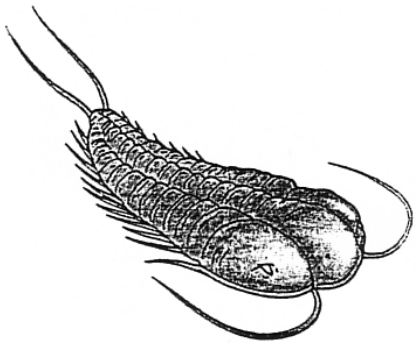
MANAGEMENT PLAN



FORTUNE HEAD

ECOLOGICAL RESERVE

PARKS AND NATURAL AREAS DIVISION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

1992

TABLE OF CONTENTS

1.0 FORTUNE HEAD ECOLOGICAL RESERVE: GEOLOGY AND PALEONTOLOGY

1.1 Location and Importance

Fortune Head is a minor headland located approximately 1.6 kilometres west of the town of Fortune on the southwestern tip of the Burin Peninsula (Figure 1). A portion of the rock section exposed along the cliffs at Fortune Head has been designated (1992) by the International Union of Geological Scientists (IUGS) as a global stratotype. It represents the boundary between the Precambrian era and Cambrian period, approximately 530 million years ago (Narbonne, 1987).

The Precambrian-Cambrian boundary marks a fundamental change in earth history, the first appearance of skeletal and bioturbating organisms. A significant “modernization” of marine biotas occurred during the Precambrian-Cambrian boundary interval. Trace fossils which exhibit more efficient utilization of food became more diverse and abundant during this interval. Comparable trends in diversity and abundance during the period when skeletalized animals appeared reflect the development of metazoan body plans and higher level taxa, ecological niches and protective strategies, that characterize Phanerozoic marine communities (Narbonne et al, 1988). Three candidate stratotypes have been suggested for the Precambrian-Cambrian boundary. They include rock sections in Siberia (USSR), Meischucum (China), and Fortune Head (Newfoundland). The rock section exposed at Fortune Head has a number of distinct advantages: its extreme accessibility; the apparent absence of disconformities or marked facies changes in the boundary interval; and, the presence of a distinctly Precambrian fossil assemblage in the underlying strata (Harlaniella podolica zone). Because the siliciclastic deposits in which the fossils of Fortune Head occur are common for this period throughout the world, this horizon has excellent prospects for global correlation (Narbonne, 1987).

