)

The activity in 1887 was not restricted to the Fortymile; bar miners were busy in other areas as well. The Macmillan River proved to have no good prospects, the Pelly was marginal except for a section below Granite Canyon where ten to twenty dollars a day could be recovered, and one miner made eighteen dollars a day on a bar at the mouth of a river he thought was the Ross. On the Yukon, Dawson reported miners all the way from six miles about the Nordenskiold to the Teslin. Except for Cassiar Bar, few of these were paying bars. (At that time a paying prospect was considered one which yielded a minimum of fourteen dollars per day per man or about nine tenths of an ounce). On the Teslin and Nisutlin Rivers only fine gold was found. Ogilvie reported some prospects paying eight to ten dollars per day "even on streams flowing into Lake Bennett" and "many colours" on a Thirtymile River bar six miles below Lake Laberge. Miller Creek on the Sixtymile was prospected but obviously not very thoroughly since no viable deposits were found. Other non-economic streams reported by Ogilvie were "a left-limit creek a short distance above Fort Selkirk" (Wolverine?) and what from his description was probably the Selwyn River.

WHALERS EXPLORE FROM THE NORTH

In 1888 the first whaling ships from the New England states wintered at Herschel Island off the Yukon's Arctic coast. Rather sketchy stories suggest that several seamen deserted their ships and headed south to the Fortymile, but if they were true, the men probably perished as they failed to arrive. It was not until 1893 that well-documented reports of deserters striking out for the Circle, Alaska, goldfields reached the ears of Canadian officials. Stories, never verified, related how these men found gold on three Arctic rivers: the Malcolm, Firth and Babbage.

The next few years brought no good news for the miners unless the construction of ten saloons at Forty Mile qualified. In 1892 however, Miller and Glacier creeks were discovered and proved to be very rich. Adjoining creeks Bedrock and Big Gold were more mediocre.

The following year the Circle goldfields in Alaska were rediscovered by two of McQuesten's "Russian halfbreeds" and many miners drifted down the Yukon to participate. The activity on the Sixtymile prompted Harper to build a trading post on Ogilvie Island at the mouth of that river and place Joseph Ladue in charge.

By 1894, the population of Forty Mile had grown to 260 and another 500 men were on their way from Dyea. These men brought the first horses to help work the mines: the animals were literally dragged over the Chilkoot and were in poor shape when they arrived. Nevertheless, the Indians were quite impressed with the white man's "big dogs."

CONSTANTINE AND THE NWMP

Another first for the Yukon was the arrival of Inspector Charles Constantine of the North West Mounted Police, who had been sent North to report to Ottawa on conditions in the Territory. He reported that the Canadian part of the Fortymile was almost worked out and Clinton Creek had proved to be poor, in fact a great number of the recent influx of miners had moved downriver to the Circle area. The local population - approximately half American and half Canadian—on finding a new symbol of authority in their midst, renewed their complaints about the mining laws. Constantine was instrumental in having the length of a claim increased to 500 feet. He also overruled a decision by a miners meeting, and these institutions disappeared forever from the Canadian scene.

Veteran prospector Robert Henderson arrived during the summer. Finding the Fortymile and Sixtymile rivers too crowded, he decided to prospect the Indian River. He and two partners had prospected the Pelly earlier with discouraging results; the partners decided to turn back,

leaving Henderson to prospect alone. Grubstaked by Ladue, he systematically explored the Indian and its tributaries during 1894 and 1895. Australia Creek was practically barren so he turned downstream to the creek where he found the best prospects, naming it Quartz Creek.

In 1895 Constantine returned to Forty Mile with twenty members of the North West Mounted Police to construct their new headquarters, Fort Constantine. At a time when wages on the creeks ranged from six to ten dollars a day, the Mounties were paid only fifty cents. Upon completion of the barracks, the police, unable to afford firewood at eight dollars a cord, went upriver and cut 315 cords for the winter. Constantine wrote to Ottawa asking higher wages for his men, and at the same time, suggesting several changes to the mining regulations which would benefit the miners. As a result, staking procedures were simplified, the staking age was dropped to 18 years from 21, and a prospector discovering a new creek was allowed two 500 foot claims rather than one. The daily wage for a constable was raised to one dollar.

Ogilvie noted that the improved staking rules had little effect on the calibre of staking: "less than twenty-five percent of claims were staked in any way approaching the prescribed manner."

