

4.63 Sorters at work, Tilt Cove mine, c. 1912 Men sort the ore outside the Tilt Cove mine. Tilt Cove mine operated until 1917, when international markets and complications from the war, as well as problems of ore grade and accessibility, caused the mine to shut down.



What items could be made/manufactured from the minerals found in Newfoundland and Labrador?

What were the risks, if any, to exploiting the minerals in Newfoundland and Labrador?

### Introduction

Newfoundland and Labrador has some of the oldest rocks in the world and unusual **rock sequences** that bear witness to a vast range of **tectonic forces**. As a result, a wide variety of mineral resources are found throughout the province. Although knowledge of these mineral resources grew in the 1800s through surveys and exploration, most of these could not be developed until the opening of the interior by the railway and an increased world demand for metal made it economically viable.

### **Early Mining**

Mining in Newfoundland and Labrador has its roots in prehistory. Various indigenous groups collected rocks that could be chipped into cutting implements and other tools. Archaeological evidence also suggests that there was organized mining in the Ramah Bay area thousands of years ago. Chert from this area was worked into various tools that have been found as far south as Maine – suggesting there was an extensive trade system among prehistoric peoples. Likewise, soapstone quarries near Fleur de Lys on the Baie Verte Peninsula indicate the Dorset and possibly other groups mined soapstone in blocks to be made into lamps and other tools.

Other than the smelting of bog iron by the Norse at the tip of the Northern Peninsula a millennium ago, the first recorded European interest in mining is of Sir Humphrey Gilbert mistaking pyrite (or "fool's gold") for gold at Catalina. Other anecdotal evidence suggests that some early fishers mined galena for the production of lead weights and jiggers from small veins at La Manche, Lawn, Lead Cove (Port au Port), and Red Rocks Point (near Cape Ray).



**4.64 No. 2 Tunnel of Bell Island mine, c.1902** Miners prepare to descend for a 6 a.m. shift. Note the candles on their hats, which were used to light their way underground.

### **Changing Economic Patterns**

While some mining activity was conducted here in the 1700s, before the railway it was confined to coastal areas where ore could be shipped by sea. Newfoundland's first major mining operation was in Tilt Cove. From 1864 to 1917, this mine was rated as one of the largest producers of copper in the world. The success of the Tilt Cove mine resulted in an intense period of exploration and mining activity. However, with the exceptions of the Bell Island iron ore mines, the Buchans mines, and the St. Lawrence fluorspar mines, most mines were smaller scale operations that operated for relatively short periods of time.

Mining on Bell Island began with surface mining in 1895. By 1900, this site was one of the most productive iron ore operations in the world. Underground mining began at Bell Island in 1902, and by 1910 mining tunnels extended out for several kilometres under the ocean. Just before the First World War, the Bell Island mine employed about 1300 workers. Work at the Bell Island mine continued until 1966, making it the longest continually operated mine in Canada.



#### **4.65 Examples of mineral use from prehistoric to modern times** A Dorset soapstone pot; a killick (anchor), c. 1920; a piece of cable purchased for use in the laying of the first transatlantic cable from Europe (Ireland) to North America (Heart's Content) in 1858

UNIQUE GEOLOGY

Tectonic plate movement, mountainbuilding, volcanic activity, and erosion produced an unusual geology in the province. Labrador, the eastern part of the Canadian Shield, has some of the oldest rocks on earth. Newfoundland is a northeastern extension of the muchyoungerAppalachianMountains, which were formed when tectonic plates collided about 400 million years ago. The resulting rock structures contain a wide variety of minerals near the Earth's surface.

- Magma from volcanoes formed igneous rocks, producing iron, copper, nickel, and feldspar.
- Sedimentary rocks (compacted by the weight of water and other sediments above them) yield limestone, sandstone, and oil and gas.
- Metamorphic rocks (formed when severe heat and pressure were applied to igneous and sedimentary rocks) produced marble and slate.



Looking east, with the mill and other structures in view.

In the Buchans River area, 1905 assays confirmed that significant quantities of ore existed. However, a mine did not become economically viable until a process was discovered in 1925 to separate the minerals. Zinc was the first mineral to be extracted. Over time, as technology improved, lead, copper, gold, and silver were also extracted. With a viable process to extract the minerals, in 1927 the A.N.D. Company (owners of the Grand Falls pulp and paper mill) and the American Smelting and Refining Company (ASARCO) began to build a mine and the company town of Buchans for the mine's workforce. ASARCO leased the land for the mine and town from the A.N.D. Company and agreed to pay the company 50 per cent of the profits. The mine at Buchans continued for nearly half a century. Operations were significantly reduced by the mid-1970s and the mine eventually closed in 1984.