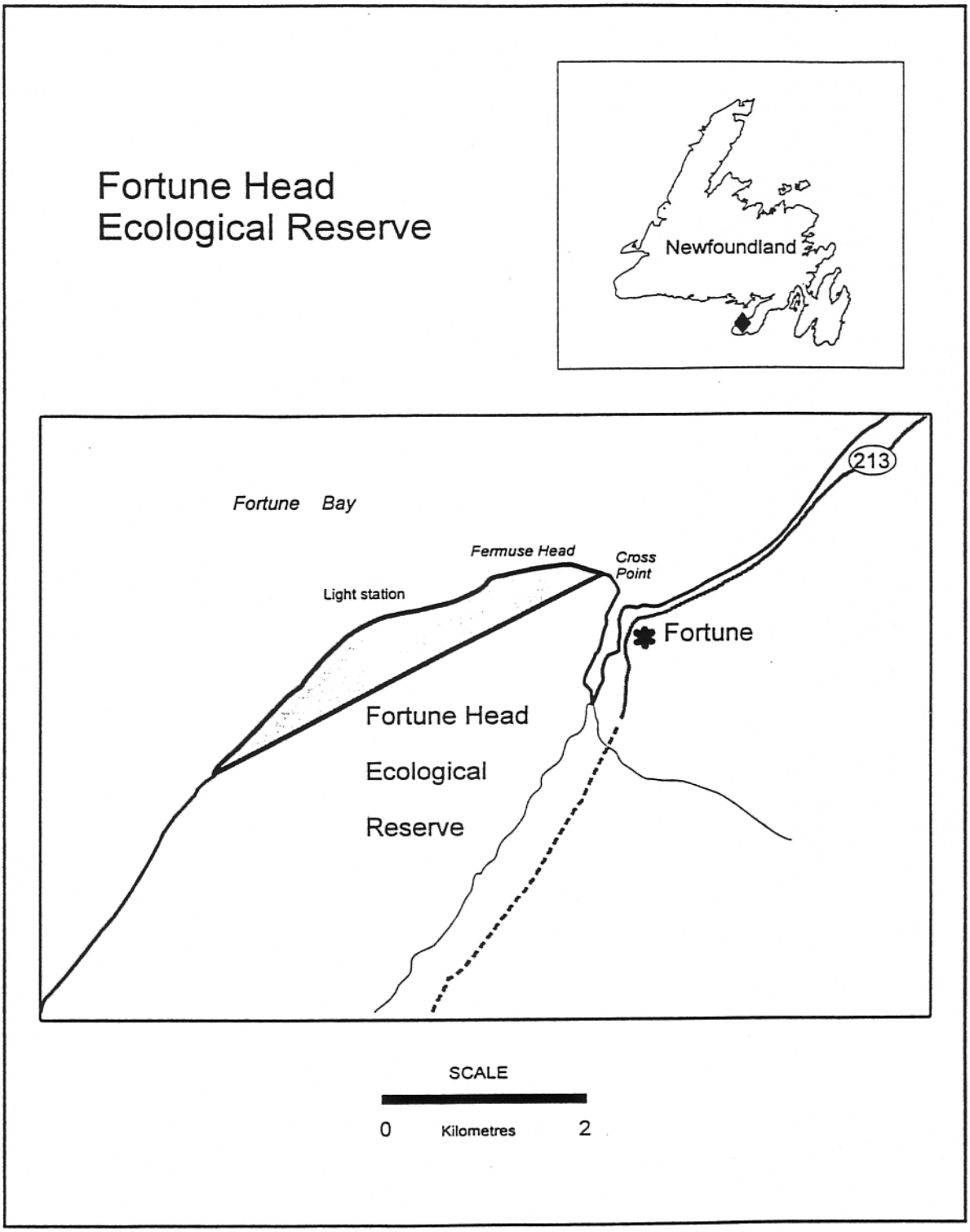


Figure.1 Location of the Fortune Head Ecological Reserve.

At Fortune Head, fossils are abundant and include trace fossils, small shelly fossils, Vendotaenid algae, soft-bodied megafossils and microfossils. The Precambrian-Cambrian boundary is placed at the first appearance of complex Phanerozoic-type trace fossils (Phycodes pedum zone), which approximately corresponds with the first appearance in the section of simple small, shelly fossils (Sabellidites cambriensis interval).

1.2 Regional Geology

The Burin Peninsula of southeastern Newfoundland forms part of the Avalon zone, one of four major tectonostratigraphic subdivisions of the Appalachian Orogen in the Province (Figure 2). The Avalon zone was originally part of Gondwana, a continental plate that included parts of Europe and Africa. This plate was situated along the southern side of an ancient ocean, Iapetus. The geology of the Avalon zone records the effects of Late Precambrian and Early Palaeozoic Appalachian Orogeny which has been linked to the generation and destruction of the ancient Iapetus Ocean (H. Williams, 1979).

There are stratigraphic variations across the Avalon zone (Figure 3 and 4). On the southern Burin Peninsula the sequence begins with the Burin Group, a series of mafic pillow lavas, volcanigenic sediments, shales and limestones. A 1500 metre thick sill, the Wandsworth Gabbro, dated at 763 ± 2 Ma intrudes the Burin Group. Overlying the Burin Group is the Marystown Group, a thick subaerial succession of bimodal volcanics, mostly acidic pyroclastics, and subordinate volcaniclastic sediments. On the northern part of the peninsula, rocks equivalent to those of the Marystown Group have been dated at 608 ± 25 Ma (U-PB in zircons, Odom, 1980).

The Marystown Group is overlain disconformably by a continuous sequence of siliciclastic rocks that span the Precambrian-Cambrian boundary (Figure 5); in ascending order, the Recontre, Chapel Island and Random formations. The redbed conglomerates, sandstones and shales of the Recontre Formation were deposited in a variety of fluvial and marginal marine settings. The sandstones, silts tones and minor limestones of the Chapel Island Formation were deposited in near-shore and shelf environments. The sandstones, shales, and quartzites of the Random Formation were deposited in tidally dominated near-shore and shoreline environments.

