The Southeastern Alaska Mining Industry: Historical Overview and Current Status

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Mining has a long and significant history in Southeastern Alaska (Southeast) and has played a major role in the settlement and economic development of the region. Several world-class mineral deposits occur in Southeast, and the industry continues to contribute to the economic diversity of Southeast.

HISTORY OF MINING IN SOUTHEASTERN ALASKA

Early Metal Discoveries

The first mineral location in Southeast was a copper claim in 1867 (Kaufman 1958, Roppel 1991), the year the United States purchased title to Alaska from Russia. Charles V. Baranovich staked that claim on Prince of Wales Island near the Haida Indian village of Kasaan. His Copper Queen claim and adjacent workings led to the establishment of Hadley, a boom town and smelter on the north shore of the Kasaan Peninsula. Baronivich's success led to other copper strikes on southern Prince of Wales Island. In Hetta Inlet, the mining town of Coppermount included a mill facility and a smelter. The Niblack area in Moira Sound saw significant copper mining and construction of ore transshipment facilities. Nearly all of these copper deposits were played out by 1908. In 1915 and 1918, fires destroyed the town of Hadley, marking the end of the copper boom on Prince of Wales Island (Roppel 1991).

Two years after Baranovich made his copper discovery near Kasaan, in 1869, Mix Silva discovered placer gold at Windham Bay south of Juneau. Windham Bay produced gold for several years (Kaufman 1958). In 1872, silver and gold were found near Sitka at Silver Bay, and in 1879, a stamp mill operated briefly there (Kaufman 1958, U.S. Department of the Interior [DOI] 1999).

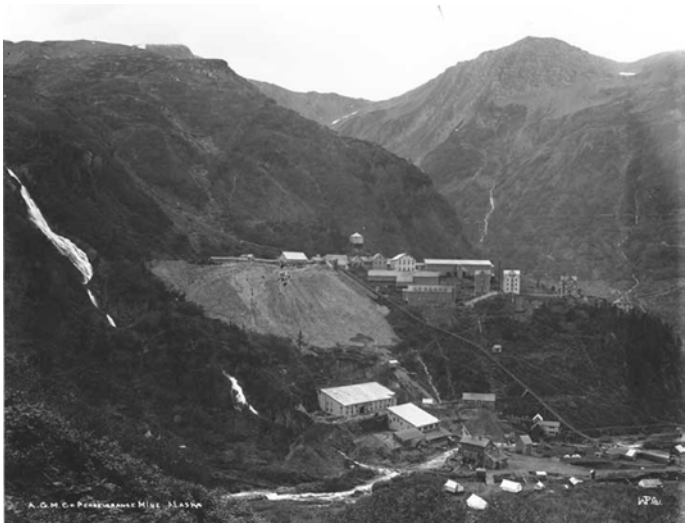

FIG 1. Juneau's Perseverance Mine circa 1914. Juneau mining was active from 1880 until 1944 and produced $80 million in gold, silver, and lead. (Alaska State Library, Winter & Pond, P87-0591)

Mining concerns shifted north and east in 1880 when Joe Juneau and Richard Harris found placer gold near the present-day Juneau, marking the beginning of the most significant mining boom in the region. The Juneau and Harris discoveries led to the establishment of the Alaska Juneau Mining Company, which operated until 1944 and produced more than $80 million (nominal value) in gold, silver, and lead ores (Fig 1). In 1881, John Treadwell began development of the complex of mines across Gastineau Channel from the Alaska Juneau (AJ) Mine. The Treadwell mine produced more than $67 million in gold and silver

before the mine began to collapse inward on itself. The company town of Treadwell included dormitories, hotels, family houses, a power plant, stamp mill, a dining hall and store, and even a large indoor swimming pool (Kaufman 1958, Stone and Stone 1980).

During the glory days of the boom, many steamships would be tied up at the numerous piers in Gastineau Channel, offloading supplies and loading gold ore from the AJ and Treadwell mines, the Alaska Gastineau mine at Thane, and the Silver Queen mine in Sheep Creek Basin (Stone and Stone 1980, Roppel 1991). The Silver Queen, Perseverance, and Silverbow Basin mines (all at Juneau) were consolidated into the Alaska Gastineau mine in 1911 (Stone and Stone 1980).

