A History of Coal Mining in Nova Scotia

Information Series No. 2

A HISTORY OF COAL IN NOVA SCOTIA

Nova Scotia Department of Mines

Information Series No. 2

1978

INTRODUCTION

This publication is designed to give a general background in coal and coal mining in Nova Scotia. The information was compiled from various sources, which are listed in the back of the publication, and has been simplified and condensed in order to cover coal subjects ranging from definitions to mining history. This pamphlet has been prepared to meet a great demand for information on Nova Scotia's most historically important industry.

The most difficult part of the compilation was the research for production figures. It should be noted that the figures given here may not be accurate due to a great confusion of mine and company names, and the lack of any information prior to 1863. However, they do represent the best possible figures that could be compiled from the available sources.

It is hoped that the information in this publication will be of use not only to students, but to the general public.

This publication was compiled by Diane J. Gregory with the assistance of Jean M. Richardson and Lise M. Bisson.

DEFINITIONS OF COAL AND COAL MINING TERMINOLOGY*

Anthracite Coal of the highest metamorphic rank, in which the **fixed carbon** content is between 92% and 98%. It is hard, black and has a semi-metallic lustre and semi-conchoidal fracture. It ignites with difficulty and burns with a short blue flame, without smoke.

Bituminous Coal A coal that contains 15-20% **volatile matter**. It is dark brown to black in colour and burns with a smoky flame. Intermediate between **sub-bituminous** and **semi-bituminous** coal.

Boghead Coal A **sapropelic coal** resembling **cannel coal** in its physical properties but containing algae not **spores**. It rarely occurs in a pure state but rather in forms transitional to cannel coal. A source of both oil and gas.

Bootleg Mining The mining and/or selling of coal from an area not owned by the miner or without an owner's permission.

British Thermal Unit [B.T.U.] Heat needed to raise 1 pound of water 1 degree F (252 calories).

Cannel Coal A compact, tough **sapropelic coal** that contains **spores** and is characterized by a dull, waxy luster, conchoidal fracture and massiveness.

Carbon Ratio Percentage of **fixed carbon** in coal.

Coal A solid, brittle, stratified, **combustible** rock-like material formed by decomposition of plant vegetation which has been submitted to **compaction** and **induration.**

Coal Analysis The determination by chemical methods of the amounts of various components of coal.

Coal Ash Non-**combustible** material in coal.

Coal Bank Exposed seam of coal

Coal Basin A **coalfield** with a synclinal basin structure.

Coal Bump Sudden outbursts of coal and rock that occur when stresses in a coal pillar, left for support in underground workings, cause the pillar to rupture without warning, sending coal and rock flying with explosive force.

Coal Caking Coal that softens and binds together when heated and produces a hard grey cellular **coke.**

Coal Carbonization The heat treatment of coal in the absence of air at low temperatures (450 degrees-700 degrees C) or high temperatures (900 degrees-1200 degrees C).

*Some of these definitions were taken from the American Geological Institute Glossary of Geology and the U.S. Bureau of Mines, A Dictionary of Mining, Mineral and Related Terms. Most definitions have been modified for simplification.
Boldface terms are also defined in this listing.

Coal Classification The grouping of coals according to a particular property such as degree of metamorphism (**Rank**), constituent plant materials (**Type**) or degree of impurity (**Grade**).
OR: The grouping of coals according to percentage of **volatile matter, coal caking** properties and **coking** properties.

Coalfield A region in which coal deposits of economic value occur.

Coal Gasification Conversion of coal to gaseous fuel without leaving a **combustible** residue.

Coal gasification [Underground] A method of burning the coal in place to produce **combustible** gas which can be burned to generate power or processed in chemicals and fuels.

Coal Grade A **coal classification** based on the degree of impurity, ie. quantity of inorganic material or ash left after burning.

Coal Hydrogeneration or Liquefaction The conversion of coal into liquid **hydrocarbons** and related compounds by treating an oily paste of **bituminous coal** with hydrogen gas at elevated temperatures and pressures.

Coal Measures A succession of **coal seams** in varying thicknesses and separated by other sedimentary rocks such as sandstones and/or shales.

Coal Rank A **coal classification** based on degree of metamorphism.

Coal Seam or Bed A bed or stratum (layer) of coal.

Coal Type A **coal classification** distinguished by the kind of plant material that produced it.

Coke A **combustible** material consisting of the fused **coal ash** and **fixed carbon** of **bituminous** coal, produced by driving off the coal's **volatile matter.**

Coking Coal A bituminous coal containing 80-90% carbon and suitable for the production of **coke.**

Combustible Capable of burning; inflammable.

Compaction A decrease in the volume of **sediment** as a result of compressive stress, usually resulting from continued deposition above, but also from drying and other causes.

Fixed Carbon That part of carbon remaining when coal is heated in a closed vessel until the **volatile matter** is driven off. It is the non-volatile matter minus the ash.

High-Volatile Coals Coals containing over 32% **volatile matter.**

High-Volatile "A" Bituminous Coal A non-binding bituminous coal with less than 69% **fixed carbon**, more than 31% **volatile matter** and 14,000 or more **B.T.U.**

High-Volatile "B" Bituminous Coal A non-binding bituminous coal having between 13,000 and 14,000 **B.T.U.**

High-Volatile "C" Bituminous Coal A binding or non-weathering bituminous coal having between 11,000 and 13,000 **B.T.U.**

Hydrocarbons A large class of organic compounds containing only carbon and hydrogen, and occurring in coal, petroleum and natural gas.

Induration The process of hardening of **sediments** through cementation, pressure, heat, or other cause.

Lignite	A brownish black coal that is intermediate between **peat** and **sub-bituminous** coal.
Low-Volatile Bituminous Coal	A non-binding bituminous coal with 78-86% **fixed carbon** and 14-22% **volatile matter.**
Medium-Volatile Bituminous Coal	A non-binding bituminous coal with 69-78% **fixed carbon** and 22-31% **volatile matter.**
Meta-Anthracite Coal	A non-binding anthracite coal that has 98% or more **fixed carbon** and 2% or less of **volatile matter.**
Metamorphism	The mineralogical and structural adjustment of solid rocks to physical and chemical conditions which have been imposed at depth below surface.
Peat	An unconsolidated deposit of semi-carbonized plant remains of a water saturated environment, such as bog or fen, and of persistently high moisture content (at least 75%). It is considered the early stage or rank in the development of coal.
Peat Coal	A coal transitional between **peat** and brown coal or **lignite.**
Proximate Analysis	Determines percentages of moisture (water), **volatile matter, fixed carbon** and **coal ash;** also **sulphur** and heat value in **B.T.U.** (British Thermal Units) are reported.
Sapropelic Coal	A coal derived from organic residues (finely divided plant material, spores, algae) in stagnant or standing bodies of water.
Sediment	Solid material, both mineral and organic, that has come to rest on the earth's surface either above or below sea level.
Semi-Anthracite	Coal intermediate between **anthracite** and **semi-bituminous coal** and having a **fixed carbon** content of between 85% and 92%. Physical properties resemble **anthracite.**
Semi-Bituminous Coal	Coal that ranks between **bituminous** and **semi-anthracite**. It is harder and more brittle than bituminous coal, has a high fuel ratio and burns without smoke.
Spores	Parts of the reproductive organs of many plants that formed coal.
Sub-Bituminous Coal	A black coal intermediate in rank between **lignite** and **bituminous** coals. It has higher carbon and lower moisture contents than lignite.
Sub-Bituminous "A" Coal	A non-binding sub-bituminous coal having between 11,000 and 13,000 **B.T.U.**
Sub-Bituminous "B" Coal	A non-binding sub-bituminous coal having between 9,500 and 11,000 **B.T.U.**
Sub-Bituminous "C"Coal	A non-binding sub-bituminous coal having between 8,300 and 9,500 **B.T.U.**
Sulphur	Coal constituent usually in the form of pyrite (FeS_2).
Ultimate Analysis	Determines percentages of chemical elements — carbon, hydrogen, oxygen, nitrogen and sulphur.
Volatile Matter	Those substances in coal, other than moisture, that are given off as gas and vapor during combustion.

MINING METHODS

(See Figure 1)

Pillar Mining [Room and Pillar] [A] The coal is mined along a series of road ways that intersect at right angles, leaving pillars of coal at the intersections to support the roof. The pillars can later be extracted in retreat mining, letting the roof collapse into the open space thus created.

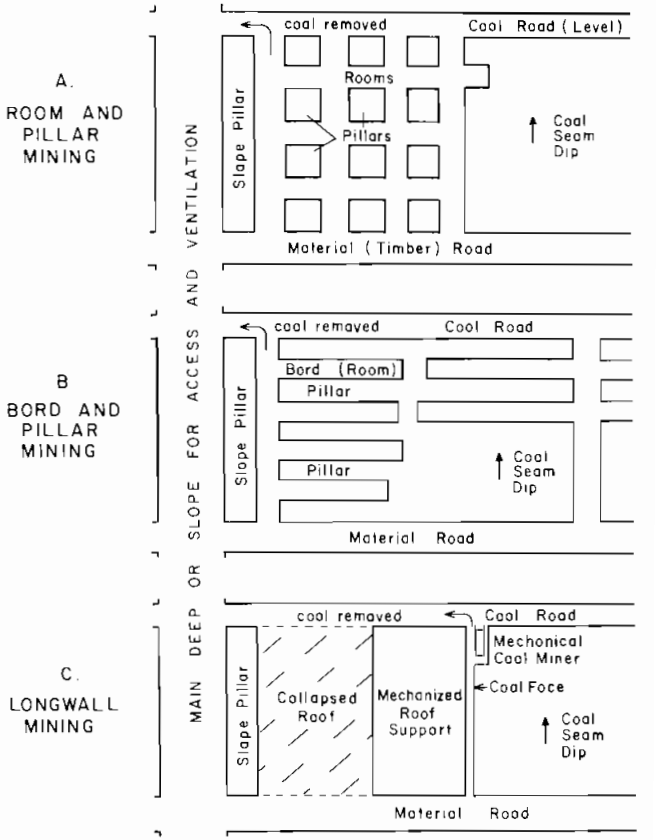
Bord and Pillar Mining [B] A system of coal mining in which the working places are rectangular rooms (bords) off a central road, five or ten times as long as they are broad. The bords are separated by pillars of solid coal.

Longwall Mining [C] A system of mining on straight faces of coal 80 yards or more in length. The coal is mined in a single, continuous operation. The emptied space is either filled with packing material or allowed to collapse.

Open Pit or Surface Mining [D] The mining of coal by the surface mining methods of stripping off soil and over-burden rock to expose the coal seam, and then excavating the coal.

MINING METHODS USED IN NOVA SCOTIA

The following are diagramatic representations of the ways coal is mined, showing a very small area of an operation. The first three represent underground methods, and the last is for surface mining.