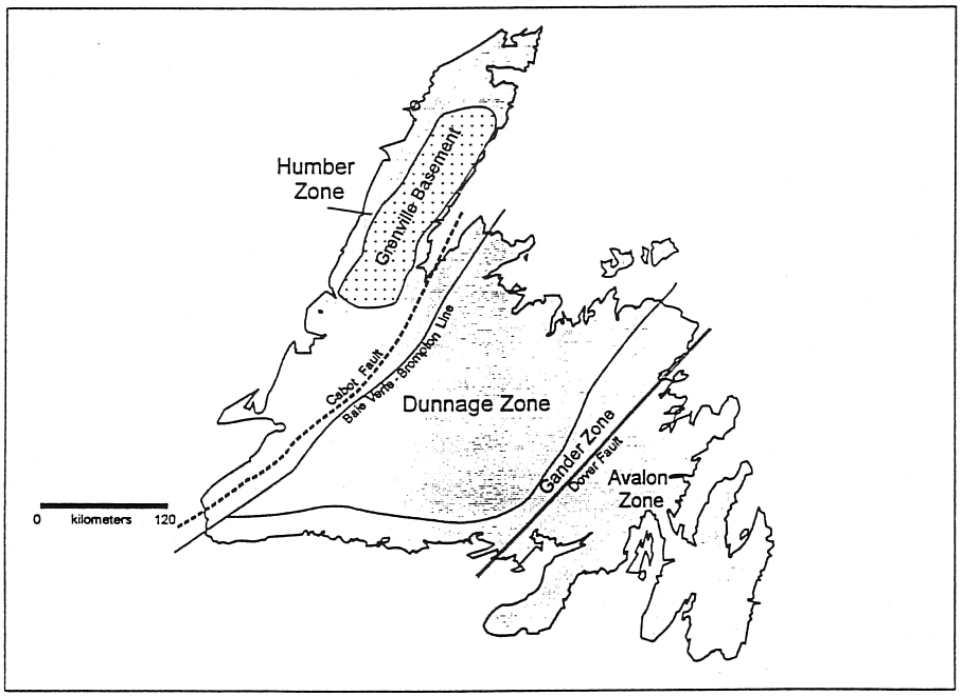


Figure 2. The four major tectonostratigraphic divisions of the Island of Newfoundland (after Williams, 1979).

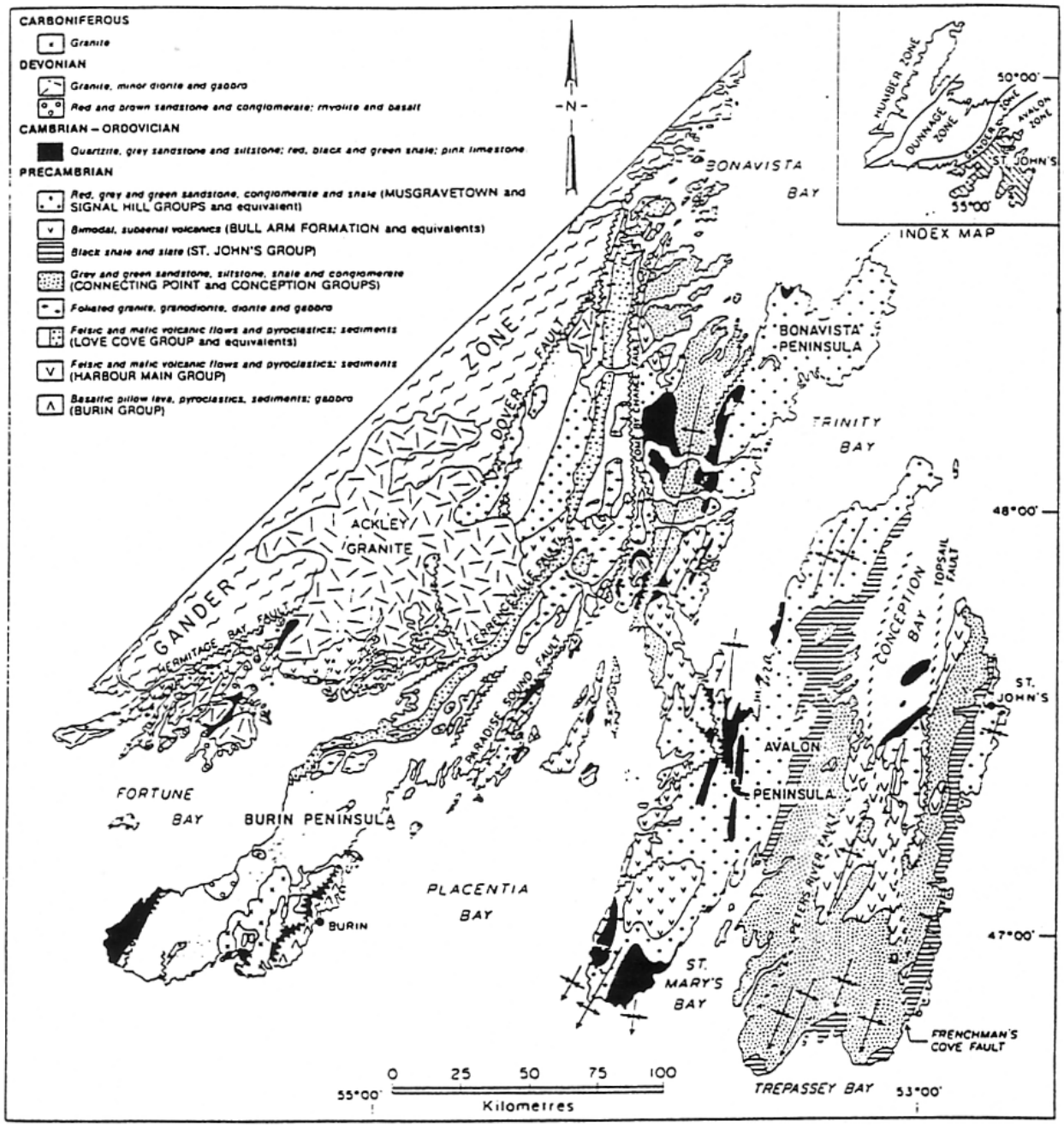


Figure 3. The regional geology of the Avalon Zone (after King and O Brien in O Brien et al, 1988).