Another mine to open during the second quarter of the twentieth century was the fluorspar mine in St. Lawrence. The extraction and shipment of fluorspar ore began in 1933. Fluorspar is used in the manufacture of such items as aluminum, glass, and enamels. The St. Lawrence operation closed in 1978 due to labour unrest, safety issues,\* and competition from mines in Central and South America.



**4.67 Matty Mitchell** Matty Mitchell was a Mi'kmaw trapper, guide, and prospector. He is credited with discovering the mineral find on the bank of the Buchans River in 1905 that ultimately led to the opening of the Buchans mine.

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### **Economic Effects**

With the opening of the Tilt Cove and Bell Island mines, and later those in Buchans and St. Lawrence, mining began to increase its contribution to the Newfoundland economy. Eventually, mining increased in importance until the value of its exports matched that of the fishery. Nonetheless, the number of miners employed was far less than the number of workers engaged in the fishery and any other sector of the economy. For example, in 1935 only two per cent of the total workforce was employed in the mining industry.

Although prior to 1860 and after 1930 some royalties were paid to the government based on the gross product of mines, most of the real mining profits went to investors from outside Newfoundland and Labrador. For the most part, this was because there were few Newfoundlanders and Labradorians with access to the large amounts of capital needed to start up a mining operation.



# VENT PROSPECTING

In order for a company to begin mining on a piece of government land, it had to first obtain a mining licence and a lease for the location. The land would then be granted to the company, once it had invested\* a certain amount of money to develop the property. As historian Wendy Mills notes, "Newfoundland's mercantile system of giving credit rather than cash for fish made it next to impossible for fishermen to develop even unlicensed territories. Credit did not buy gunpowder and pickaxes; nor did it pay the government surveyors' obligatory and exorbitant fees."

# <u>…Credit did</u> not buy gunpowder and pickaxes ... "



4.69 A horse pulling a loaded ore cart, Bell Island mine, c. 1940 As can be seen here, mine shafts had low ceilings. Often dripping water made working conditions cold and wet.