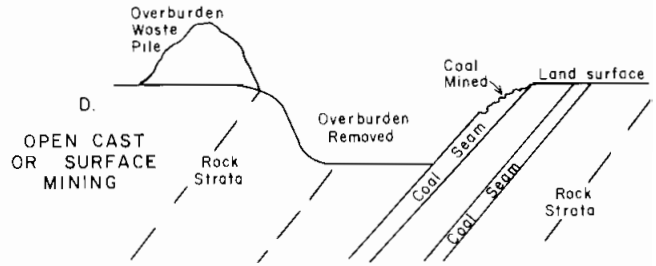


Figure 1

ORIGIN OF COAL

Coal is formed from the accumulation of plant material. It is estimated that approximately three to seven feet of reasonably compacted plant material is required to form one foot of bituminous coal.

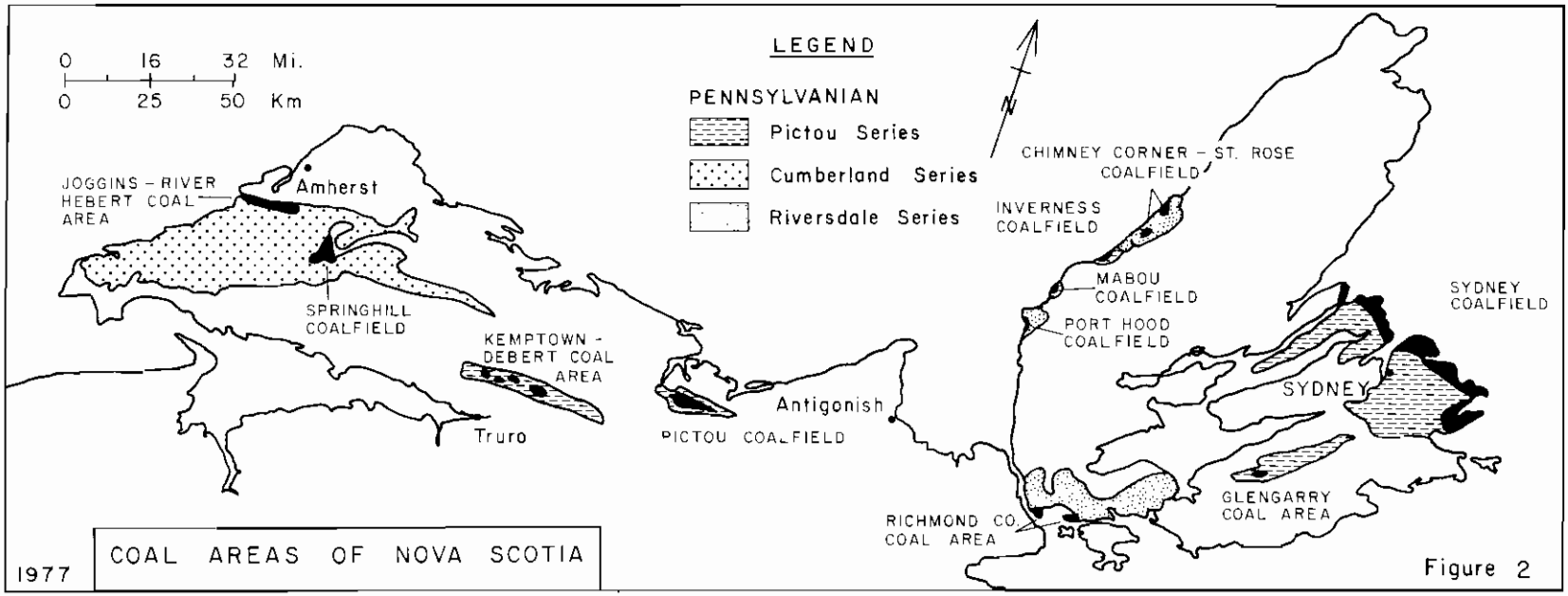
Swamps provide the type of environment that is needed to eventually produce coal. Swamps generally contain dense vegetation and the formation of peat in swamps or bogs can lead to the development of coal. Peat can develop in continental or coastal swamp areas, and in both types of areas peat formation requires that the growth of vegetation exceed that of decay and that the plant material be allowed to accumulate and not be removed by erosion. Poor drainage is another condition of peat development. Coastal swamp areas are more likely to be preserved as they have a better chance of being covered by the sea and buried by sediments deposited on the sea floor. The prevailing climate during the growth of these swamps is considered to have been temperate to subtropical.

As the peat accumulates, the weight of the top layers of peat compact the lower layers by squeezing out large amounts of water. Variable chemical effects and bacterial action on the plant debris also take place in the swamp environment. Burial by sediments, and loss of water and volatile materials result in the formation of lignite, the earliest stage in coal formation. With deeper burial, pressure continues to compress the lignite, and an increase of heat due to an increasing depth of burial will further lessen the amount of volatile matter in the coal-forming materials. The rank of the coal then becomes progressively higher, rising from lignite through sub-bituminous, bituminous, semi-bituminous, semi-anthracite and anthracite to meta-anthracite.

The coals of Nova Scotia were formed in the above manner during the Pennsylvanian age, approximately 300 million years ago. The coal in the province is now found in basins which were formed in coastal regions and which in most cases are on the present day coastline.

All of the coals in Nova Scotia are bituminous coals. Most of the coal produced is classified as high volatile "A" bituminous coal, with some medium volatile and low volatile coal produced in the Pictou Coalfield, a small amount of high volatile "C" in Inverness County and a small deposit of low volatile bituminous coal in the Debert area of Colchester County. The ash content of Nova Scotia coals varies considerably, and is considered average in relation to other coals; however, the sulphur content tends to be relatively high. This means that Nova Scotia coals are generally good thermal coals, but the sulphur content is too high in most areas for the manufacture of metallurgical coke and of gas.

The coal deposits in Nova Scotia belong to three different ages in the Pennsylvanian (Figure 2), from oldest to youngest; the Riversdale, Cumberland and Pictou Groups. The St. Rose-Chimney Corner, Port Hood and Richmond coal deposits belong to the Riversdale Group; the Springhill-Joggins deposits to the Cumberland Group; and the Mabou, Inverness, Sydney, Pictou, Colchester and Loch Lomond deposits to the Pictou Group. All of the deposits were formed from vegetation which grew on the location except for the Pictou deposit which appears to have been formed from vegetation which drifted into the basin.


0 16 32 Mi.
0 25 50 Km
LEGEND
PENNSYLVANIAN
Pictou Series
Cumberland Series
Riversdale Series
JOGGINS - RIVER HEBERT COAL AREA
Amherst
SPRINGHILL COALFIELD
KEMPTOWN - DEBERT COAL AREA
Truro
Antigonish
PICTOU COALFIELD
CHIMNEY CORNER - ST. ROSE COALFIELD
INVERNESS COALFIELD
MABOU COALFIELD
PORT HOOD COALFIELD
SYDNEY COALFIELD
SYDNEY
GLENGARRY COAL AREA
RICHMOND CO. COAL AREA
1977
COAL AREAS OF NOVA SCOTIA
Figure 2

HISTORY OF COAL IN NOVA SCOTIA

In any review of the history of mining development in Nova Scotia, it becomes evident that coal has been the most important commodity from the beginning to the present. The key to this development was Cape Breton Island with its vast deposits of coal.

In 1637, Nicholas Denys was appointed Governor of Nova Scotia by Louis XIV of France, and in 1673 he mentioned in dispatches to France the existence of large seams of coal on Cape Breton Island. From this date until well into the next century, coal was mined on a small scale almost continuously, much of it by smugglers, who obtained it from the outcroppings on the cliffs along the shores and sold it in the New England States.

The first attempt at organized coal mining on Cape Breton Island was in 1720 when it was found necessary to obtain a supply of fuel for the labour force constructing Fortress Louisbourg. Quantities of coal were soon being mined to supply the militia at Halifax as well as markets along the eastern seaboard of the United States. According to federal statistics, the first officially recorded export of minerals from Canada occurred in 1724, when coal was exported from Cape Breton to Boston.

In 1826, the Crown granted to Frederick, Duke of York, the right to all minerals in the province. The Duke, being hard pressed by his creditors, immediately sub-leased the mines to the General Mining Association for a financial consideration. From 1826 to 1850 this group held a mineral monopoly on large coal tracts in Cape Breton and on the mainland. In 1857, the mineral rights on all areas under the monopoly were surrendered to the Crown and from that time came under the jurisdiction of Nova Scotia. The Association was given 20 square miles in Cape Breton and four square miles in Pictou, Joggins and Springhill.

In 1893, the Dominion Coal Company Limited was formed and obtained control of all coal mines in the eastern portion of Cape Breton Island, specifically the properties on the east side of Sydney Harbour, under a ninety-nine year lease. Leaseholds of subsidiaries of the Dominion Coal Company and independent operators by this time were also under development in other counties of Cape Breton Island and on the mainland of Pictou, Cumberland and Colchester Counties. With the advent of this great industrial organization, a new era of coal mining began. Old coal markets expanded and new ones opened up, so that the whole coal trade was revolutionized.

From the turn of the century until well into the 1950s, coal mining boomed in the province, in four specific areas. These areas, from east to west, were the Sydney coalfield, Cape Breton County; four small areas comprising the Inverness County coalfields; the Pictou coalfields, Pictou County; and the Springhill-Joggins coalfields in Cumberland County. Gradually though, with the market for this fuel dropping and with mining disasters in several areas, the mines closed. By 1976, there were only six operating mines left in Nova Scotia. Three of these are in the Sydney coalfield, one at St. Rose, Inverness County, one at Westville, Pictou County, and one at River Hebert, Cumberland County. These last three mines produce coal on a very small scale for local consumption, and the Sydney mines produce coal for the Sydney steel works and for use as fuel.

The history of coal mining since the early years has been one of trials, troubles, and tribulations; a story of fires, floods, and disasters; a story of heroism on the part of the officials and workmen in the face of gravest danger, that has never been surpassed. Because of the encroachment into coal's traditional markets, particularly in Ontario and Quebec by fuel oil and natural gas for both domestic and industrial heating, the output of the coal mines has declined by about one-third during the past decade or so. With the increase in the oil price and the world reserves of gas and oil being quickly depleted, the possibility of coal being utilized in thermal power plants for the generation of electric current to supply increased power demands may stabilize, or even increase the coal output in future years.