Of early Juneau area mines, only the AJ mine survived the boom years. The Treadwell mine closed in 1917 after a massive cave-in completely flooded it with sea water. The Alaska Gastineau mine closed in 1921 because cave-ins and the intrusion of water into the mine made the ore unprofitable to mill. Gradually, the Alaska Juneau Mining Company acquired the shuttered mines around it; by 1934, the firm owned most of the immediate Juneau gold properties (Stone and Stone 1980).

Production at AJ Mine peaked in the late 1930s, and 1941 was the mine's last profitable year. In 1942, the federal War Production Board closed all nonessential mines to free men up for the war effort. Although AJ mine was allowed to continue operations, the board regulated mine operations. In 1943, the board attempted a compromise in a wage dispute between the union and mine managers, but the years of profitability were over and the AJ Mine closed permanently the following year (Stone and Stone 1980).

Throughout the Juneau gold mining years, claims were staked and mining ventures launched from Taku Inlet north to Lions Head Mountain on Berners Bay. Although many ventures produced gold and silver, none rose to the stature of the AJ, Gastineau, and Treadwell complexes. Several Lions Head claims were consolidated into what became the Kensington claims, currently owned by Couer d'Alene Mines (Stone and Stone 1980).

The Klondike Gold Rush

When contemporary visitors to the Inside Passage think of gold, they perhaps think not of Windham Bay or even Juneau, but of Skagway and the Klondike gold rush. Although that strike was in the Canadian Yukon Territory, many thousands of would-be gold miners traveled to the Yukon by way of the Inside Passage. They undertook arduous treks from Dyea and Skagway over Chilkoot Pass and White Pass, respectively (Fig 2). The Klondike discovery was in 1896, and by 1898, thousands of men were traveling up the Inside Passage by steamship to Skagway, where they outfitted themselves for the trek over the mountains to the Yukon River. From there they could float to the Klondike Creek area. Skagway became the most famous town in Alaska. Although the rush only lasted about two years, the lore and the stories born of that event characterized Skagway, a town that today celebrates its mining history for the hundreds of thousands of tourists who visit each year on cruise ships (Naske and Slotnick 1987, DOI 2005).

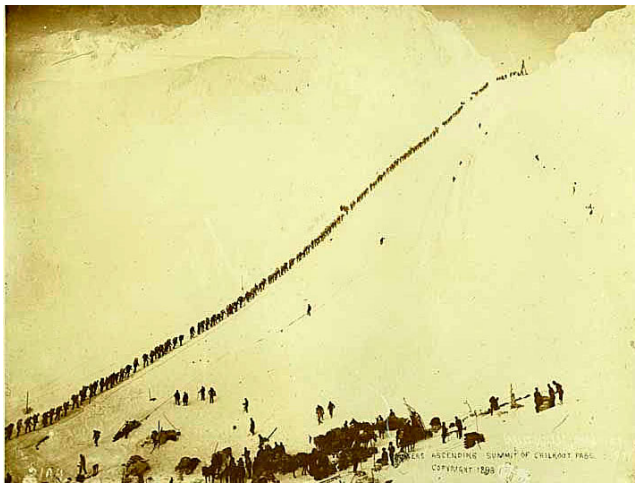

FIG 2. Miners headed north over Chilkoot Pass above Dyea and Skagway, on their way to the Klondike gold rush circa 1897. (Alaska State Library, Eric Hegg, P277-001-031)

Other Historic Mining Ventures

A variety of smaller mines have operated throughout Southeast. Marble was quarried from islands on the west coast of Prince of Wales Island from 1895 through 1932. Alaska marble was used in buildings from California and Nevada across the United States (Roppel 1991). Some 500,000 tons of gypsum were mined from the Iyoukeen Cove area on Chichagof Island between 1902 and 1926 (Kaufman 1958, Roppel 1991, DOI 1999). Several small gold mines operated on west Chichagof Island at Klag Bay and Kimshan Cove from 1905 and 1942, and on adjacent Yakobi Island from 1924–39 (DOI 1999). None of these mines are in operation today. Like many other less-significant mines, they are scarcely noticeable in the lush rainforest vegetation that quickly reclaims the sites. Throughout Southeast, however, are

dozens of old, scarcely visible mines that reflect the extensive prospecting and exploration that characterized mining in the Alaska Territory.

In the 1950s, a boom in uranium mining led to significant exploration throughout Southeast. Aerial detection of geologic radioactivity identified a deposit on Bokan Mountain on southern Prince of Wales Island in 1955. Through a succession of sales, the Ross-Adams Mine was sold eventually to Standard Metals Company. Between 1955 and 1964, open-pit excavation yielded nearly 40,000 tons (36,000 tonnes) of uranium oxide ore, which was trucked to a transshipment dock in Kendrick Bay. Another 55,000 tons (50 tonnes) was extracted by 1971 before the mine was played out and closed (Roppel 1991, U.S. Geological Survey 1996).