4.70 Mines and quarries 1700s-present



No.	Location	Commodity	Years of Operation	No.	Location	Commodity	Years of Operation
1	Ten Mile Bay	Anorthosite	1993-present	54	Goose Arm	Lead Zinc	1897
2	Iojak Bay	Anorthosite	2001-2002· 2004-2005	55	Summerside	Slate	1902-1909
-		Nickel, Copper.	2001 2002, 2001 2000	56	York Harbour	Copper	1897-1913
3	Voisey's Bay	Cobalt	2005-present	57	Curling	Slate	1907-1908
4	Knob Lake	Iron Ore	1954-1983	58	Corner Brook	Marble	1881?; 1950s
5	Labrador City	Dolomite	1986-present	59	Corner Brook	Shale, Limestone	1952-2000
6	Labrador City	Iron Ore	1962-present	60	Duchana	Copper, Lead,	1090-1004
7	Labrador City	Silica	1999- present	00	buchans	Zinc, Gold, Silver	1920-1904
8	Wabush	Iron Ore	1965-present	61	Buchans	Barite	1981-1984;
9	Goose Cove	Copper	1907?	60	<b>V</b> <sup>T</sup> at a s <sup>1</sup>	L. C.	2006-present
10	Canada Harbour	Marble	mid-1860s; 1912-1915	62	Victoria Ducele Daniel	Iron, Copper	unknown
11	Daniel's Harbour	Zinc	1975-1990	64	Duck Pond Bishop's Falls	Copper, Zinc	2007-present
12	Parsons Pond	Oil	1895-1907?; 1919-1926	04	Distiop s rais	reat	1904-present
13	Sop's Arm	Gold	1903	65	Jumpers Brook area	Gabbro	2008-present
14	Clay Cove-Purbeck Cove	Marble	1912?	66		A .:	1997-1998;
15	Fleur-de-Lys	Molybdenite	unknown	66	Beaver Brook	Antimony	2008-present
16	Baie Verte	Asbestos	1963-1994	67	Benton	Granite	1898-1901
1/	Ierra Nova	Copper	1860-1864; 1901-1915	68	Bluff Head	Asbestos,	18912-1900
18	Pine Cove	Gold Common Cold	2008-present	00		Chromite	1000
19	Baie Verte	Silver	1964-1982; 1995-1997	69	Lewis Hills-Chrome Point	Chromite	1902
20	Goldenville	Gold	1904-1906	70	Lower Cove	Limestone, Dolomite	1990-present
21	Barry & Cunningham	Gold	unknown	71	Shoal Point	Oil	1898-1900?
99	Tilt Carr	Copper, Nickel,	1964 1017, 1057 1067	72	Aguathuna	Limestone	1913-1965: 1969
22	The Cove	Gold	1004-1917; 1937-1907	73	Lead Cove	Lead	1874-1877
23	Nugget Pond	Gold, Silver	1997-2001	74	Indian Head	Iron	1941-1944
24	Bett's Cove	Copper	1875-1886	75	Flat Bay	Gypsum	1952-1999
25	Burton's Pond	Copper	1869-1872	76	Coal Brook	Gypsum	1999-present
26	Muir's Pond	unknown	unknown	77	St. George's	Magnetite	1995-1998
27	Bear Cove	Lead	1908	78	Fischells Brook	Gypsum	1996-2001
28	Swatridge	Copper	1876-1877	70		Gold,	1900?-1902
29	Old English	Copper	1879-1882?	/9	Kose Blanche	Granite	1870s
30	Colchester	Copper	1878-1884; 1898-1901	80	Grand Bruit	Gold	1902
31	McNeilly	Copper	1892-1898	81	Hope Brook	Gold	1987-1997
32	Rendell-Jackman	Copper	1909-1913	82	Rencontre East	Molybdenum	1900
33	Hammerdown	Gold, Silver	2001-2004	83	Mine Cove	Lead, Silver	1860
34	Springdale	Copper	1965-1971; 1974	84	St. Lawrence	Fluorspar	1933-1978; 1987-1990
35	Little Bay	Copper, Gold	1878-1904; 1961-1969	85	Milton	Brick from clay/	1886-1999
36	Delaney	Copper?	1883?	00		shale	1000 1000
37	Lady Pond	Copper	1880s, 1890s	86	Elliot's Cove	Brick clay	1890-1903
38	Sterling	Copper	1880-1882	87	Nut Cove	Slate	1986-1998; 2000-2002; 2004-present
39	Crescent Lake	Copper	1879-1881	88	La Manche	Lead	1858-1894
40	Sunday Cove Island	Copper	1898-1899	89	Collier Point	Barite	1980 1983-1985 1998
41	Pilley's Island	Pyrite	1887-1908	90	Silver Cliff	Lead	1883-1887
42	Thimble Tickle	Copper	1880	91	Villa Marie	Silica	1968-1988
43	Tea Arm	Copper	1880-1897?	92	Stoney House Cove	Copper	1860
44	Saunders Cove	Copper	1990?	93	Workington	Iron	1898-1899
45	Fortune Harbour	Copper, Iron	1880?	94	Turk's Gut	Copper	1856-1860?
46	Moreton's Harbour	Antimony	early 1880s-1916	95	Brigus	Manganese	19142-19192
47	Sleepv Cove	Copper	1908-1917?	0.0		D	1902-1905: 1980: 1983-
48	Trump Island	Copper	1860s	96	Collier Point	Barite	1985; 1998
49	Cobb's Arm	Limestone	1870-1966	97	Bell Island	Iron ore	1895-1966
50	Cormack	Limestone	1987-2007				1904-1906; 1909-1910;
51	Howley	Coal, Marble	1898-1899 1930s	98	Manuels	Pyrophyllite	1938-1947; 1956-1995; 2004-present
52	Gaff Topsails area	Granite	1898-1901-1993	99	St. John's	Sandstone	1700s, 1800s
53	Gull Pond	Copper	1967-1971	100	Shoal Bay	Copper	1776-1778
55	Guirtonu	Copper	1307-1371				

**Disclaimer:** This information has been drawn from data in *Once Upon a Mine: Story of Pre-Confederation Mines on the Island of Newfoundland* by Wendy Martin, with additional support from the Department of Natural Resources. The Department of Natural Resources does not guarantee the accuracy of the information provided. The table is based upon historical documents which sometimes provide conflicting information. The presence on this list does not imply approval or recommendation by the Government of Newfoundland and Labrador.

# (Intensions) (OF THINKING)

## How did "this place" change?-

Throughout this chapter you have examined how Newfoundland and Labrador's economy became increasingly diversified. Also, it has been noted the various ways in which these changes affected the country.

In this essay the author notes a number of positive and negative effects of the mining industry. As you read

the essay, ask yourself how these effects shaped "this place."

In the vast majority of cases, mining enterprises are owned and controlled by distant, usually anonymous powers. In a certain sense this is inevitable. Mining is a highly speculative enterprise, requiring large outlays of capital. Generally, only major international firms are able and willing to undertake such enterprises. Unfortunately, the companies often have little interest in long-term, sustainable development of the areas in which they operate.

This is especially true of the mining industry in a place like Newfoundland and Labrador. Without a strong manufacturing or industrial sector, this area is viewed and utilized (as are other peripheral places, such as the Canadian North) primarily as a source of raw materials, which are extracted and exported for use by industries elsewhere.