COAL PRODUCTION TOTALS IN NOVA SCOTIA
(in tons)
1863-1976

Nova Scotia	380,551,197
Counties	
Cape Breton County	258,334,227
Pictou County	62,942,541
Cumberland County	48,890,265
Inverness County	9,924,728
Colchester County	369,581
Victoria County	174,977
Richmond County	4,878
Coalfields	
Sydney Coalfield	258,506,325
Pictou Coalfield	62,942,541
Springhill Coalfield	35,345,860
Joggins-River Hebert Coalfield	13,454,405
Inverness Coalfield	7,999,120
Port Hood Coalfield	1,068,936
St. Rose-Chimney Corner Coalfield	786,998
Kemptown-Debert Coal Area	369,581
Mabou Coalfield	69,674
Richmond County Coalfield	4,878
Glengarry Coal Area	2,879

SYDNEY COALFIELD

The Sydney Coalfield (Figure 3) contains the largest coal reserves in eastern Canada and extends northwesterly from Cape Morien to Cape Dauphin, a distance of about 36 miles, terminated on the northwest by the Mountain Fault and on the southeast by the Bateston Fault. The coal occurs in 6,400 feet of strata called the Pictou Group, with the dip of the strata varying from four to 10 degrees seaward.

The structure of the area is a series of shallow northeasterly plunging folds that extend from the northwest to the southeast. There are four major synclines — Boularderie, Sydney Harbour, Glace Bay and Morien. There are also a number of small folds as well as minor faults at depth, affecting the seams in the submarine part of the field.

Due to the northeast dip of the folds a great deal of the coal in the field is submarine. The extent of the seaward area is not totally known, but the workings which are some five miles from shore do not indicate any deterioration of the presently mined seams. Marine geophysical work indicates only minor interruptions to the Sydney basin in a northeast direction at least as far as the St. Lawrence channel, some 40 miles from the Cabot Strait. There may, therefore, be submarine reserves many times larger than those presently known.

Twelve major seams occur in the Sydney Coalfield and they all outcrop along the coast, with the youngest at Point Aconi to the northwest and the oldest near Broughton in the southeast. Their thickness varies from three feet to seven feet (with local areas up to 10 feet), and 11 seams have been mined at one time or another.

All of the seams are high volatile "A" bituminous coals, and the following analysis is representative of the Harbour Seam (Swartzman, 1953).

	As Received Basis
Moisture (%)	4.0%
Ash (%)	5.2%
Vol. Matter (%)	36.1%
Fixed Carbon (%)	54.7%
Sulphur (%)	2.9%
Calorific Value	13,545 B.T.U.

The Sydney Coalfield is divided into four main districts: Port Morien, Glace Bay, New Waterford and Sydney Mines. Each of the twelve seams in the coalfield pass through several or all of these districts and are designated by different names within each of the districts, although there is a general name for each seam within the whole coalfield. There is a fifth district called New Campbellton which has two workable seams, the Four Foot and the Six Foot, equivalent to the Phalen and the Stony respectively, however, not much work has been done in this area. The seams are described in the following section, with details as to thickness, district and an older district seam name that is no longer used. No stratigraphic sequence is given for the seams in this summary, as the thickness of strata between the seams varies greatly in each district.

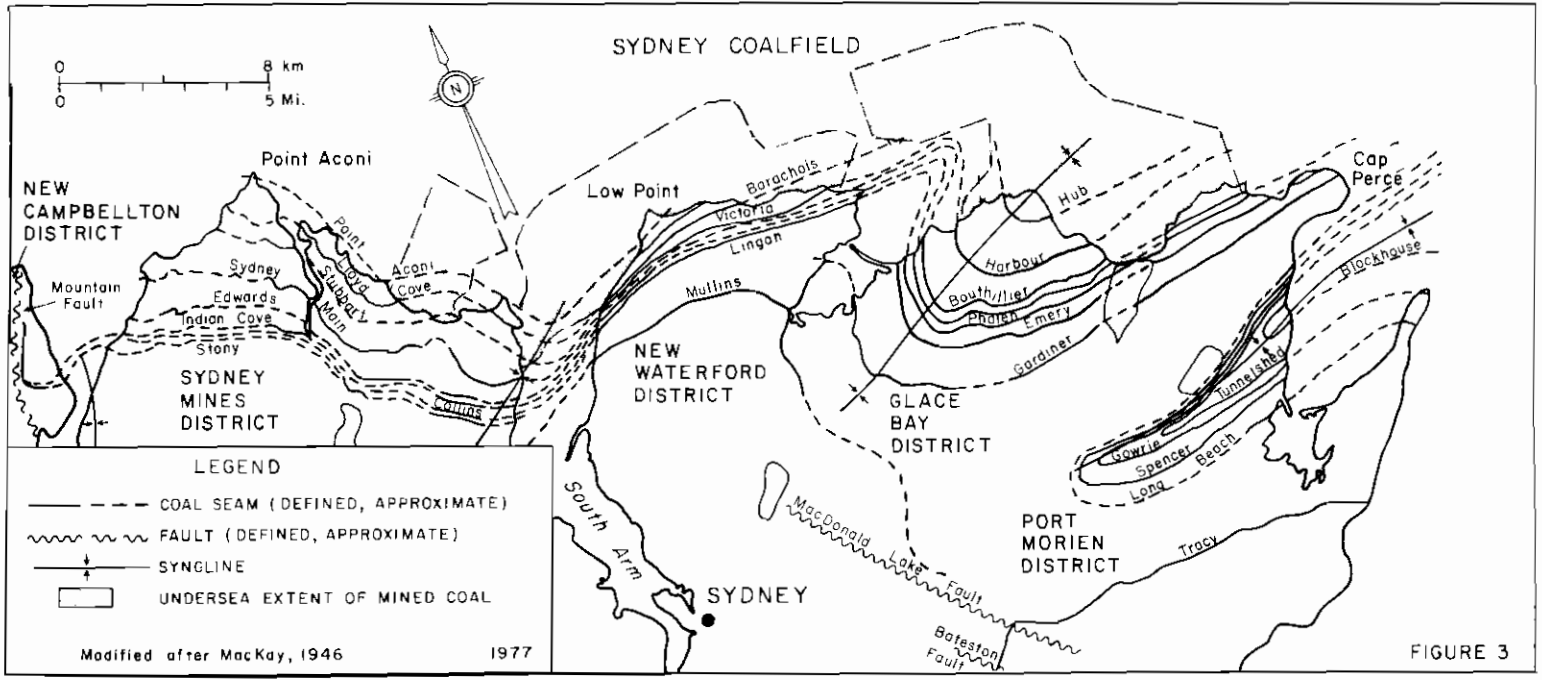

SYDNEY COALFIELD
0 8 km
0 5 Mi.
N
Point Aconi
NEW CAMPBELLTON DISTRICT
Mountain Fault
Sydney
Edwards
Indian Cove
Stony
Point Aconi
Stubbert
Main
Aconi Cove
SYDNEY MINES DISTRICT
Collins
Low Point
Barachois
Victoria
Lingan
Mullins
NEW WATERFORD DISTRICT
Hub
Harbour
Bouthillier
Phalen
Emery
Gardiner
GLACE BAY DISTRICT
Cap Perce
Blockhouse
Tunnelshed
Gowrie
Spencer
Beech
Long
PORT MORIEN DISTRICT
Tracy
South Arm
SYDNEY
MacDonald Lake Fault
Bateston Fault
LEGEND
COAL SEAM (DEFINED, APPROXIMATE)
FAULT (DEFINED, APPROXIMATE)
SYNCLINE
UNDERSEA EXTENT OF MINED COAL
Modified after MacKay, 1946
1977

FIGURE 3

Point Aconi Seam — Average thickness: 3.5′
District: Sydney Mines

Lloyd Cove [Upper and Lower Bonar Seam] — Average thickness: 5′
District: Sydney Mines

Hub Seam — Average thickness: 5.5′-9′
Districts-Seams: Glace Bay-Hub
New Waterford-Barachois
Sydney Mines-Stubbart

Harbour Seam — Average thickness: 5′-9′
Districts-Seams: Port Morien-Blockhouse
Glace Bay-Harbour
New Waterford-Victoria
Sydney Mines-Sydney Main

Bouthilier Seam — Average thickness: 2′-3′
Districts-Seams: Glace Bay-Bouthilier
New Waterford-Fairyhouse
Sydney Mines-Edwards

Backpit Seam — Average thickness: 3′-4′
Districts-Seams: Port Morien-Tunnelshed
Glace Bay-Backpit
New Waterford-North Head
Sydney Mines-Indian Cove

Phalen Seam — Average thickness: 4′-7′
Districts-Seams: Port Morien-Gowrie
Glace Bay-Phalen
New Waterford-Lingan
Sydney Mines-Collins
New Campbellton-Four Foot

Stony Seam — Average thickness: 3′-6′
Districts-Seams: Sydney Mines-Stony
New Campbellton-Six Foot

Emery Seam — Average thickness: 4′
Districts-Seams: Port Morien-Spencer
Glace Bay-Emery

Gardiner Seam — Average thickness: 2.5′-4′
Districts-Seams: Port Morien-Long Beach
Glace Bay-Gardiner

Mullins Seam — Average thickness: 4′
Districts-Seams: New Waterford-Mullins
Sydney Mines-Mullins

Tracy Seam — Average thickness: 4′
District-Seam: Port Morien-Tracy

Mining History: Coal was first mined in the Sydney Coalfield by the French Military in 1720, in the Port Morien district. Mining of seam outcrops was carried out in the field into the 1800's and in 1825 the General Mining Association was formed and began systematic mining of the Sydney Mines area. In 1857 the Nova Scotia Government took over operations of the General Mining Association. Around 1860 several mining companies formed and opened up the Glace Bay district and by 1870 there were approximately twenty collieries operating. In 1893, seven of the eight operating companies consolidated to form the Dominion Coal Company, Limited; however, the General Mining Association still operated an area at Sydney Mines. In 1901, the latter company sold out to the Nova Scotia Steel Company which later merged with the Dominion Coal Company and other companies to form the British Empire Steel Corporation Limited, in 1921. The Dominion Coal Company continued to operate the mines in the Glace Bay and New Waterford district, while the Nova Scotia Steel Company and other smaller companies operated in the Sydney Mines and Port Morien districts. The greatest production period, with the most mines working in the field, was in the mid-1940's. By 1960, only half of the original mines in the Sydney field were operating, and in 1968 the operations of all the mines were taken over by the Cape Breton Development Corporation (Devco). Many more mines closed and in 1976 only three mines remained operating. One of these, Devco #26, has been operating continuously since 1943; the Lingan was reopened in 1970 after a lengthy closure; and a new mine, the Prince, was started in 1975. One mine that closed in 1975, the Princess, was the oldest operating mine in the field. Throughout the history of this coalfield a type of mining called "bootlegging" has been a common occurrence with the coal being taken illegally from surface outcroppings of seams. Most of the mine closures over the years have been due to a drop in the market for coal, and several closed due to fires or other mine accidents.