Barite was found on Castle Island in Duncan Canal. Between 1966 and 1969, more than 230,000 tons (207,000 tonnes) of barite was mined from Castle Island. Thereafter, barite was mined from an underwater open pit until 1970. After 1970, the owners hoped to sell barite to Alaska oil drilling companies for use in the drilling mud injected to lubricate oil well drills. However, the material was not competitive with other sources and the mine was closed. Today there is little evidence that the venture ever transpired (Roppel 1991, DOI 2000).

Examining mineral production in Alaska between 1906 and 1960, Kaufman (1961) noted the inconsistency of Alaska mineral production values through time. Average annual values for production of gold, copper, and coal fluctuated by orders of magnitude between 1906 and 1960, reflecting a cyclic, boom-and-bust pattern. Kaufman (1961) cited three specific challenges confronting potential mining ventures in Alaska: high costs of production, including materials and labor; high transportation costs; and the limited number of high-grade deposits.

CONTEMPORARY MINING IN SOUTHEASTERN ALASKA

In the mid-1970s, two large discoveries were made in Southeast. At Quartz Hill, east of Ketchikan, U.S. Borax Company identified what is thought to be the world's largest deposit of molybdenum, a steel alloy and lubricant. Located between two of the region's most productive salmon watersheds, and within the area proposed by conservationists as part of the Misty Fiords Wilderness Area, the Quartz Hill Project was highly controversial. The Alaska National Interest Lands Conservation Act (ANILCA) (Public Law 96-487) included Quartz Hill in the Misty Fiords National Monument, but left it out of wilderness status. The law set forth a specific procedure by which environmental assessment and development of the mine could proceed, within the context of a national monument. After five years of analysis, public review, and planning, the mine owners determined that high operating costs, insufficient market prices, and competition from lower-cost molybdenum producers across North America and around the world made the venture uneconomic (Roppel 1991, U.S. Forest Service [USFS] 1997).

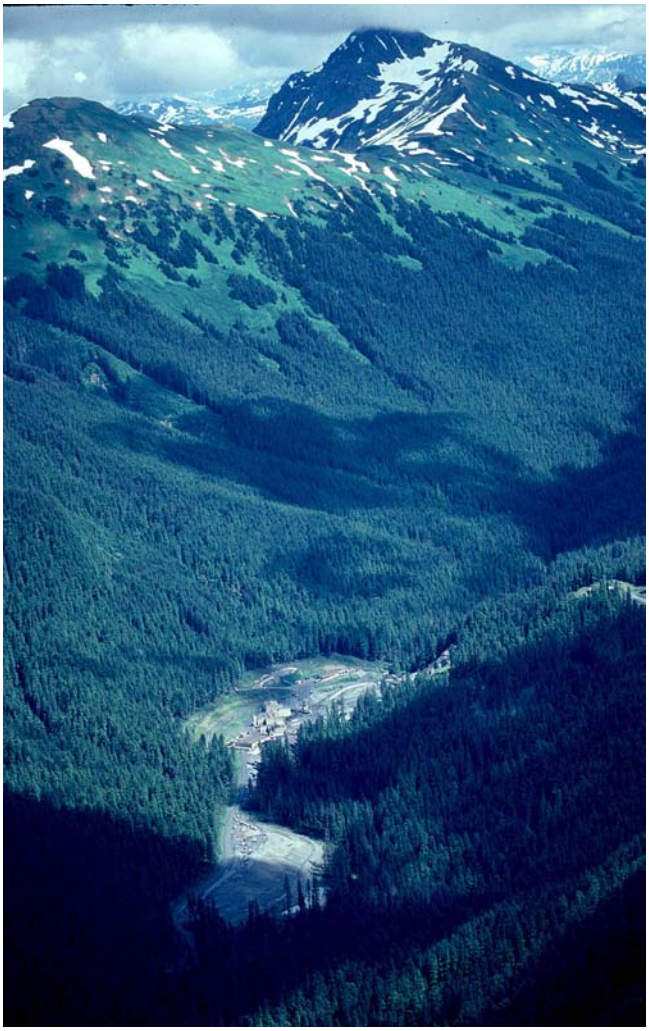

FIG 3. The Greens Creek Mine on northern Admiralty Is. is located within the Admiralty Island National Monument but lies outside the Kootznoowoo Wilderness. This mine is the largest silver mine in North America and also produces gold, lead, and zinc. (John Schoen)