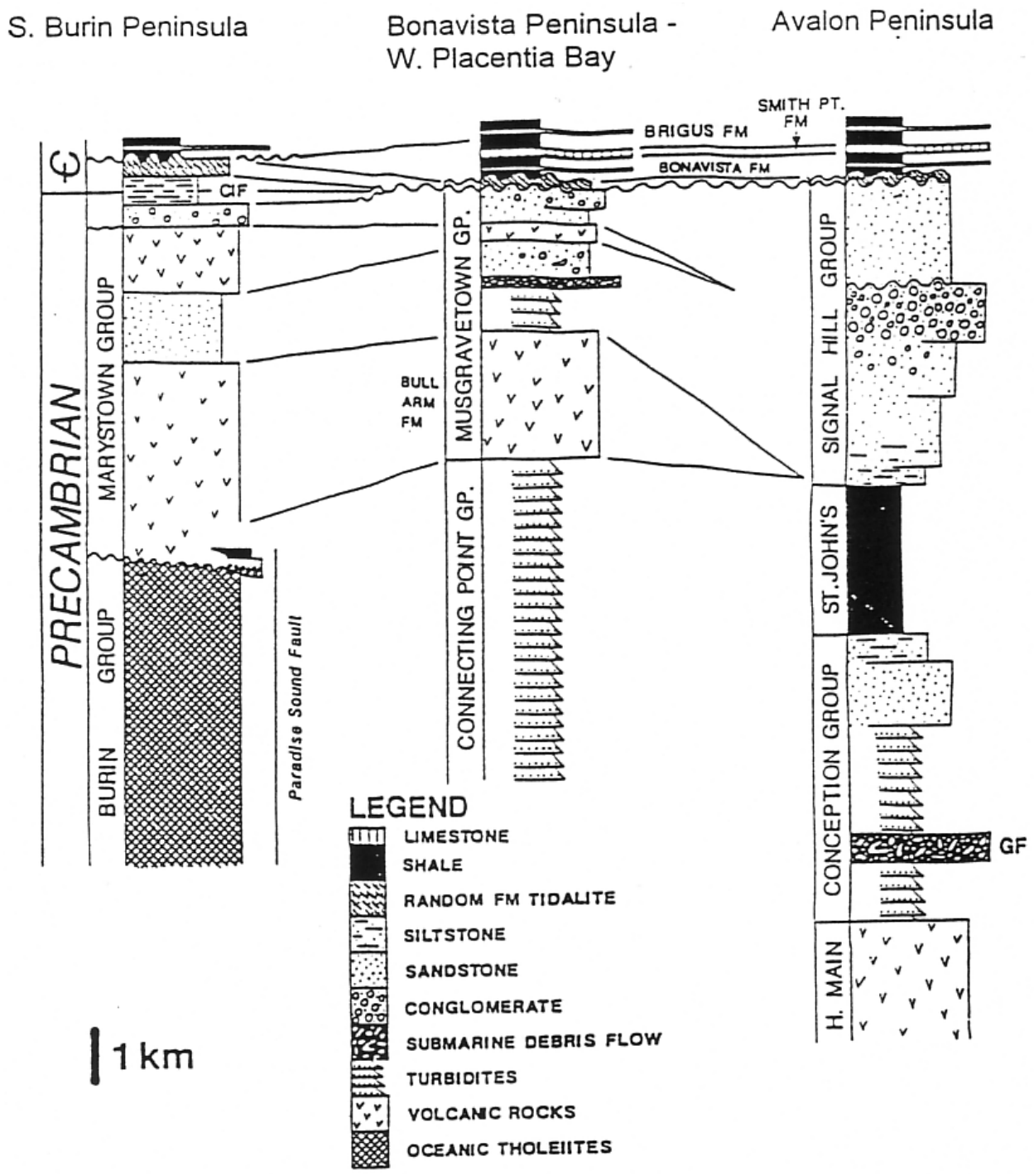


Figure 4.Schematic Stratigraphic section across the Newfoundland Avalon Zone (Myrow et al, 1988.