CAPE BRETON COUNTY

SYDNEY COALFIELD
PORT MORIEN DISTRICT

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Mira Bay	Mira	Tracy	1863+1870	555	1863 -	540
False Bay	Hiawatha	Tracy	1920-1921	5,346	1921 -	4,526
Broughton	Broughton	Tracy	1914-1915	55,847	1914 -	37,740
Broughton	Silver Lake		1934-1935	2,993	1934 -	2,569
Broughton	New Broughton	Mosely	1936-1937	2,605	1937 -	2,329
Broughton	Beaver	Tracy	1950-1961	181,989	1959 -	28,202
Broughton	Four Star	Tracy	1950-1969	1,544,143	1963 -	122,204
Broughton	Crystal	Tracy	1956-1962	16,114	1959 -	5,886
Birch Grove	Dominion No. 21	Gowrie	1911-1925	1,285,900	1921 -	182,198
Morrison's Lake	Dominion No. 22	McAuley/Gowrie	1912-1930	2,341,056	1927	247,022
Port Morien	Gowrie	Gowrie/McAuley	1863-1892	1,930,837	1891 -	158,064
Port Morien	Blockhouse	Blockhouse	1868-1888	1,168,986	1867 -	95,656
Port Morien	Gowrie & Blockhouse	Gowrie/Blockhouse	1901-1907	201,868	1904 -	40,399
Port Morien	North Atlantic	McAuley/Gowrie	1907-1912	273,641	1910 -	89,006
Port Morien	Schooner Pond	Emery/McPhail	1872-1874	18,541	1873 -	13,901
Port Morien	South Head/Cow Bay	Spencer	1868-1877	7,065	1868 -	2,300
Total — Port Morien District				4,037,486		

GLACE BAY DISTRICT

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Glace Bay	Dominion Colliery		1893-1922	86,364,095	1913 -	4,719,614
Glace Bay	Dominion No. 2	Phalen	1911-1949	20,210,467	1935 -	837,917
Glace Bay	Dominion No. 3	Phalen	1910-1924	689,829	1910 -	217,843
Glace Bay	Dominion No. 4	Phalen	1910-1961	19,918,811	1957 -	577,876
Glace Bay	Dominion No. 6	Phalen	1910-1930	3,162,876	1923 -	280,382
Glace Bay	Dominion No. 7	Hub	1910-1925	1,291,121	1913	217,536
Glace Bay	Dominion No. 9	Harbour	1910-1925	3,321,575	1912 -	425,270
Glace Bay	Dominion/Devco No. 20	Phalen	1939-1971	17,527,855	1963 -	890,831
Glace Bay	Dominion No. 24	Emery	1920-1953	5,790,101	1927 -	286,641
Glace Bay	Glace Bay	Hub/Harbour	1863-1892	1,395,080	1891 -	117,767
Glace Bay	Clyde/Ontario	Phalen	1863-1892	238,310	1882 -	24,541
Glace Bay	Caledonia	Phalen	1864-1892	1,533,251	1891 -	159,985
Bridgeport	Dominion No. 1B	Phalen/Harbour	1924-1955	17,468,424	1927 -	860,551
Bridgeport	Dominion/Devco No. 26	Phalen	1944-1976	19,390,357	1967 -	1,028,891
Bridgeport	International	Harbour	1863-1892	1,757,999	1890 -	143,091
Bridgeport	Dominion No. 8	Harbour	1910-1914	602,531	1911 -	176,735
Bridgeport	Bridgeport	Phalen	1884-1892	86,975	1892 -	32,320
Dominion	Dominion No. 1/1A	Phalen	1907-1927	7,288,865	1911 -	585,958
Dominion	Dominion No. 25	Gardiner	1942-1959	2,230,747	1954 -	227,426
Reserve	Dominion No. 5	Phalen	1910-1939	2,504,473	1911 -	338,102
Reserve	Dominion No 10	Emery	1910-1942	5,882,467	1937 -	290,900
Reserve	Dominion No. 11	Emery	1913-1949	7,241,587	1927 -	440,205
Reserve	Emery	Emery	1872-1878	31,210	1874 -	22,137

Reserve Mines	Reserve	Phalen	1871-1892	1,566,273	1891 -	170,844
Reserve Mines	Lorway		1869-1872	2,380	1872 -	2,330
Total — Glace Bay District				141,133,564		

NEW WATERFORD DISTRICT

Location	Mine	Seam	Dates	Production	Peak Year & Tonnage	
New Waterford	Lingan	Lingan Main	1863-1886	726,705	1866 -	73,457
New Waterford	Lingan (New)	Phalen	1972-1976	2,974,612	1976 -	1,230,761
New Waterford	Dominion/Devco No. 12	Victoria	1908-1971	30,951,424	1966 -	878,479
New Waterford	Dominion No. 14	Victoria	1909-1932	5,231,748	1914 -	410,626
New Waterford	Dominion No. 15	Lingan	1910-1925	1,365,802	1916 -	278,676
New Waterford	Dominion No. 16	Lingan	1911-1962	18,489,203	1950 -	722,087
New Waterford	Dominion No. 17	Victoria	1914-1921	36,010	1921 -	14,979
New Waterford	Dominion/Devco No. 18	Lingan/Harbour	1938-1966	7,373,654	1963 -	681,604
New Waterford	Victoria	Ross/Victoria	1867-1893	911,542	1892 -	121,638
New Waterford	Gardiner	Lorway	1868-1892	104,044	1892 -	41,636
Low Point	Ingraham	Indian Cove	1867-1876	430	1875 -	150
Low Point	Low Point	Mullins	1925	137		
Total — New Waterford District				68,165,311		

SYDNEY MINES DISTRICT

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Sydney Mines	Sydney Mines Colliery	Sydney Main	1863-1962	42,868,466	1910 -	836,345
Sydney Mines	Sydney No. 1/ Princess	Sydney Main	1908-1975	20,675,844	1963 -	695,116
Sydney Mines	Sydney No. 2/ Lloyd Cove	Lloyd Cove	1907-1916	508,095	1912 -	133,862
Sydney Mines	Sydney No. 3/ Florence	Sydney Main	1908-1961	13,228,871	1929 -	417,863
Sydney Mines	Sydney No. 4/ Scotia	Sydney Main	1908-1921	987,274	1913 -	174,631
Sydney Mines	Sydney No. 5/ Queen	Sydney Main	1908-1916	902,177	1910 -	140,079
Sydney Mines	Greener	Greener	1896-1963	687,036	1950 -	37,831
Sydney Mines	Tom Pit	Greener	1920-1942	750,788	1926 -	49,584
Sydney Mines	Barrington	Greener	1923-1925	12,066	1923 -	6,150
Sydney Mines	Prospect	Greener	1928-1931	8,443	1931 -	3,675
Sydney Mines	MacDonald	Greener	1932-1934	23,473	1934 -	11,146
Sydney Mines	Thompson	Greener	1938-1940	7,804	1940 -	4,555
Sydney Mines	Tomson	Greener/Upper Jubilee	1940-1962	465,468	1951 -	35,236
Sydney Mines	Scotia No. 7/ Alexander	Lloyd Cove	1921-1925	103,568	1921 -	39,320
Sydney Mines	Lloyd Cove No. 7	Lloyd Cove	1947-1956	301,915	1948 -	87,993
Sydney Mines	Last Chance	Clay	1935-1936	8,816	1935 -	7,870

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Sydney Mines	MacDougall	Collins/Clay	1935-1939	18,566	1937 -	5,626
Sydney Mines	Black Diamond	Clay	1938-1940	3,913	1939 -	2,134
Sydney Mines	Barasois	Lingan Main	1884-1886	293	1885 -	130
Sydney Mines	Sullivan/ Indian Cove		1934-1940	63,043	1938 -	14,856
Sydney Mines	Sullivan		1940-1946	82,477	1941 -	15,131
Sydney Mines	Hartigan		1925+1929	2,219	1929 -	2,177
Sydney Mines	Jack Pit		1920	3,042		
Sydney Mines	Jubilee No. 6	No. 3/No. 4	1913-1924	655.874	1923 -	170.373
North Sydney	Colinial Colliery		1907-1958	3,343,603	1941 -	171,939
North Sydney	Colonial No. 1	Collins	1909-1958	2,546,703	1941 -	171,939
North Sydney	Colonial No. 2	MacKay	1909-1924	283,613	1913 -	57,707
North Sydney	Colonial No. 3		1918	355		
North Sydney	Colonial No. 4	Gardiner/Greener	1920-1924	382,552	1923 -	93,515
North Sydney	Colonial No. 5		1920-1923	10,650	1923 -	8,442
North Sydney	North Sydney/ Indian Cove	No. 3	1895-1919	128,030	1919 -	15,562
North Sydney	Harbourside	Mullins	1928-1933	48,446	1932 -	15,641
Bras d'Or	Franklin	Sydney/ Sullivan	1885-1957	1,405,235	1951 -	142,557
Bras d'Or	Bras d'Or No. 5		1943-1946	21,808	1944 -	9,676
Bras d'Or	Atlantic	Collins	1957-1959	23,168	1958 -	14,231

Little Bras d'Or Bridge	Boularderie		1931	526		
Little Bras d'Or Bridge	Collins	Collins	1863-1878	30,911	1877 -	7,768
Little Bras d'Or Bridge	Matheson		1865-1869	3,803	1865 -	1,510
Point Aconi	Coastal	Stubbart	1918-1922	19,721	1921 -	9,141
Point Aconi	"Strip Mining"	Upper & Lower Bonar	1974-1975	172,719	1975 -	100,991
Alder Point	"Strip Mining"	Upper & Lower Bonar	1974	118,816		
Total — Sydney Mines District				44,994,987		

VICTORIA COUNTY

SYDNEY COALFIELD
NEW CAMPBELLTON DISTRICT

Location	**Mine**	**Seam[s]**	**Dates**	**Production**	**Peak Year & Tonnage**	
New Campbellton	Anglo	Six Foot	1867-1924	174,426	1896 -	16,483
Boularderie Island	Black Rock		1867-1874	551	1867 -	209
Total — New Campbellton District				174,977		

INVERNESS COUNTY COALFIELDS

There are four coal basins on the west coast of Cape Breton, extending a distance of 35 miles. These are the Port Hood, Mabou, Inverness, and St. Rose-Chimney Corner basins. The Port Hood and St. Rose-Chimney Corner fields belong to the Riversdale Group, and the Inverness and Mabou fields belong to the younger Pictou Group.

Port Hood Coalfield (Figure 4)

The coals of this area belong to the Riversdale Group of the Lower Pennsylvanian and are high volatile "B" bituminous, with the ash content ranging from 6% to 45% and the sulphur content up to 14%, with calorific values from 9,100 B.T.U. to 11,000 B.T.U. per pound. The area is a southwesterly plunging syncline with axis extending from Cape Linzee through Hood Island and Henry Island and the coal beds extending along the coastline through Harbour View and Port Hood and dipping westerly at 20 to 35 degrees. There are minor folds and a thrust fault on the northern limb of the syncline, and a fault to the southeast of the 6-foot seam on the southern limb.