In 1973, the Noranda Mining Company discovered a significant silver deposit on Admiralty Island in the Greens Creek watershed (Fig 3). Ironically, the Greens Creek deposit was also within an area that had been

proposed to Congress for wilderness area designation (Kootznoowoo Wilderness). Congress took an approach on Admiralty Island similar to its approach in Misty Fiords; ANILCA set forth specific requirements and procedures whereby the mine might be developed in a nonwilderness portion of an area otherwise considered wilderness and having a national monument land designation. Unlike the Quartz Hill molybdenum, the Greens Creek silver was extremely high grade and valuable, and after extensive planning and review, development commenced. The Noranda Mining Company brought the mine on-line in 1989; today Greens Creek is owned and operated by the Kennecott Company. It is the largest silver mine in North America, producing as much as 100 tons (90 tonnes) of ore per day. The Greens Creek Mine also produces gold, lead, and zinc. The mine employed approximately 265 workers with an estimated annual payroll in excess of $14 million, making it the largest employer in the combined city and borough of Juneau (USFS 1997).

Since the 1980s, Couer d'Alene Mines, operating as Couer Alaska, has endeavored to reopen the Kensington gold mine at Lions Head Mountain in Berners Bay, just north of Juneau (Fig 4). Couer Alaska has identified recoverable gold in excess of 1 million ounces (28 million g), and the Kensington mine could see annual production of as much as 100,000 ounces (2,800,000 g) of gold (Couer d'Alene Mines 2005).

In 1997, the USFS approved a development plan that placed most development impacts outside of Berners Bay on Lynn Canal and required several provisions to minimize environmental impacts. For example, no cyanide processing was allowed and mine tailings (ground up rock from which gold has been extracted) were required to be backfilled or impounded in a dry tailings facility. Couer Alaska obtained the necessary permits, and development appeared to be imminent (USFS 1997).

Falling gold prices and other considerations led Couer Alaska to propose an amended, reduced-cost development plan in 2001. The company proposed moving most development facilities from Lynn Canal to the Berners Bay side of Lions Head. Access to the mine would be through the tunnel from Berners Bay, and tailings would be deposited in a lake. Marine terminals on each side of Berners Bay would transport workers and equipment to the mine (USFS 2005).

FIG 4. The Kensington gold mine north of Juneau is located at Lions Head northwest of Berners Bay. (John Schoen)

The economic attributes of the Kensington project are substantial. The Kensington Mine would operate for approximately 10 years and employ approximately 225 people. Average annual gold production is estimated at 171,000 ounces (4,788.000 g) of gold per year, or about 1.7 million ounces (48 million g) over the life of the mine (USFS 2005).

The environmental attributes of Berners Bay are also substantial, and significant public opposition to the Couer Alaska development proposal has been voiced. The marine wildlife of Berners Bay is seasonally abundant. Fish populations are extremely rich and lead to congregations of animals that feed on the fish, including birds, marine mammals, and terrestrial mammals. Berners Bay is an important recreation area for Juneau residents. Kayaking, power boating, camping, fishing, hunting, and mountaineering are enjoyed by many (USFS 2005). A portion of Berners Bay was designated as a roadless, no-logging area in the Tongass Timber Reform Act of 1990 (U.S. House of Representatives 1990), and conservationists are concerned the Kensington Mine will impinge on or even negate some values that designation was intended to protect. The USFS has approved Couer Alaska's amended mining plan, and the company had anticipated that construction could begin in 2006. However, this project was still involved in limbo and litigation as this chapter went to press.

The outlook for new mining ventures in Southeast is both promising and uncertain. The region encompasses a number of mineralized areas, some of which have seen modest or significant production in the past. Projects today must contend with the same obstacles that Kaufman identified in 1961: high costs of production, including materials and labor; high transportation costs; and the limited number of high-

grade deposits. Global competition for mineral resource production is also intense, particularly from regions with significantly lower production costs. Additional considerations are the competing purposes the public advances for many places throughout Southeast and in the Tongass National Forest. The Quartz Hill deposit in Misty Fiords National Monument, the Greens Creek Mine inside Admiralty Island National Monument, and the proposed Kensington Project in Berners Bay are examples of the challenge of reconciling public interests in fish and wildlife, wilderness, and recreation and tourism with economic interests in mineral extraction.

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