A mine is, of course, by its very nature a temporary enterprise. Every day a mine is worked, it is a day closer to shutdown. Add to this the fact that prices and markets are often shaped by forces beyond the control or even the knowledge of the local population, and what emerges is a picture of a local industrial operation which is highly unreliable, much given to a boom-and-bust cycle, and doomed to termination when the resource is exhausted.

On the more positive side, mining has in some cases provided many people with relatively stable, paid employment, and in many instances helped free them from dependence on an unpredictable fishery and on the local merchant.

In places where a major mining industry was established and grew, many traditional practices and values were altered or eradicated: how people lived and worked on the land or the sea; how they organized their time throughout the day or across the seasons; how families related and operated in the context of home and work. All these things and many others were deeply and permanently affected by the incursion of these new industries.

> Excerpt from "Mining" by Rick Rennie, from the Newfoundland and Labrador Heritage Web Site

4.71

# Questions:

- 1. Use the essay provided to create a concept web which identifies the direct, indirect, and unanticipated consequences of the mining industry.
- 2. Determine if each consequence you identified in No. 1 was positive or negative.
- 3. Based on your assessment of the data provided, what can you conclude were the most important positive and negative effects of the mining industry? Explain.

### **Impact on Lifestyle and Culture**

Since some mines started in times when the Newfoundland and Labrador economy was depressed, the opportunity to work in them was welcomed. For many, it meant giving up the fisheries and relocating to a mining town. Like forestry-related jobs, the mines provided a source of wage-based and fairly steady work.

Miners worked long hours. For instance, in Buchans the average working day was about 14 hours, with no overtime pay. On Bell Island, miners generally worked 11-hour shifts, six days a week. Before 1923, boys as young as 10 years also worked in the Bell Island mine site doing work such as separating rocks from the ore as it moved along a conveyor, feeding and grooming horses, and getting water for the workers. These boys would have quit school by grade three or four to earn approximately 10 cents an hour for their families. Safety was also an issue for miners. In addition to health hazards caused from breathing rock dust (and radon gas in the case of the St. Lawrence mine), rock falls and explosions were constant risks.

## GOODBYE TO ST. LAWRENCE By Sam Richards

Goodbye to St. Lawrence, farewell, Newf'n'land, I'm bound for the mainland tomorrow; There's nothing for me in the place I was born, Nothing but hardship and sorrow. Nothing but hardship and sorrow.

My old man was strong, he was like a bulldog, Was raised up as tough as old leather; From the day he could walk he'd be out every day, Fishing in all kinds of weather. Fishing in all kinds of weather.

Winter and summer in the boats he'd be gone, Working hard, scraping a living; Somehow found time to marry my mother, And settled down, tried to start saving. And settled down, tried to start saving.

Fve heard old folk tell of the year '29, When the tidal waves set the place reeling; Stirred up the breeding grounds, scattered the fish, Leaving our people half starving. Leaving our people half starving.

They lived on relief for three years and more, Trying to keep themselves living; Till the company came with their drills and their gear, Said there was money in mining. Said there was money in mining. The people 'round this place, they dug those damn mines, With hearts and with hands that were willing; Then ten hours a day they would sweat in that hole, Mucking and tramming and drilling. Mucking and tramming and drilling.

My old man went down with his picks like the rest, Down in the dust and the danger; Drilling and blasting, he choked in the smoke, Down in that lousy gas chamber. Down in that lousy gas chamber.

I've watched them go, seen them die of the dust, Every miner 'round here, his lungs failed him; Only one feller died harder than that, And high on a hillside they nailed him. And high on a hillside they nailed him.

When my old feller had breathed his last breath, Like the others who suffered 'longside him; The company flooded the mines and pulled out, Too few dollars in St. Lawrence mining. Too few dollars in St. Lawrence mining.

For forty-five years a fortune was made, From a hellhole so murky and dusty; But what's left behind, now they've closed the mines down, A company town with no company. A company town with no company.

(REPEAT FIRST VERSE)

4.72 Often hardships inspire artists to create a work of art that captures this experience. Do you think songwriter Sam Richards has successfully done this in the song above? Can you think of any other songs that express the hardships associated with a way of making a living?

3.

# **Questions:**

- 1. What might account for the overall increase in the value of mineral exports from 1885 to 1940? (See fig. 4.68.) Identify three factors.
- Fishers who sought employment in the mining industry experienced many changes in lifestyle. What were the benefits? What might have been some of the challenges?
- It can be argued that the diversification of the Newfoundland and Labrador economy with the development of new industries was desirable. However, it does not appear to be as "celebrated" as frequently in music played on radio stations compared to the fishery. What might account for this? How does this influence peoples' view/ understanding of the heritage of "this place"?