The area has only one seam that is economically mineable, the 6-foot seam, which outcrops along the shore line from just south of Harbour View to Isthmus Point. The next major seam is the 5-foot seam, which is stratigraphically 350 feet above the 6-foot seam, but the amount and quality of this seam is not well known. There are several other smaller seams above and below the 6-foot seam, but none have been mined. Submarine coal reserves are probable in the field.

Mining History: Mining was first started in 1865 by the Cape Breton Coal Mining Company in Port Hood with the company operating for only five years. In 1899, the mine was reopened and worked until 1958. Other mines operated over the years, but none were lasting and mining was not extensive. The last operating mine was the Chestico Mine in Port Hood which took over operations of the old Harbour View mine and extracted coal until 1966.

Mabou Coalfield (Figure 5)

The Mabou coals are Upper Pennsylvanian, Pictou Group, and are either sub-bituminous "A" or high volatile "C" bituminous. The best seam in this field is cut off by the faulted edge of the basin before it outcrops, but has been cut by two drill holes at the shore. Here, 8'10" of coal has 1.5% sulphur and 6.2% ash. The next overlying seam, worked seaward for 1,800 feet at the turn of the century, was sampled at 1.9% sulphur and 4.8% ash. Portions of this field could provide an important reserve of metallurgical coal.

The Mabou field at Coal Mine Point consists of a large westerly plunging syncline with minor anticlinal and synclinal structures on the north limb, approximately perpendicular to the coast. The seams outcrop on the limbs of the syncline at Coal Mine Point and have a very small areal extent due to faults which are numerous in the area. Between Coal Mine Point and Finlay Point is a large anticline and several of the upper seams outcrop on the north limb of this anticline at Finlay Point.

Coal Seams: There are approximately fifteen coal seams in this field but only a few have been mined. On the south side of Coal Mine Point several of the larger seams outcrop and they dip steeply north. There are four major seams here, of which two were mined at the turn of the century.

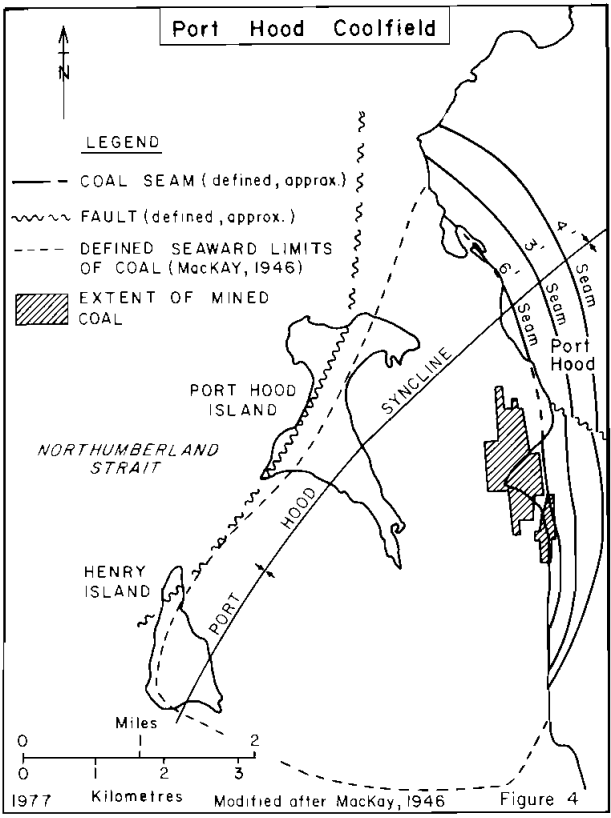


Figure 4

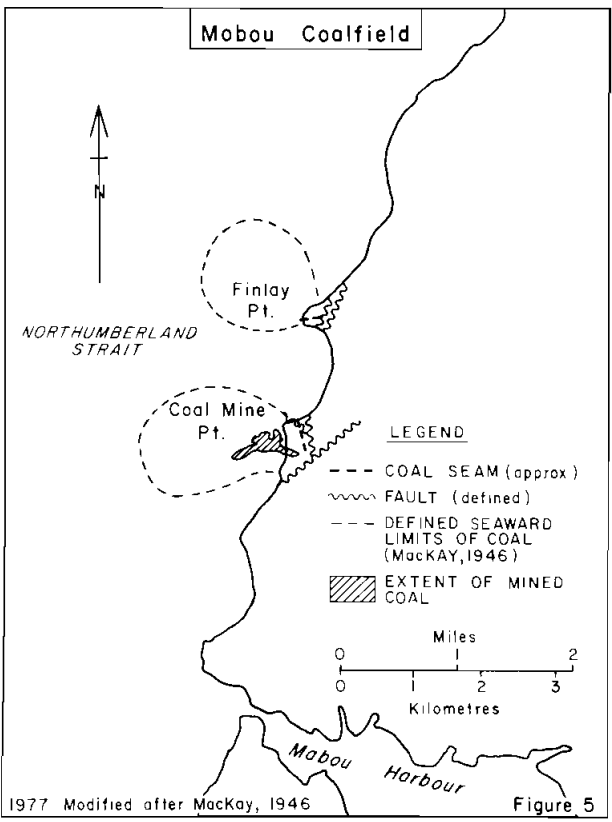
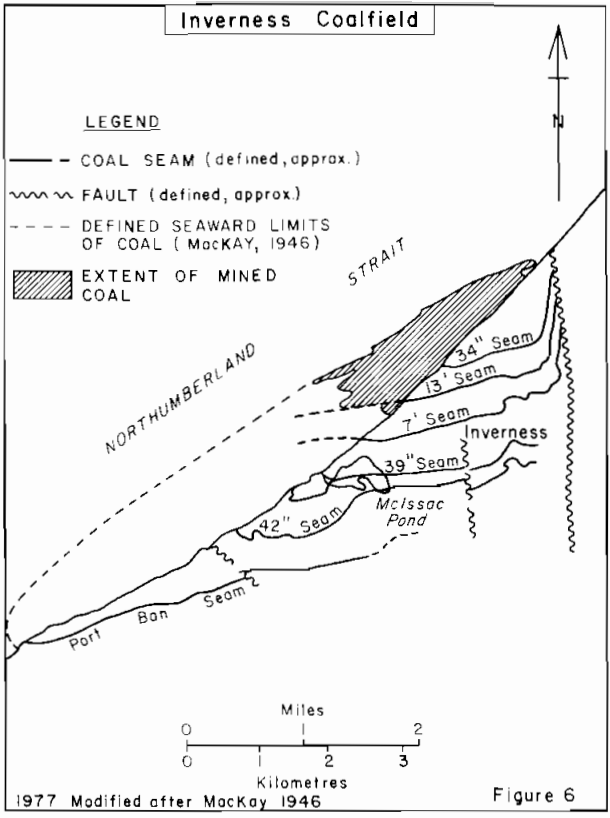
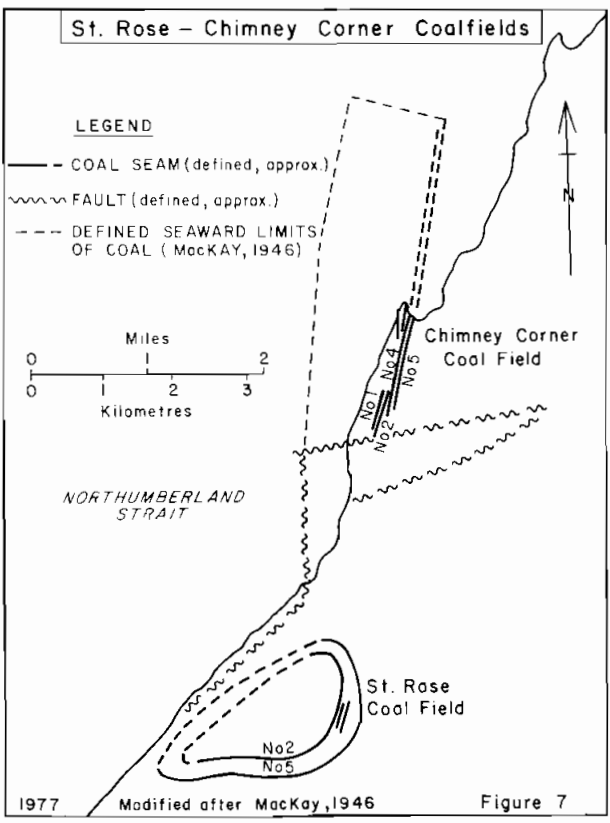


Figure 5


Inverness Coalfield
LEGEND
COAL SEAM (defined, approx.)
FAULT (defined, approx.)
DEFINED SEAWARD LIMITS OF COAL (MacKAY, 1946)
EXTENT OF MINED COAL
N
STRAIT
NORTHUMBERLAND
34" Seam
13' Seam
7' Seam
Inverness
39" Seam
McIssac Pond
42" Seam
Seam 2
Port Ban
Miles
0 1 2
0 1 2 3
Kilometres
1977 Modified after MacKay 1946
Figure 6


St. Rose – Chimney Corner Coalfields
LEGEND
COAL SEAM (defined, approx.)
FAULT (defined, approx.)
DEFINED SEAWARD LIMITS OF COAL (MacKAY, 1946)
N
Miles
0 1 2
0 1 2 3
Kilometres
Chimney Corner Coal Field
No1
No4
No5
No2
NORTHUMBERLAND STRAIT
St. Rose Coal Field
No2
No5
1977
Modified after MacKay, 1946
Figure 7

Stratigraphic Sequence of Coal Seams

Seam Name and Thickness	Stratigraphic Interval*
11-foot	0′
7-foot	50′
8-foot	70′
15-foot (high sulphur)	440′
5-foot (high sulphur)	480′
several minor seams averaging 3′	
New 11-foot	1000′

The upper 11-foot seam and the smaller seams beneath the 5-foot seam are all very poor in quality. The new 11-foot seam encountered 925 feet stratigraphically below the 8-foot seam is found to have the best quality coal in the Mabou field. The 7-foot and 8-foot seams were worked in the Mabou Mine, where the main slope extends out under the Gulf of St. Lawrence for about 1,800 feet and goes to a depth of about 800 feet below sea level.

Mining History: Operations began in 1899, and ended in 1909 after five miles of extensive underground development had been done on Coal Mine Point and out under the sea. The mine was closed at that time due to flooding. Between 1947 and 1954 small scale mining and prospecting took place, and in 1961 the Mabou Mine, operated by the Scotian Coal Company Limited, reopened a shaft on the 15-foot seam south of the Coal Mine Point, near the old Mabou Mine #3 slope. The shaft was cleaned out and a level was started, but the mine, called the Tijer, was abandoned in 1964.