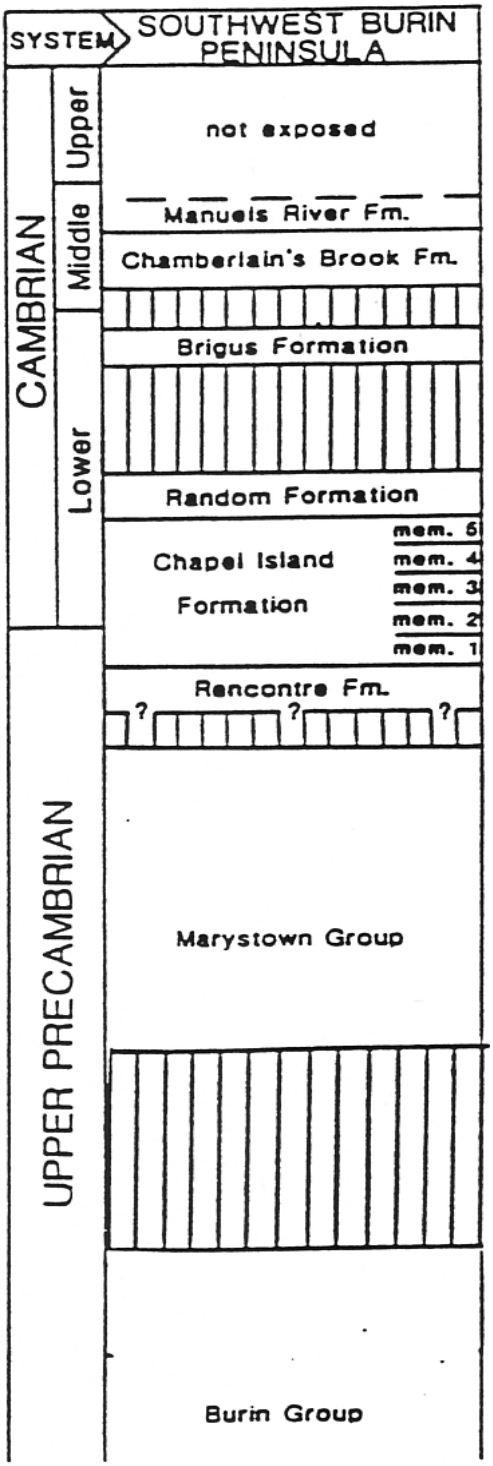


Figure 5. Stratigraphic Section of the Southwest Burn Peninsula (after King, 1979).

The Random Formation is the first regionally correlatable unit in the Newfoundland Avalon Zone. It was deposited during a marine transgression (Anderson, 1981; Hiscott, 1982). In the Random Island area, the Random Formation is disconformably overlain by a succession of fossilerous shales and carbonates of Early Cambrian age, comprising in ascending order: Bonavista, Smith Point and Brigus formations. However, on the southwest corner of the Burin Peninsula, the Bonavista and Smith Point formations are absent and the upper part of the Brigus formation rests disconformably on the Random Formation (Myrow et al, 1988). The Brigus Formation is overlain disconformably by the Chamberlain's Brook Formation, which is Middle Cambrian in age and consists of marine siliciclastic sediments. The Manuels River Formation, composed predominantly of grey to black shales, lies conformably upon the Chamberlain's Brook Formation.

1.3 Geology of the Reserve Site

At the Fortune Head site a 410 metre thick section dating from the Late Precambrian to the Early Cambrian is superbly exposed in a continuous series of low coastal cliffs. The beds dip NW at 15 - 46° with dip increasing up section; a few faults are present, but marker horizons allow for easy correlation across them (Narbonne et al, 1988).

1.4 Stratigraphy

A continuous section through the uppermost part of member I and all of member 2 of the Chapel Island Formation (Figure 6) is exposed at Fortune Head. This section is proposed as the global stratotypes for the Precambrian-Cambrian boundary. The boundary horizon is located 2.4 m above the base of member 2 of the Chapel Island Formation.

Bengtson and Fletcher (1983) divided the Chapel Island Formation into five informal members

numbered 1-5, based on outcrops studied at Grand Bank and Little Dantzic Cove. This same scheme was also used by Crimes and Anderson (1985) who studied the same outcrops. The first detailed measured sections of the formation were prepared by Myrow et al, 1988. Errors in thickness were corrected and member boundaries were better defined. Based on these more detailed studies, the lower boundary of member 3 has been moved upward from its former position to a point much higher in the formation. The old boundary between member 2 and 3, which now lies within member 2, is retained for historical reasons and separates the member into two parts, 2A and 2B. The early estimate of 50 m for member 2 has been increased to approximately 430 m; 265 m for 2A and 165 for 2B.

Studies by Narbonne et al, (1988) and Narbonne and Myrow (in Landing et al, 1988) indicate that three distinct stratigraphically - restricted trace fossil zones can be identified in the Chapel Island Formation; Harlaniella podolica zone, Phycodes pedum zone and the Rusophycus avalonensis zone. Each zone can be readily correlated with Crimes (1987) global ichnofossil zones, and each is named for a common ichnospecies which is restricted to, or first appears in the zone. The stratigraphic distribution of fossils within the Fortune Head section is summarized in Figure 7.