During the winter of 1895-96, 350 miners worked on Miller, Glacier and Bedrock creeks. Most of the miners on the Fortymile were on the Alaskan side, although the Canadian portion of Moose Creek was also mined. The estimated production of 1894 and 1895 was about 18,000 ounces per year, and the forecast for 1896 was about the same.

Meanwhile, Robert Henderson spent the winter of 1895-96 "burning down" on Quartz Creek; his clean-up in the spring totalled forty ounces. Convinced that he was finally in a gold-bearing area, he ascended Quartz Creek and crossed the divide into a creek he called Gold Bottom. There he found his best prospect to date.

Henderson was not the only prospector exploring new country: in 1895 miners working their way up the Stewart and McQuesten Rivers discovered Haggart Creek. They reported some gold in most of the creeks entering the McQuesten from the north; the river bars themselves yielded only fine gold for ten miles above the Stewart. It may have been then the Pelly miners decided there were no paying prospects on that river although most of the streams entering the Pelly from the south between the Lapie and Campbell Creek were later found to contain gold. The best prospects were between the mouth of the Hoole and Hoole Canyon as well as some tributaries of the Hoole. A paying prospect was considered in those days gravels yielding not less than three-quarters of an ounce per cubic yard, since two men on a rocker could only process one-and-one-half to four yards per day.

The year 1896 proved to be the most important one in the history of the young Territory.

Forty Mile had become fairly established as the commercial and administrative centre for the mining industry and was becoming relatively civilized. Residents welcomed the arrival of forty head of cattle which had been driven over the new Dalton Trail from Haines to Fort Selkirk and then rafted down-river. A sawmill had been shipped in via St. Michael and its operators were in the market for saw logs since most readily available timber had already been cut.

BONANZA!

George Carmack and two native companions, salmon fishing at the mouth of the Klondike, decided they would become part-time loggers. About that time Henderson stopped at Carmack's camp on his way back to Gold Bottom, told them of his good prospects in this new area east of the Yukon, and invited Carmack (but not the Indians) to stake on his creek.

Carmack promised to visit Gold Bottom reluctantly; he was more interested in logging. Accordingly, he sent Skookum Jim up Rabbit (later Bonanza) Creek to look for good trees and to check whether logs could be floated down it. In the course of this task Jim saw colours in the creek near where 66 Below Discovery claim would soon be located (near Sourdough Gulch). Carmack, the virtual director of the party, refused to be swayed by Jim's enthusiasm. He decided against pursuing either the prospecting or logging venture, and the group settled down to fishing again. A few weeks later, Carmack changed his mind again, deciding that they

would visit Henderson and do some prospecting. On their way up Bonanza, they found a ten-cent pan near the place they would later make their discovery. Their visit with Henderson proved a disappointment both with respect to his creek and his racist attitude toward Skookum Jim and Tagish Charlie, and they returned to Bonanza on August 14. Jim was sent ahead to

The 1.5 pennyweights of gold in this pan would have been worth a dollar to George Carmack. In the "Dirty Thirties" it was worth $1.75, and today, it's worth forty dollars. (George Gilbert photo.)

hunt and succeeded in shooting a moose. While waiting for the others he found the best prospect yet and the three amateur prospectors spent the next two days testing the creek for the heaviest concentrations of gold. On August 16, Carmack decided they should stake, and the three argued all day about who was to have the discovery claim. Carmack, half-Indian himself yet suddenly taking Henderson's Archie Bunker attitude, insisted the mining recorder would never record a discovery claim for an Indian. When they staked the next morning, Carmack's name was on Discovery but he had agreed to assign half of it to Jim.

STAKING THE KLONDIKE

In the next three months 500 claims were staked on the Klondike creeks and the Yukon entered a new era. Bonanza and Eldorado proved to be two of the richest creeks ever found. For example, Eldorado No.17, a 425-foot claim, yielded 125,000 ounces (4.3 tons of gold worth $90,000,000 at 1980 prices). Lowe's 86-foot fraction just below Grand Forks produced more than 400 ounces for each foot of creek and further gold was recovered later by dredge.