Inverness Coalfield (Figure 6)

The Inverness coals are in the Pictou Group of the Upper Carboniferous, and are sub-bituminous. The ash content varies from 6% to 25%, the sulphur content up to 10%, and calorific values have an average of 12,500 B.T.U. per pound. Ten seams outcrop in the field, dipping seaward at angles of 15 degrees to 30 degrees. The seams have a shallow dip at the outcrop, but steepen considerably at depth, and adjacent to the Plaster Fault where the seams arecut off, they are almost vertical at their outcrops. Most of the seams have been worked by prospect or bootleg pits and five of the seams — the 34″, 13-foot, 7-foot, 42″ and Port Ban (upper) seams, have been mined. Most of the mining was concentrated on the 13-foot and 7-foot seams, and these start to dip steeply at about 1,000 feet, terminating against a reverse fault between 2,000 feet and 2,500 feet. The coalfield follows the shore in a narrow strip from Inverside on the northeast to the mouth of Rankin Brook in the southwest, approximately six miles along the shore The highest quality coal in all of the seams, except the Port Ban seam, is found in the area under Inverness town, and Big River and McLellan Brook.

*The stratigraphic interval given for any of these coalfields represents an average of the thickness of strata between coal seams and their depth, taken from the highest seam in the field, whether it is on the surface or not.

Stratigraphic Sequence of Coal Seams

Seam Name and Thickness	Stratigraphic Interval *
34" seam	0'
16" seam	50'
13-foot seam	263'
6" seam	375'
21" seam	520'
7-foot seam	590'
18" seam	1040'
39" seam	1155'
42" seam	1225'
Port Ban seam (8'4" in two sections of 40" and 24")	1972'

Mining History: The Inverness field has been producing coal since 1865 with most of the mines working on the 7-foot and 13-foot seams. The Provincial Government took over the field in 1933, and the mines continued to operate into the 1950's There were four mines operating for periods of several years each in the early 1960's.

St. Rose-Chimney Corner Coalfield (Figure 7)

The St. Rose-Chimney Corner coalfields are the northern-most of the western Cape Breton coalfields and the coals are Lower Pennsylvanian, Riversdale Group. The St. Rose-Chimney Corner Basin is divided into two sections: the St. Rose field to the south and the Chimney Corner field located two and one half miles to the north. The ash and sulphur contents of the St. Rose coal average 11.8% and 7% respectively and the calorific value averages 11,660 B.T.U. per pound. The Chimney Corner reserves lie largely under the sea, and have an ash content of 8%, a sulphur content of 4%, and a calorific value of 11,000 B.T.U. per pound.

The Chimney Corner field and the St. Rose field are separated by a down-faulted block in which coal could occur at depth. The St. Rose coals form a synclinal basin and coal outcrops around the eastern side of the basin. The Chimney Corner coal strikes north-south and dips west at an average of 30 degrees. No submarine coal occurs in the St. Rose field, but the seams at Chimney Corner extend seaward.

In the Chimney Corner field, the seams cover an area about one mile long and 1,000 feet wide dipping relatively steeply at their outcrop, but flattening to about 18 degrees down dip. The following is a general stratigraphic section of the seams.

Seam No.	Thickness	Stratigraphic Interval *
No. 1	1.7'	0'
No. 2	3.0'	177'
No. 4	4.8'	267'
No. 5	3.5'	387'

The St. Rose coal seams dip from 17 to 30 degrees in a westerly direction. A general stratigraphic section of the seams is as follows:

Seam No.	Thickness	Stratigraphic Interval *
No. 1	4.0′	0′
No. 2	8.3′	195′
No. 3	0.4′	266′
No. 4	2.0′	307′
No. 5	8.0′	469′

Mining History: Due to the large outcrop area, seams No. 4 and No. 5 in the Chimney Corner field have been worked extensively. The No. 4 seam was worked up to 1873 when the surface buildings were destroyed by fire and in 1919 a slope was started on No. 5 seam known as the Chimney Corner mine. In the St. Rose field, other than pits on the No. 1 and No 3 seams and a short slope on the No. 3 seam, the only consistent mining operation to this date has been the Evans Mine which has operated on both the No. 2 and No. 5 seams, but is presently mining the No. 5 seam.

INVERNESS COUNTY

PORT HOOD COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
Port Hood	Port Hood	Port Hood	1875-1958	901,510	1908 - 99,700
Port Hood	Chestico		1959-1966	167,426	1965 - 36,551
Total Coalfield Production				1,068,936	

MABOU COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
Mabou	Mabou	13 FT.; 14 FT.; 8 FT.; 7 FT.	1887-1951	68,714	1908 - 19,250
Mabou	Tijer		1961-1964	960	1964 - 447
Total Coalfield Production				69,674	

ST. ROSE-CHIMNEY CORNER COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
St. Rose	Evans	Nos. 2 & 5	1946-1976	750,285	1965 - 49,397
Margaree	St. Rose	No. 2	1918-1943	23,222	1941 - 3,394
Chimney Corner	Chimney Corner	Nos. 4 & 5	1867-1952	13,491	1872 - 5,157
Total Coalfield Production				786,998	

INVERNESS COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Inverness	Broad Cove		1887-1905	434,786	1904 -	208,484
Inverness	Rankin		1891-1892	1,408	1892 -	1,248
Inverness	Inverness (#1&#4)	13 ft.+ 7 ft.	1903-1951	6,936,946	1911 -	291,587
Inverness	Rosebank #1		1943-1946	5,462	1945 -	2,411
Inverness	Rosebank #2	7 ft.	1947-1957	97,677	1955 -	15,530
Inverness	Rosebank #3	34 in.	1956-1961	46,794	1959 -	15,149
Inverness	Rosebank #5		1955-1957	20,657	1956 -	13,452
Inverness	MacDonald #1	7 ft.+ 34 in.	1943-1952	155,671	1948 -	30,867
Inverness	MacDonald #2	39 in + 34 in.	1948-1957	1,609	1952 -	484
Inverness	MacDonald #3	34 in.	1948-1959	130,368	1952 -	29,962
Inverness	MacDonald #5	13 ft.	1952+1957	10,045	1952 -	7,281
Inverness	Campbell #1, 2	7 ft.	1944-1961	95,006	1957 -	12,612
Inverness	McLellan	7-ft	1943-1957	34,643	1952 -	3,993
Inverness	McDonald	#7A	1944-1949	24,781	1948 -	9,015
Inverness	Beaton	34 in.	1952-1954	579	1952 -	492
Inverness	MacEachern	13 ft.	.953	277		
Inverness	Cameron	13 ft.	1962-1963	637	1963 -	357
Inverness	McIsaac	7 ft.	1963-1966	1,774	1964 -	876
Total Coalfield Production				7,999,120		

PICTOU COALFIELD

Pictou Coalfield (Figure 8) comprises the Westville, Stellarton, and Thorburn areas of mainland Nova Scotia, all of which are underlain by non-marine coal bearing strata of the Pennsylvanian Pictou Group (Stellarton Series). The Stellarton coal is high volatile "A" bituminous, while the Westville coal is medium volatile bituminous, becoming low volatile at depth. All coals in the Pictou field have low sulphur, but high ash values, and many are subject to spontaneous combustion. This coalfield is bounded by several major faults and the three coal areas are separated by faults. The coal measures occur in a series of open anticlines and synclines, trending northeast-east.

The Westville area contains the oldest coal seams in the field, in the Westville Formation. There are at least four seams, two of which have been worked quite extensively. These are the Acadia and Scott seams, which average 12 to 18 feet in thickness. The Acadia seam averages 1.2% sulphur and 12.6% ash, and the Scott 1.5% sulphur and 20.9% ash.

Seam	Average Thickness	Stratigraphic Interval*
Acadia	12'-17'	0'
Scott	12'-18'	210'
Third	5'-10'	310'
Fourth	8'	415'

The intermediate age coals, designated the Albion Formation, of the Stellarton area, include at least ten seams, with thicknesses ranging from five feet to 40 feet, five of which have been mined. Average sulphur and ash contents for the Foord and Cage seams are 0.07% and 15.9%, and 1.5% and 13.1% respectively. All of the seams in this district thicken to the northeast, the direction of their dip into a syncline.

Seam	Average Thickness	Stratigraphic Interval*
McLeod	4'-5'6"	0'
Foord	22'-34'	600'
Cage	12'-20'	780'
Third	8'-17'6"	830'
Purvis	4'6"-11'	915'
Fleming	2'6"-6'6"	1140'
McGregor	9'-5'6"	1147'
New Coal	4'6"-10'	1225'
Oil Coal	1'-2'	1350'
Norah	3'-10'	1380'

The Thornburn area contains the youngest seams in the Pictou coalfield, in the Thorburn Formation. The area is a separate shallow basin within the larger field, in which the seams outcrop on the eastern and western rims, but are cut off by faults on the north and south. There are five seams in this area that have been worked extensively, the most important of which is the McBean. This latter seam has an average sulphur and ash content of 0.85% and 13.24%.