The Harlaniella podlica zone characterizes member 1 and the basal 2.4 m of member 2. Fossils are sporadically present within this portion of the section. Trace fossils are simple forms consisting of sediment filled nonbranching burrows (Planolites), irregularly branching burrows (Buthrotrephis), and meandering burrows (Gordia) (Figure 8) as well as, the simple subhorizontal burrows Harlaniella and Palaespascichnus, which are particularly valuable since they have a restricted range. Well preserved examples of carbonaceous small shelly fossils Sabellidites cambriensis, and Vendotaenid algae Tyrasotaenia are also present. This fauna suggests a later Precambrian Age.

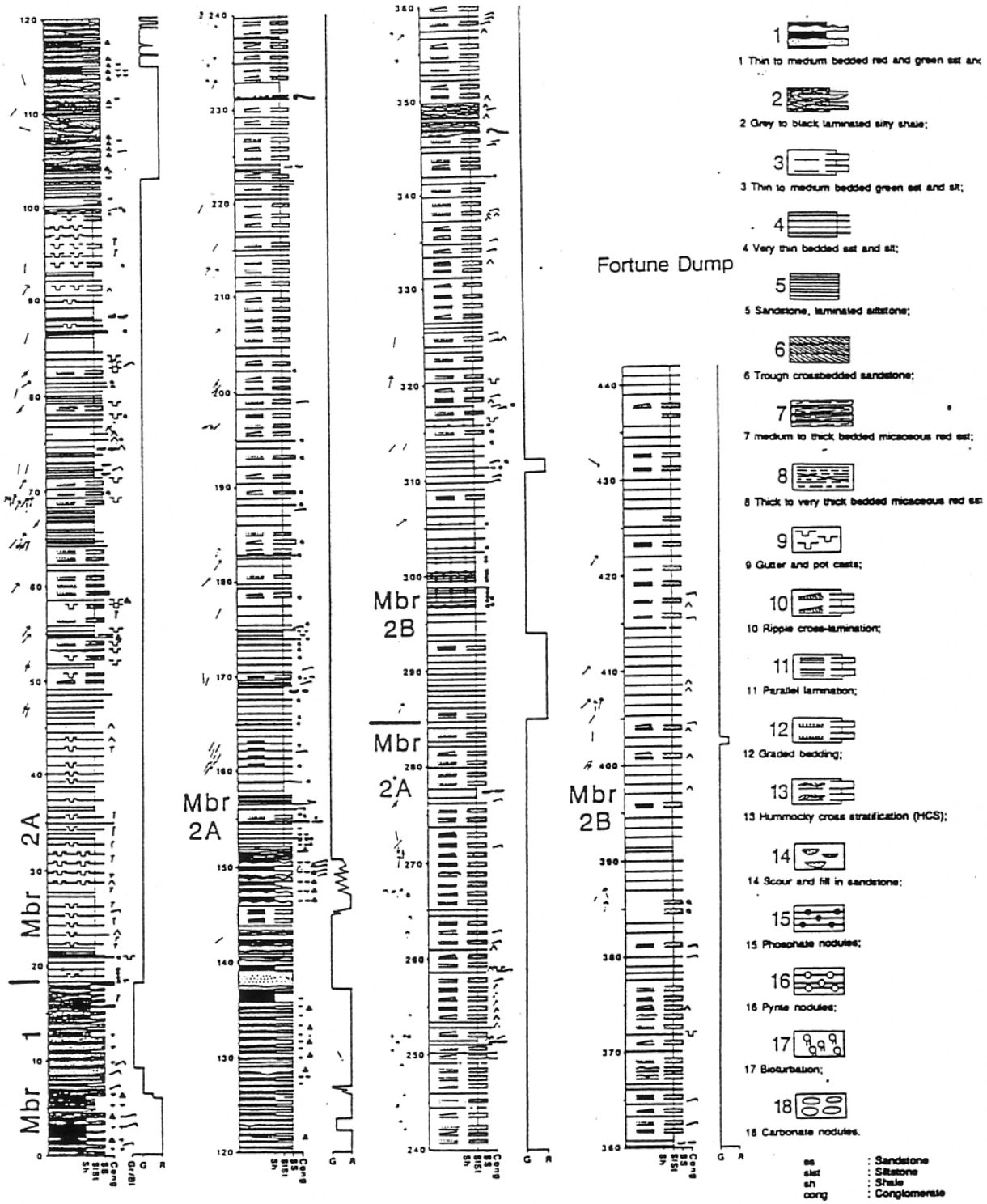


Figure 6. Schematic section of the Fortune Head site (Marow et al, 1998).