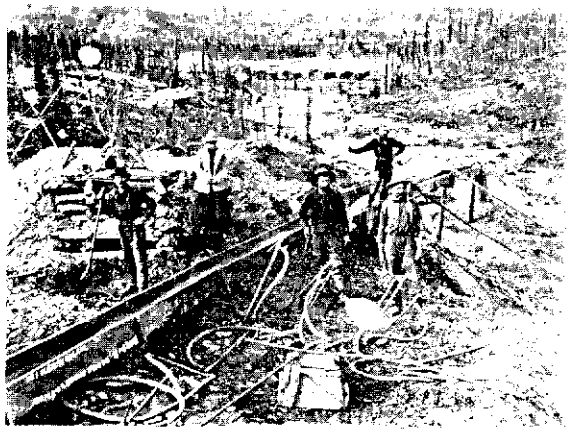
It was almost a year before news of the strike reached the "outside" and by that time most of the creeks had been staked by local miners. Forty Mile and Circle City were essentially deserted and even the rich Sixtymile creeks were abandoned for a time. The influx of thousands of would-be miners over the Chilkoot and other routes was not altogether due to the electrifying news: North America was suffering a severe depression and unemployment was at an all-time high. Few of these latter-day Argonauts would find claims, let alone fortunes, and many left the Territory before long. Many stayed, however, some to prospect widespread areas of the Yukon and Alaska, others to supply the labour force for the placer mines.

MINING METHODS

The mining procedures before Bonanza and the first few years after were very labour-intensive. The cost of bringing it 4,000 miles by steamship precluded the use of expensive machinery. Two mining methods prevailed, underground mining and open cut. The former made more sense since most of the excavation could be accomplished during the long, cold winters when wages were lower than usual and recovery of the gold could be effected during the spring runoff.

The procedure was usually as follows. Thawing by fire, a shaft was "burned down" to bedrock, and the frozen muck was removed by pick, shovel and windlass. (This system worked well only in the winter when the temperature difference between the air in the shaft and the surface created a good draught. In fact, many miners were incapacitated by smoke inhalation or killed by poisonous gases while trying to "burn-down" during the summer). Once bedrock was reached the deposit was drifted from the shaft; again wood fires were used for thawing. About a quarter cord of wood was required for each cubic yard of muck or gravel. Miners started excavation of the drift walls at the max-

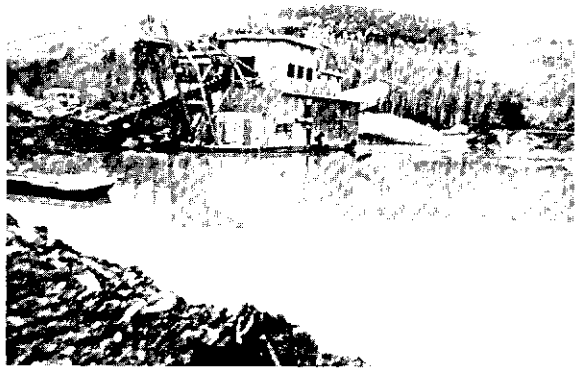
imum distance from the shaft, working back to it. Two miners could bring three or four cubic yards to surface in a long working day. The frozen roof of the workings during winter was exceptionally competent and required few, if any, supports: McConnell cites an unsupported 140 foot by 230 foot "room" on Dominion Creek. When summer arrived, these rooms usually collapsed but by that time the miners were busy sluicing on the surface.



Typical Placer Operation: Happy Gulch-Hunker Creek circa 1903 with shaft and windlass and sluice boxes, thawing equipment in foreground. (Yukon Archives—Adams, Larkin and Cantwell Collection)

About 1902 fire-thawing was superseded by more efficient (and safer) steam thawing, a technique which could be used year-round (thawing via heated rocks dropped in the shaft had been discontinued in the 1880's). In 1903 McConnell reported that an average claim required fifty horsepower (wood-generated steam) for thawing, hoisting and pumping sluice water. The capital cost was from $5,000 to $7,000 and the daily operating cost, including labour, was about $100 for 50 to 60 cubic yards thawed, mined, hoisted and sluiced. (Heavy machinery was not readily available until 1900 when the White Pass railway was completed to Whitehorse). The introduction of machinery about 1901 coincided with the depletion of the exceptionally rich deposits; it is unlikely that the lower grade gravels could have been worked profitably much longer by hand methods. Before the advent of machinery, open-cut mining costs were often prohibitive unless the overlying waste materials were very shallow. After about 1904 little underground work was done, almost all mining since has been by such open-cut methods as dredging, hydraulicking, bulldozer, loader and scraper operations. Today, ground rich enough to mine by hand methods is practically nonexistent even with the dramatic increases in gold price.