Seam	Average Thickness	Stratigraphic Interval*
Captain	4'	0'
Millrace	3'-4'	70'
MacKay	4'	129'
Six Foot	3'-8'	704'
McBean	1'	1381'

*Average stratigraphic interval, from Bell, 1940

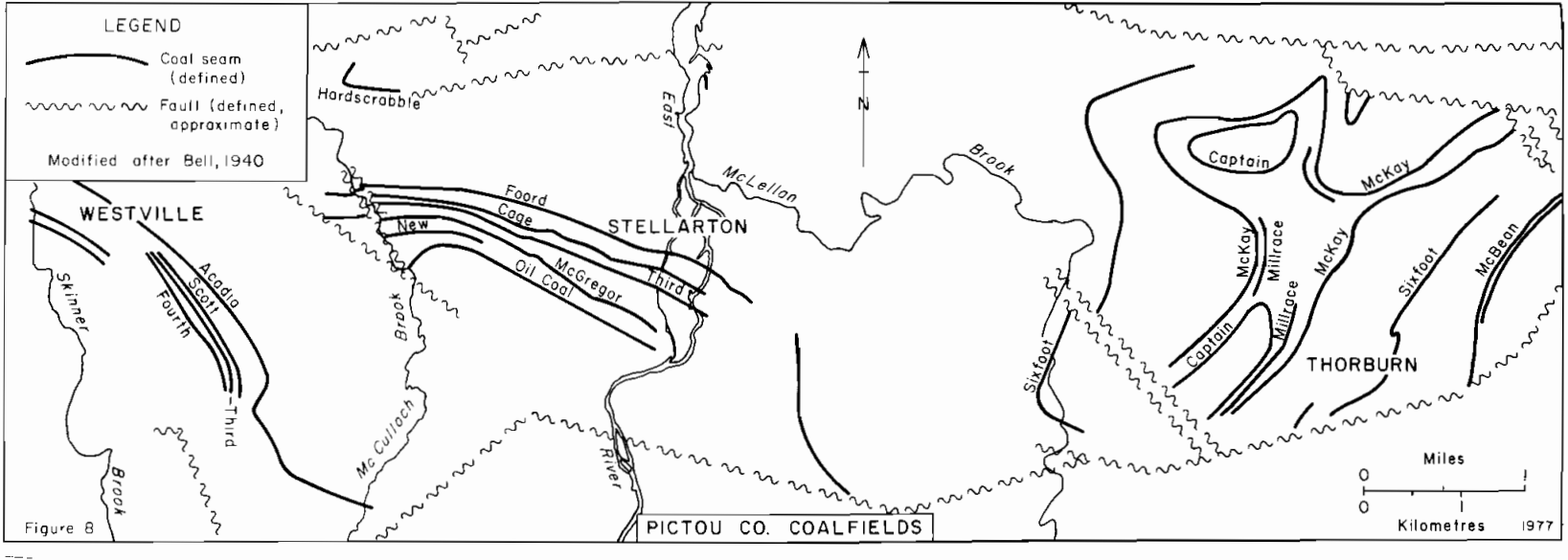

LEGEND
Coal seam (defined)
Fault (defined, approximate)
Modified after Bell, 1940
Hardscrabble
East
McLellan
Brook
N
WESTVILLE
Foord
Cage
New
STELLARTON
Oil Coal
McGregor
Third
Skinner
Acadia
Scott
Fourth
Third
Brook
McCulloch
River
Sixfoot
Captain
McKay
Millrace
McKay
Captain
Millrace
McKay
Sixfoot
McBean
THORBURN
Miles
0
1
0
Kilometres
1977
PICTOU CO. COALFIELDS

Figure 8

Mining History: Coal was discovered in the Pictou Coalfield in 1798 on McCulloch's Brook. The Foord Seam was worked in the early 1800's and the General Mining Association took over the field in 1827. Several mines were worked during the 1800's and a major problem was caused by gas explosions and subsequent fires. This caused several mines to close, although some were reopened at later dates. The earliest recorded production figures are for 1867. In 1873, the General Mining Association withdrew from the field. After this time independent companies began operations, namely, the Acadia Coal Company, and the Intercolonial Coal Mining Company in the Westville area. Mining continued sporadically in many different mines into the 1900's, with most operations ceasing by 1960. The only presently operating mine is the Drummond Mine in the Westville area.

PICTOU COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Stellarton	Allen	Foord/Cage	1908-1951	5,245,466	1927 -	230,273
Stellarton	Albion	Main/Deep/Cage/Foord/ Third/MacGregor	1867-1942	8,218,986	1915 -	283,275
Stellarton	Acadia #1	Acadia	1920-1925	265,836	1923 -	94,073
Stellarton	Acadia #7	Cage/Third	1936-1947	625,909	1941 -	97,937
Stellarton	MacGregor/Albion	MacGregor/Fleming	1912-1957	3,242,644	1951 -	248,367
Stellarton	Linacy	MacKay	1960-1963	3,484	1961 -	1,335
Westville	Acadia Colliery	Acadia	1867-1920	12,747,274	1920 -	529,641
Westville	Intercolonial/Drummond Mines		1867-1976	15,357,840	1908 -	315,590
Westville	Intercolonial/Drummond #1	Main/Westville	1923-1969	2,691,687	1940 -	85,254
Westville	Intercolonial/Drummond #2	2nd/Scott/Westville	1923-1976	3,801,226	1947 -	124,547
Westville	Intercolonial/Drummond #5	Main/Westville	1920-1945	649,693	1920 -	34,534
Westville	Black Diamond		1888-1891	109,439	1889 -	34,015
Westville	Wadden	Main	1946-1953	17,538	1947 -	3,134
Thorburn	Greenwood Colliery		1918-1966	905,278	1923 -	59,901
Thorburn	Greenwood #1	6 ft.	1926-1930	168,216	1926 -	47,993
Thorburn	Greenwood #2	MacKay	1926-1966	323,127	1957 -	24,344
Thorburn	MacBean/Vale	MacBean/Greener/6 ft	1867-1971	5,181,683	1965 -	241,176

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Thorburn	Acadia #2	MacBean	1920-1921	53,437	1920 -	33,945
Thorburn	Acadia#3	6 ft.	1920-1939	1,517,822	1929 -	132,191
New Glasgow	Acadia #5	3½ ft.	1921	1,109		
New Glasgow	German/Marsh	Marsh	1867-1909	310,520	1904 -	62,611
New Glasgow	Fox Brook	Westville/Main	1923	75		
Coalburn	Milford/Acadia	Captain/Marsh	1916-1947	685,977	1935 -	57,291
Coalburn	Milford #1/Acadia #4	Captain	1920-1941	269,219	1940 -	45,183
Coalburn	Milford #2/Acadia #6	Marsh	1938-1947	203,083	1942 -	37,043
East River	Montreal & Pictou	MacBean/MacKay	1867	421		
East River	MacKay	MacKay	1867-1870	1,170	1868 -	819
East River	East River	MacKay	1887-1892	9,735	1891 -	2,925
Middle River Pictou	Nova Scotia	Acadia	1867-1878	339,434	1873 -	85,908
Coal Brook	Montreal & New Glasgow		1868	200		
Merrigomish	Merigomish		1868-1869	145	1969 -	125
Lease 95	Hillcrest		1936	668		
Total Coalfield Production				62,942,541		

SPRINGHILL AND JOGGINS-RIVER HEBERT COALFIELDS

In Cumberland County, two coalfields known as the Springhill Coalfield and the Joggins-River Hebert Coalfield have been worked (Figure 9). The workable seams in both areas are of the same broad geological age, being confined to the Cumberland Group of the Middle Pennsylvanian rocks. The Springhill coalfield has been extensively worked to a vertical depth of some 4,000 feet and only the inferior quality coal with an ash content of 18-20% has not been mined. In the Joggins area, the seams are thin, with a maximum thickness of three feet, and are considerably faulted. The ash and sulphur contents are 18% and 5% respectively, with a calorific value of 10,900 B.T.U. per pound for the Joggins field.

The Cumberland Basin is a syncline plunging southwest and the Joggins-River Hebert coalfield extends along the northwest limb from the shore of Chignecto Bay to an area two miles north of Springhill Junction. The seams strike west and dip southerly at angles of 20-40 degrees. Local faults, generally small, cut across the seams at various places. The Springhill coalfield extends around the eastern end of the syncline to the southeastern limb, which covers the area in and around the town of Springhill. The seams strike according to local minor folds and dip generally southeast to south at angles of 10-30 degrees. Extensive local faulting occurs across the seams.

Springhill Coalfield

Seams	Average Thickness	Stratigraphic Interval
No. 3	8′	0′
No. 1	8′	200′
No. 2	9′	300′
No. 7	4′	725′
No. 6	5.5′	800′

Joggins-River Hebert Coalfield

Seams	Average Thickness	Stratigraphic Interval
Joggins-River Hebert Area		
Joggins	1.5′	0′
Queen	2′	100′
Kimberly	2′	575′
Forty Brine	2.5′	900′
Fundy	2.5′	1225′
Jubilee-Maccan Area		
Phoenix (Joggins)	1.5′	0′
Queen	1.5′	25′
Rector (Lawson)		100′
Jubilee		200′
Barnes (Kimberly)	2.3′	300′
(Chignecto)	3′	
Shaw (Forty Brine)	2′	475′

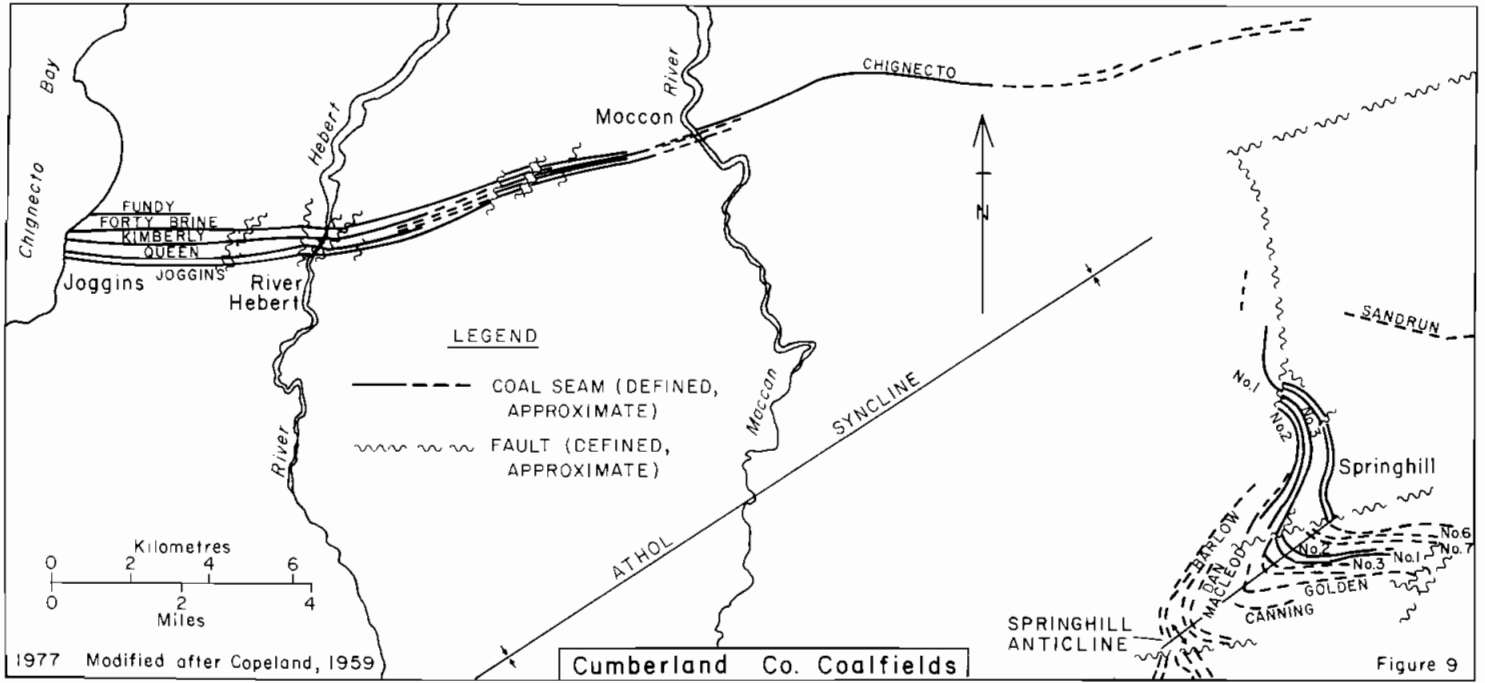

Chignecto Bay
Hebert River
Moccon River
CHIGNECTO
FUNDY
FORTY BRINE
KIMBERLY
QUEEN
JOGGINS
Joggins
River Hebert
N
LEGEND
COAL SEAM (DEFINED, APPROXIMATE)
FAULT (DEFINED, APPROXIMATE)
Moccon River
SYNCLINE
ATHOL
SANDRUN
No.1
No.2
No.3
Springhill
BARLOW
MACLEOD
No.6
No.7
No.7
No.3
No.1
GOLDEN
CANNING
SPRINGHILL ANTICLINE
Kilometres
0 2 4 6
0 2 4
Miles
1977 Modified after Copeland, 1959
Cumberland Co. Coalfields

Figure 9

Mining History: The first recorded mining in the Cumberland Basin dates to the early eighteenth century when the "Old French Workings" were mined in Joggins. The General Mining Association had the rights to coal mining in this area, but did not operate a mine until 1847. In 1858, the General Mining Association relinquished all rights to the Cumberland coalfields except for small grants in Joggins and Springhill. At this time several small production mines were opened by independent operators. In 1879, the General Mining Association grant in Springhill was taken over by the Springhill and Parrsboro Railway Company, which in turn was succeeded by the Cumberland Railway and Coal Company in 1884 and the Dominion Coal Company in 1911.