The beginning of a Phycodes pedum zone can be identified 2.4 m above the base of member 2 and is approximately 150 m thick. This point has been proposed as a candidate stratotype point and the horizon for the Precambrian - Cambrian boundary (Narborne, 1987). The proposed boundary occurs within a continuous and relatively uniform succession of subtidal strata.

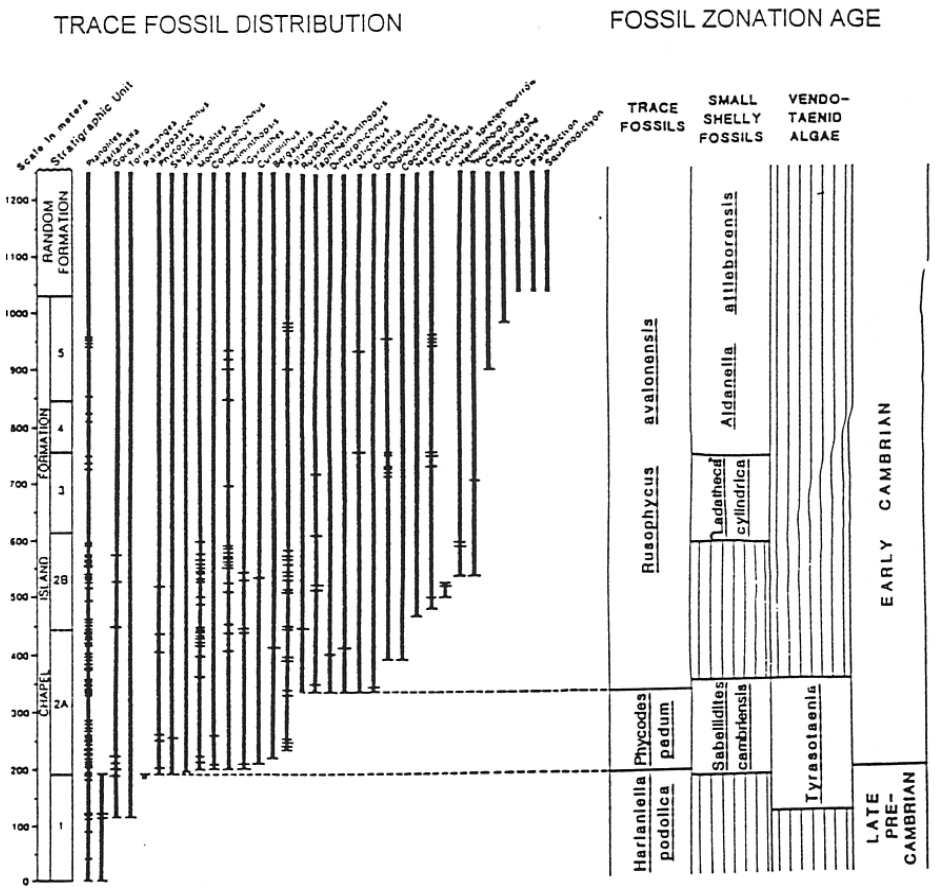


Figure 7. Fossil zonation and distribution of trace fossils through the Chapel Island and Random formations (after Narbonne et al, 1988).