Before Bonanza, wages on the Fortymile and Sixtymile had been six to ten dollars a day. In 1897 they were fifteen dollars, but after the arrival of the stampeders, an employer in the Klondike could hire a man for $4.50 and board per ten-hour day. Board was expensive in the Yukon—it cost almost a dollar a day to feed a man. The only item which remained constant was the price of gold: $20.67, or about $16 per raw ounce average (the price of an ounce of gold varied only a few cents either side of $20 from 1792 to 1934). As labour and supply costs dropped, "poor prospects" suddenly became profitable and regional prospecting was intensified.



Renovated bucket-line dredge on Clear Creek (1980). This small dredge will process about 3,000 cubic yards per day.

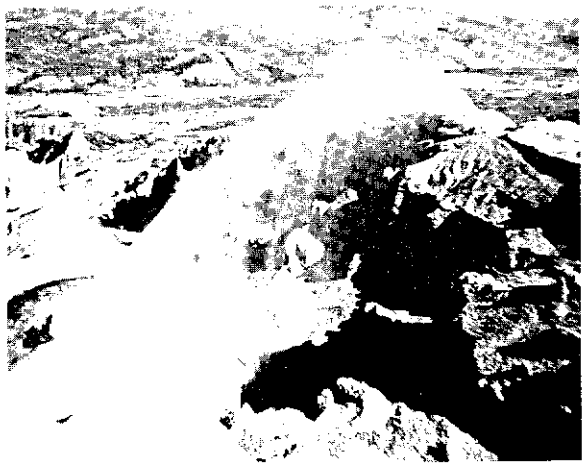
THE DREDGES

Most dredging operations did not begin until after 1904 with one exception: a small steam dredge using three-and-a-quarter cubic foot buckets was put into production on Cassiar Bar below Hootalinqua in 1898. With an average production of five cents in gold per cubic yard dredged it was a financial disaster, and bar dredges in the Yukon since that time have suffered a similar fate, for bar diggings rarely exceed a foot in depth. The Cassiar Bar unit was moved to 42 Below Discovery on Bonanza, a half mile below Boulder Creek in 1899, and two years later to Discovery. In 1911 it was moved to the Circle district where it proved too small to dig bedrock and was abandoned on Mastodon Creek.

When the first large dredge appeared in the Klondike Valley in 1905 the independent miner had practically disappeared from major creeks. The lower-grade gravels required a massive investment for machinery and installations and the gold fields were rapidly taken over by mining corporations. Despite vigorous opposition from

the men Ogilvie called "gumboot miners," Ottawa granted huge blocks of land known as hydraulic concessions to several mining promoters — even over existing claims.

Although this practice was later discontinued those concessions already granted were allowed to stand. The Anderson Concession on Lower Hunker, granted in 1898, did not lapse until 1969, and the famous Boyle Concession in the Klondike River Valley remained in good standing from 1900 to 1969. Ottawa's scheme to attract major companies to the gold fields was subsequently proved to have been the right course, even if it was executed in a somewhat ham-handed manner. It meant that placer mining could settle down as an industry based on sound engineering principles, and the boom and bust days were over.



Hydraulicking bench gravels on the lower Klondike River. (Pat Morrow photo.)

DISCOVERY OF BENCH DEPOSITS

In 1897 gold was discovered in the White Channel gravels on Gold Hill several hundred vertical feet above Eldorado Creek. At first the miners paid little attention to the find, because it was made by an inexperienced prospector or "cheechako". Yet these high-level gravels, which occurred in tremendous volumes throughout the Klondike, eventually yielded most of the gold that was mined in the Yukon. Called bench deposits, they could not be mined by dredges, and underground methods were costly, inefficient and hazardous. Hydraulic mining, although ideally suited to the task, required vast amounts of cheap water which simply were not available in the Klondike region.

The first proposal for bringing water to the gold fields under sufficient head envisioned tapping the headwaters of the South Klondike River, 130 miles upstream. This scheme was later abandoned in favour of a ditch-and-siphon system to bring water from the Twelve Mile River drainage seventy miles away. When the Twelve Mile project was completed in 1909, it included a hydroelectric plant for the benefit of the ten operating dredges. To the companies pumping costly water up to the benches, the Twelve Mile Ditch was very welcome indeed.

The Yukon or Twelve Mile Ditch. A section of 6 foot by 4 foot flume, part of the 70-mile aquaduct, in 1908. (Yukon Archives—Schellinger collection)

Empirical figures from hydraulic operations in California and Cariboo placer fields had shown that about one-and-a-half gallons of water were needed to move and wash one pound of gravel. McConnell estimated reserves of bench gravels in 1906 well in excess of 100 million cubic yards. At 2,700 gallons per yard, this represented an appreciable amount of water: the Twelve Mile Ditch, not abandoned unitl 1933, supplied barely enough.