The Dominion Coal Company continued to work the Springhill mines through the 1900s with the last operating mining closing by 1970. A great problem with the coal mining at Springhill has been the occurrence of "bumps" — a bursting of the coal or rock strata in the mine levels. Bumps have occurred over the years in most of the mines; however, the No. 2 mine has had the most significant bumps with a severe disaster in 1958 in which 76 men were killed.

At Joggins and River Hebert, the Joggins Coal Company and the Maritime Coal, Railway and Power Company Limited were the largest producers. Most of the mines in the Joggins-River Hebert field worked until the 1940s with several closing in the 1960s, and one mine, the River Hebert/Cochrane Mine, is still operating.

SPRINGHILL COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Springhill	No. 1	Nos. 1&3	1873-1879 and 1934-1970	3,364,981	1941 -	188,768
Springhill	No. 2	No. 2	1915-1966	11,931,787	1955 -	409,397
Springhill	No. 3	Nos. 3&7	1915-1927 and 1965-1968	284,952	1915 -	134,705
Springhill	No. 4	Nos. 1,2,6&7	1934-1956 and 1970	3,868,602	1955 -	265,546
Springhill	No. 6	No. 6	1920-1937	1,516,894	1935 -	138,903
Springhill	No. 7	No. 7	1920-1934	1,019,702	1929 -	128,986
Springhill	Ross & Tabor		1960	55		
Springhill	Spence		1960	309		
Total Coalfield Production				35,345,860		

JOGGINS-RIVER HEBERT COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
Joggins	Joggins	Joggins/Fundy	1867-1966	3,133,049	1916 -	201,915
Joggins	Fundy Mines	Fundy/Forty Brine	1903-1934	147,120	1932 -	16,135
Joggins	Fundy No. 6	Fundy	1929-1930	8,722	1930 -	5,579
Joggins	Maple Leaf Mines	Joggins Bench	1920-1943	988,418	1929 -	87,326
Joggins	Maple Leaf No. 4	Joggins Bench	1929-1939	607,202	1929 -	87,326
Joggins	Maple Leaf No. 5	Joggins Bench	1930-1931 and 1943	11,877	1943 -	4,726
Joggins	Casey	Joggins Bench	1923	4,053		
Joggins	Bayview	Queen	1923	25,770		

Joggins	Bayview No. 8	Forty Brine	1939-1961	2,092,390	1943 -	127,873
Joggins	Trestle Brook	Fundy	1925-1928	3,156	1927 -	1,378
Joggins	Seashore	Fundy	1934-1943	124,488	1935 -	27,360
Joggins	Green Crow	Forty Brine	1935	616		
Joggins	Hillcrest	Forty Brine	1941-1942	130,903	1942 -	103,548
Joggins	Lower Cove	Fundy/Hardscrabble	1904-1915	25,709	1904 -	9,037
Total — Joggins Area				7,303,473		
River Hebert	Cochrane	Kimberly	1951-1960	236,915	1952 -	29,387
River Hebert	River Hebert/Cochrane	Kimberly	1960-1976	689,074	1965 -	62,641
River Hebert	Strathcona Mines		1895-1947	805,995	1944 -	72,724
River Hebert	Strathcona #1	Kimberly	1924-1928	32,191	1927 -	8,674
River Hebert	Strathcona #2		1922-1947	603,440	1944 -	72,724
River Hebert	Strathcona #3		1930-1931	16,435	1931 -	11,703
River Hebert	Victoria Mines		1867-1941	1,116,721	1932 -	75,990
River Hebert	Victoria #1	Victoria	1921-1930	140,059	1921 -	32,931
River Hebert	Victoria #2	Queen	1915-1930	200,292	1929 -	47,201
River Hebert	Victoria #4	Boston	1931-1941	557,319	1935 -	75,451
River Hebert	Sterling (No. 3 Mine)	Kimberly	1917-1923	80,013	1922 -	17,624
River Hebert	Marsh	Kimberly	1920-1929	94,947	1924 -	15,614
River Hebert	Riverside	Kimberly	1926-1951	108,013	1948 -	26,967
River Hebert	Kimberly	Kimberly	1936	1,853		
River Hebert	Milner	Fundy	1883-1935	27,787	1934 -	4,850
River Hebert	National	Fundy	1922-1925	10,211	1923 -	9,761
River Hebert	Jubilee	Forty Brine	1897-1951	16,937	1918 -	6,791

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage	
River Hebert	Beech Grove	Joggins Bench & Fall	1922	7,652		
River Hebert	Boston	Victoria	1924-1929	46,642	1925 -	11,152
River Hebert	Beech Hill	Renfrew/Beech Hill	1940-1943	15,899	1941 -	7,057
River Hebert	Arseneau	Queen	1941-1942	12,243	1942 -	6,489
River Hebert	Seaman		1877	530		
River Hebert	Waddell		1943-1952	2,572	1944 -	773
River Hebert	Filor		1951-1955	35,628	1952 -	11,007
Total — River Hebert Area				4,859,368		
Maccan	Northern/Scotia	North/Chignecto/ Twin/Main	1872-1936	53,700	1918 -	5,341
Maccan	Chignecto	North	1867-1948	362,030	1909 -	50,350
Maccan	Eastern		1909-1919	16,487	1910 -	6,590
Maccan	Carter	Lawson	1922-1927	32,068	1925 -	8,489
Maccan Station	Maccan/Lawson	Lawson No. 3	1867-1940	93,183	1905 -	38,667
Maccan River	Black Diamond		1911-1915	11,974	1915 -	7,333
Chignecto	Great Northern	Chignecto	1910	882		
Athol	Athol	Chignecto	1921-1923	33,854	1922 -	13,079
St. George	St. George	Chignecto	1920-1921	37,639	1920 -	21,942
Hoeg Road	Fenwick	Chignecto	1917-1929	35,713	1918 -	17,173
Minudie	Minudie	No. 1	1880-1916	614,034	1913 -	63,327
Total — Maccan Area				1,291,564		
Joggins-River Hebert Total Coalfield Production				13,454,405		

KEMPTOWN-DEBERT COAL AREA

Several outcroppings of coal occur in the Kemptown and Debert areas of Colchester County. This coal is considered to be Upper Pennsylvanian, Pictou Group in age, and the best seam in the area has a thickness of up to five feet. Three additional seams below this one have been recorded, but none are considered to be of value. The coal is classified as low volatile bituminous, with an average ash content of 17% and an average of 12,200 B.T.U. per pound. The limited amount of mining and the diamond drilling that has been done in this area indicate that the seams are badly disturbed by folds and broken by faults.

Mining History: Coal was known to occur on the Debert River as early as 1836; however, it was not until 1903 that the Colchester Coal and Railway Company opened a slope on the Number 1 or 5-foot seam. This mine produced for several years, closing in 1910. Minor production was recorded in 1936 and an unsuccessful attempt to dewater the mine was made in 1945. A mine at Kemptown produced coal between 1920 and 1932, and very minor coal was taken from a seam at Belmont in 1925.

RICHMOND COUNTY COALFIELD

The coals in Richmond County are lower Pennsylvanian, Riversdale Group, and several seams from two feet to 11 feet in thickness have been noted in separate areas around the River Inhabitants Basin. Two old analyses of the Second Seam show ash content of 7.63% and 13.5% The seams dip at very steep angles and appear almost vertical in places.

Mining History: Several shafts, pits and tunnels were sunk on various seams in the 1800's; however, other than the Richmond Mine, no production was realized. In 1928, the Tidewater Fuel and Navigation Company opened up a slope at Whiteside and produced for that year only. Only one other operation, the Basin Mine, produced in this area.

GLENGARRY [LOCH LOMOND] COAL AREA

A small coal basin occurs in the Glengarry area of Cape Breton County. The rock type in the area is Upper Pennsylvanian, Pictou Group. Four seams outcrop along the western side of the basin and they dip easterly at 13 to 18 degrees. The quality of the coal is not known.

No stratigraphic depths of the coal seams in this area are available.

Seams	Average Thickness
No. 1	1'-2'6"
No. 2	4'
No. 3	?
No. 4	?

Mining History: The Dominion Iron and Steel Company sank several shafts prior to 1920, but no production records exist for coal extracted. A small production mine worked in the 1930's, but no operations have existed in the field since that time.

KEMPTOWN-DEBERT COAL AREA

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
Debert	Debert	#1	1908-1909 and 1936	5,472	1908 - 3,951
Kemptown	Riversdale		1920-1932	364,860	1924 - 220,786
Belmont	Coolen	Coolen	1925	249	
Total Coalfield Production				369,581	

RICHMOND COUNTY COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
Port Malcolm	Richmond		1868-1908	2,538	1908 - 2,500
Whiteside	Tidewater		1928	900	
Morash Point	Basin		1922-1923	1,440	1922 - 1,320
Total Coalfield Production				4,878	

GLENGARRY [LOCH LOMOND] COALFIELD

Location	Mine	Seam[s]	Dates	Production	Peak Year & Tonnage
Glengarry	Lawler	No. 2	1929-1938	2,879	1930 - 603
Total Coalfield Production				2,879	

COLCHESTER COUNTY

RICHMOND COUNTY

CAPE BRETON COUNTY

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