FURTHER EXPLORATION IN THE TERRITORY

While Klondike area mining held the attention of the mining fraternity and the general public, the prospectors were not idle. After Bonanza many of the "gold-rushers," unable to find claims in the Klondike, set out to find other placer fields in the Territory and Alaska. Experienced Yukon prospectors also joined in the search, among them Robert Henderson. He had neglected to record his discovery claim on Gold Bottom and had been evicted by more law-abiding stakers. Swallowing his bitterness, he began prospecting tributaries of the Stewart River, possibly Henderson and Black Hills Creeks.

In the same year as Bonanza, Jack Dalton of Dalton Trail fame mentioned reports of gold in the "Dassar-Dee-Ash." Further documentation was not forthcoming and it can only be assumed that he referred to either Alder, Shorty or Squaw Creek near the present day Haines Road. Johnson Creek, a tributary of the McQuesten River, was discovered about the same time as Gold Hill's bench placers.

About 1897, Ottawa had imposed a royalty on gold that was mined in the Territory. (In 1898, "Yukon Territory" had replaced the old name "Yukon District of the Northwest Territories." Yukon was now a separate political entity). Apparently based on fantastic reports of Bonanza clean-ups, Ottawa decided that royalty to the Crown would be ten percent of gold in excess of $5,000 per year and twenty percent in excess of $5,000 per week. It was not until 1904 that the government insisted that royalty be paid in currency rather than raw gold, but by that time royalty had been dropped to 2.5 percent in a measure to attract dredging companies. But royalties were the least of the prospectors' problems.

In 1898 the Stewart River tributaries were discovered: Scroggie, Barker, Henderson and (surely) Clear Creek. Slightly up-river were Thistle, Kirkman, and Ballarat. Miles from the Klondike, prospectors found Duncan and Dublin Gulch in the Mayo area, Hayes Creek in the Dawson Range, and Alder Creek in the Dezadeash.

J.B. Tyrrell while traversing the Dalton Trail noted that colours of gold could be found on the trail everywhere creeks cut the quartz-bearing schists. Good prospects were found halfway between the Coast Range and Fort Selkirk according to Ogilvie: this could be somewhere between Albert Creek and Maloney (or either). A two-man prospecting party on the South Big Salmon River discovered course gold on a creek they named "Livingstone." One of the men was George Black, later to become Commissioner.

In 1899 Shorty Creek in the Dezadeash was found and although unrecorded, probably other creeks in the area were discovered. In this year Nansen Creek was found but, for some reason was not staked and mined until about 1910. Strikes in Alaska, meanwhile, siphoned off many Yukon prospectors to those areas; most were inveterate stampeders like their predecessors in the late 1890's.

THIRTY-SEVEN TONS OF GOLD

The year 1900 was to be Yukon's biggest year ever for gold production.

Although most of the inhabitants were unaware of the outstanding production of gold, the British Yukon Navigation Company received over thirty-seven tons of gold for shipment "Outside." The last people to hear about this record were the prospectors, who were busy elsewhere.

The Macmillan River, considered a barren stream by early prospectors, received some attention in 1902 when course gold was found on Russell Creek.

The year 1903 saw discovery of the Kluane goldfields in spite of the loss of miners to the Fairbanks rush. Bullion and Sheep creeks in the west of the Kluane district, Fourth of July and Gladstone in the east and the Kathleen Lake creeks in the south all yielded course gold. In the Mayo area, Minto, Highet and Mayo Lake tributaries proved to be viable placer creeks.

Next year Burwash, Tatamagouche and Arch creeks were found in the Kluane country. Most of the streams flowing into the Shakwak valley were found to contain some gold and frequently native copper. Burwash would later produce more gold than the total of the others.

The Teslin prospectors discovered the Boswell River creeks: Little Bear, Machete, Falls and others. They then crossed the divide into Nisutlin drainage where they found good prospects on Sidney and Iron creeks.

About 1905 on the upper Stewart River, prospectors found little encouragement. The bars above the Mayo River were very lean and colours were rare above the mouth of the Beaver. The latter stream was barren although a small creek opposite the mouth of the Rackla carried some course gold. On the Stewart, between Lansing and the Hess, some of the left-limit tributaries provided "good prospects" but little work seems to have been done until 1910.

With the exception of Matson Creek in 1911, few new placer creeks were reported until 1913 when some of the White River tributaries were found, including the Koidern River and the

Tchawsahmon Lake area. Continuing up the White into Alaska, prospectors discovered the Chisana area, and the Tchawsahmon creeks were immediately abandoned.

THE WORLD WARS

In 1915 Rude, Canadian and other Dawson Range creeks were worked. Canadian Creek was found to have considerable wolframite in the concentrate; Dublin Gulch much scheelite. Both these tungsten minerals were in great demand by the steel industry for World War I weaponry, but only Dublin Gulch proved to have economic deposits.

The war had severely reduced the number of prospectors, but those who remained continued to find good prospects in widespread areas of the Territory. The lower Stewart River creeks, tributaries of the Nisling, Klotassin, Jarvis and Kluane Rivers, the Ladue tributaries (Rice, Otter and Deep,) and new creeks in the Sixtymile drainage all proved to have some course gold but no new bonanzas. A short-lived rush on Seymour Creek in the Dawson Range in 1917 resulted in discoveries of marginal deposits there and on Stoddart, Williams and Maurice creeks. Probably many other streams throughout the Territory were prospected and even mined but documentation (if any) is not readily available.

Government reports from 1900 to 1930 dealt with the activities of producing placers more than those of the prospectors. The dredges and hydraulic operations in the Klondike were the mainstay of the Yukon's economy. Probably the most important innovation during those years was the adoption of cold-water thawing. This procedure, developed by Alaskan miners in 1919, substantially reduced the cost of thawing so that previously marginal gravel reserves became economic. Several small dredges were put into operation in areas other than the immediate Klondike: on the Stewart in 1902 and 1911, on the Fortymile about 1912, on Miller Creek in 1912, and on Highet Creek in 1922. Only the Miller and Highet dredges made a profit. Prospecting in the 1920's reached a low ebb: the most notable find was Squaw Creek on the Tatshenshini but like the Fortymile, the best deposits were outside of the Territory's boundaries.

Then in January 1934, the U.S. government set the price of gold at $35.00 – almost double the old price. Existing operations were intensified and another wave of prospectors flowed through the Yukon. As in 1898, a Depression initiated this movement of men, but this time they had the advantage of a higher gold price and almost forty years of technological advance.

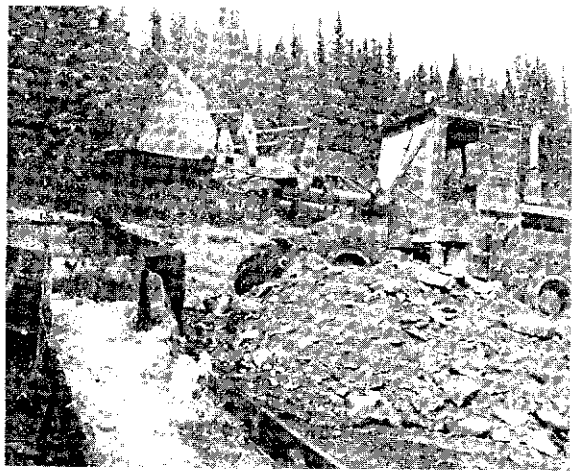
Most of the Yukon placer creeks were reactivated, mostly by hand-mining methods. Many previously marginal deposits could now be mined at profit – two pennyweights of gold per man per day was very good pay. Capital expenditure for basic hand-mining equipment was equivalent to about a half ounce of gold. This new era of "gumboot miners" lasted a few years beyond the outbreak of World War II in 1939 and it was probably during this interval that bulldozer or "cat"-mining became common. In addition to the historically productive creeks, some of the "low-grade" areas mined during the Depression included the Upper Liard, Frances Lake area, Teslin tributaries, left-limit Big Salmon creeks, Dezadeash and Kluane, McQuesten and Stewart tributaries, and many tributaries of the Yukon.

By the end of the war in 1945, the cost of labour and supplies had risen to the extent that most of the creeks could no longer be mined profitably, and mining activity again returned to the proven placer areas. By the end of the 1940's gold mines in all areas of Canada were closing down because of higher costs and the fixed price of gold. The federal government, in a move to aid the remaining mines, introduced a subsidy on gold production. Most placer miners in the Territory took advantage of this subsidy until the rise of the gold price in the early 1970's. Ottawa also amended the Yukon Placer Mining Act to reduce the royalty to 22½ cents per ounce; this royalty remains in effect today.

Some drilling had been done on Hayes Creek during the war, and in spite of the gloomy outlook for placers during the post-war years, some new exploration and mining continued to take place. There was drilling done on the Duke River in Kluane, the Blow River in the Arctic, and Big Creek in the Dawson Range. The Klondike dredges and hydraulics continued to operate and dredging started on Thistle, Henderson, Clear and Big Gold creeks. Little gumboot prospecting appears to have been done.

In the mid 1960's most placer operations had ceased and in 1966 even the giant Yukon Consolidated Gold Corporation shut down the last of its dredges. A handful of miners continued to operate in the Territory but few were able to make a reasonable profit. Most of these operations were man-and-wife teams, old-timers or hobby miners.

The rising price of gold in the early 1970's created new interest in placer again and by 1973 most of the historic producing streams had been restaked. As the gold price continued to accelerate in the late '70s staking and mining increased accordingly. By 1979 not only were most of the known gold-bearing creeks entirely staked but also many streams flowing through the most unfavourable geological settings imaginable. Most of the "prospecting" was done in old mining records.



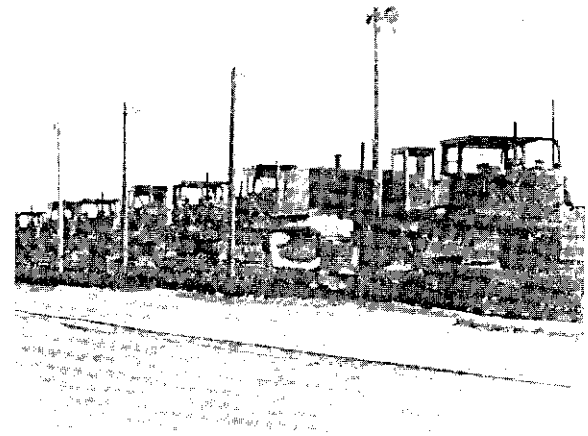
Feeding pay gravels into sluice with front-end loader, 1980. (George Grant photo.)

LOST GOLD MINES

Unlike most mining regions, the Yukon has few lost gold mine legends. Of those that exist, the most notable is of the "Lost McHenry Mine" which was supposedly located somewhere near the headwaters of the Ross, Nahanni or Macmillan rivers. McHenry, a Dease Lake miner in the 1870s, is said to have returned from a prospecting trip in the Yukon with forty pounds of placer gold. That he did not return to his mine and was unsure of its location detracts from the credibility of his story. However, many prospectors have searched unsuccessfully for the deposit since McHenry's time.

OUTLOOK FOR THE 80s

The most notable new discovery is "Kenyon Creek" in the Moosehorn Range, found as a result of quartz vein exploration. This deposit has become a significant producer of placer gold. However, most of the ninety operations in 1979 were on creeks worked at least once by the old-timers.



Part of a trainload of mining equipment enroute to the goldfields, March, 1980. (George Grant photo.)

The outlook for the placer industry in the next decade is bright indeed. Gold prices, although fluctuating daily, remain high; there are more placer claims held at present than at any time in the Territory's history; and the number of pieces of heavy machinery being readied for action is remarkable. Last, but not least, is the veritable army of enthusiastic latter-day-gold-rushers who are determined to make their fortunes in the placer fields. If we take a lesson from Klondike history, some will but most won't.

MAPS OF PLACER CREEKS

Two maps showing placer creeks in the Territory have been prepared in support of this report. The first shows the entire Yukon on a scale of 1:1,000,000 (16 miles to the inch); the second is a composite of the Sixtymile-Dawson-Mayo region on a scale of 1:250,000 (4 miles to the inch.) The maps can be purchased for $1.00 each from the Supervising Mining Recorder's office, Department of Indian and Northern Affairs, 200 Range Road (Takhini), Whitehorse, Yukon, Y1A 3V1.

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The titles in this bibliography have been condensed. Most of the publications listed are out of print, but copies are available for reading either at the Yukon Government archives in Whitehorse or at the Department of Indian and Northern Affairs geology office, 200 Range Road, Whitehorse.

Of the 140 publications which were included in the research for this project, these were chosen for the bibliography because of their historical detail. The best all-round reference on placer mining today is H.S. Bostock's Memoir 284.

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M193	Bostock H.S.	Mining Industry of Yukon	1935
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M50	Cairnes D.D.	Upper White River	1915
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P63-38	Green L.H. & Godwin C.T.	Mineral Industry - Y.T.	1962
P64-36	Green L.H. & Godwin C.I.	Mineral Industry - Y.T.	1963
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1097	Keele J.	...Pelly, Ross,...	1910
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P45-21	Kindle E.D.	Canol Road	
M203	Lees E.J.	Teslin - Quiet Lake	1936
M340	Muller J.E.	Kluane Lake area	1967
M326	Mulligan R.	Teslin map area	1963
P55-21	Poole W.H.	Wolf Lake	
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*B-Bulletin, M-Memoir, OF-Open File, P-Paper

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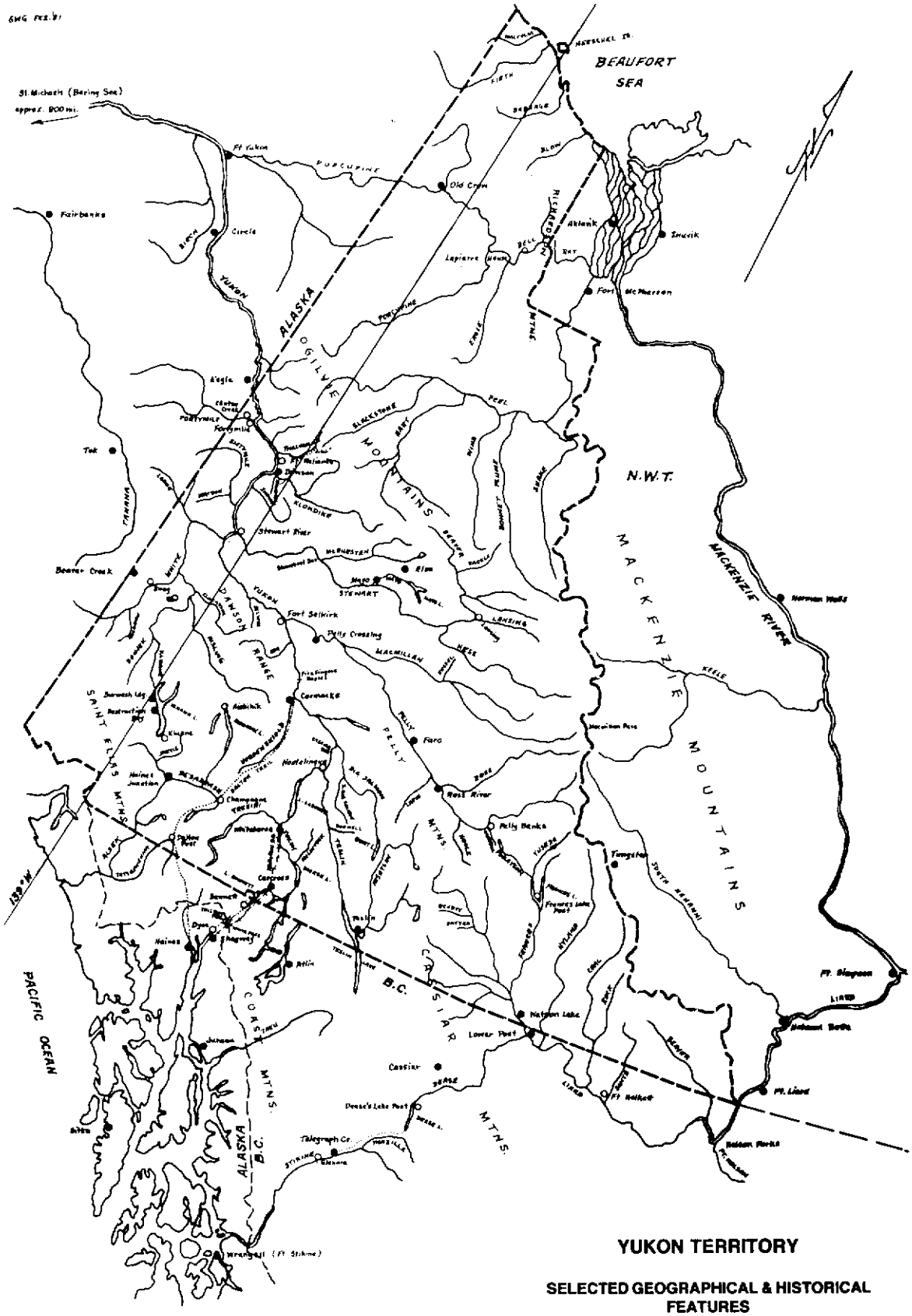

YUKON TERRITORY

SELECTED GEOGRAPHICAL & HISTORICAL FEATURES

● town or settlement

○ " " " (abandoned)

SCALE: 1:4,000,000
(1" = 63 mi. approx.)