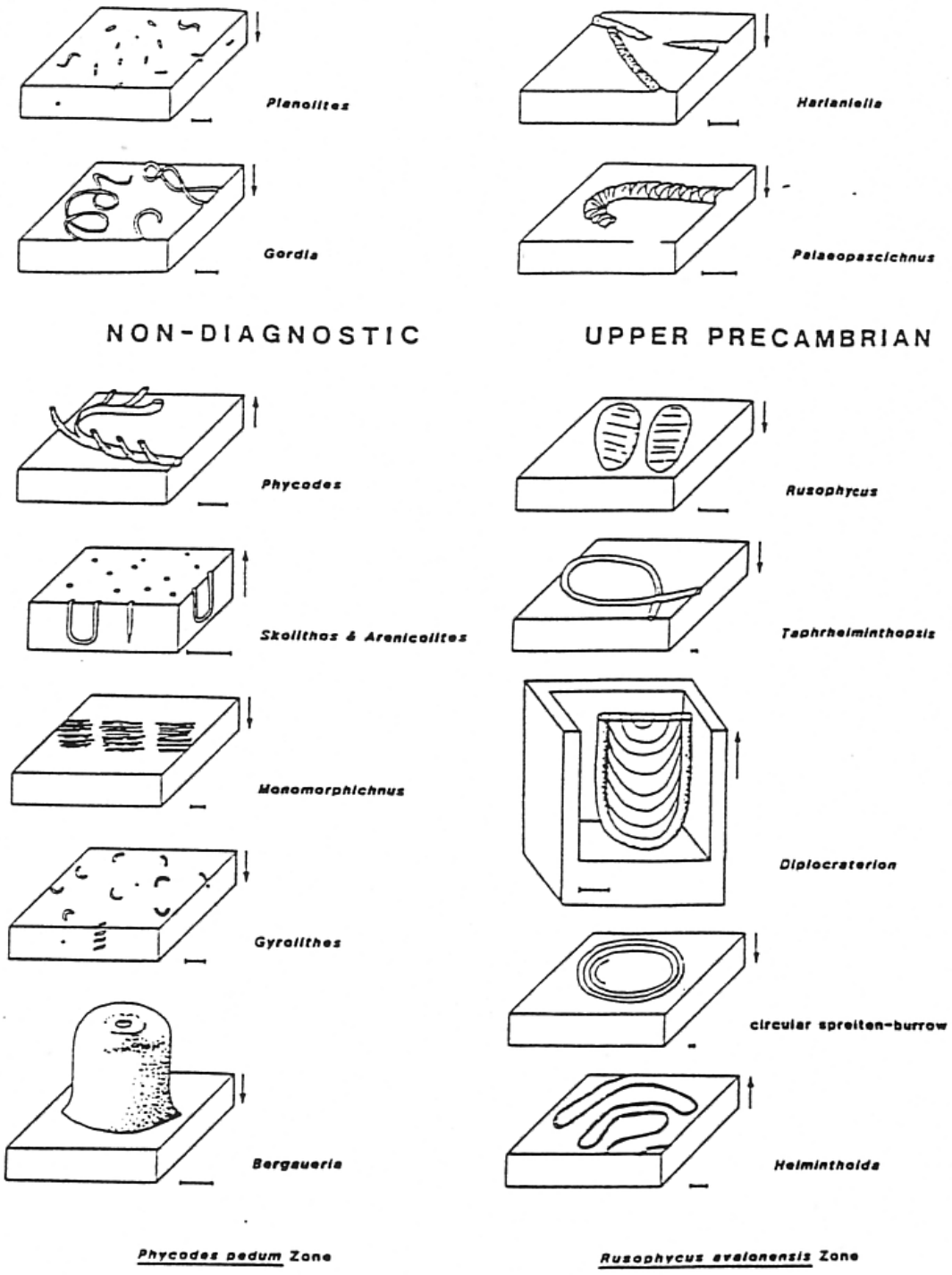


Figure 8. Upper Cambrian and Lower Cambrian trace fossils of the Chapel Island Formation, (Myrow et al, 1988).

Typical Vendian ichnofossils, such as Harlaniella, and Palaeopascichnus, are absent from this zone. The abundance and diversity of trace fossils increases within this zone. It includes arthropod traces (Monomorphichnus), vertical dwelling burrows *(* Skolithes and Arenicolites), coelenterate resting burrows (Conichnus, Bergauria), the complex feeding burrow Gyrolithes and perhaps the most useful index fossil, Phycodes pedum, which defines the base of the zone and occurs at several higher levels.

Trace fossils of the Rusophycus avalonensis zone which first appear 135 m above the base of member 2, characterize the upper half of member 2 and higher strata of the Chapel Island Formation. The zonal assemblage includes all ichnogenera (previously cited) present in the Phycodes pedum zone. The zone is marked by the first appearance of additional arthropod traces (Rusophycus, Cruziana, Dimorphichnus), dwelling burrows (Diplocraterion) and complex feeding burrows (Taphrhelminthopsis, Helminthoida). The organic-walled, worm-like megafossil, Sabellidites cambriensis, first occurs a few metres below the top of member 1 and is found in the dark shaley units throughout the lowest 140 m of member 2. The lowest occurrence of small calcareous shelly fossils is in the upper part of member 2, approximately 600 m above the base of the formation where thin tapering mud-filled tubes of the fossil Circotheca? (sp) have been recovered (Narbonne et al., 1988). Carbonaceous impressions of vendotaenid algae and impressions of medusoid coelenterates occur sporadically throughout member 1 and the lower half of member 2.

Depositional Environment

The sediments of the entire Chapel Island Formation were deposited in shallow or relatively shallow water in a variety of environmental settings (Figure 9). Frequent or periodic subaerial exposure occurred in the basal succession where there are mud cracks, and

member 4 contains stromatolites indicating intertidal or perhaps very shallow subtidal water depths. The intervening members were deposited in slightly deeper water but still within tidal influence and include offshore deposits and a possible prograding delta-front sequence. The generalized environmental distribution of the trace fossils within this formation is depicted in Figure 9. In the higher energy environment, vertical burrows predominate (e.g. Arencolites, Skolithos) and a few complex feeding burrow systems (e.g. Phycodes) also occur in this setting. Quieter water, tidally influenced, offshore and deltaic sediments have a variety of more complex traces normally only associated with much deeper waters (e.g. Helmenthoda nereites) (Crimes and Anderson, 1985).

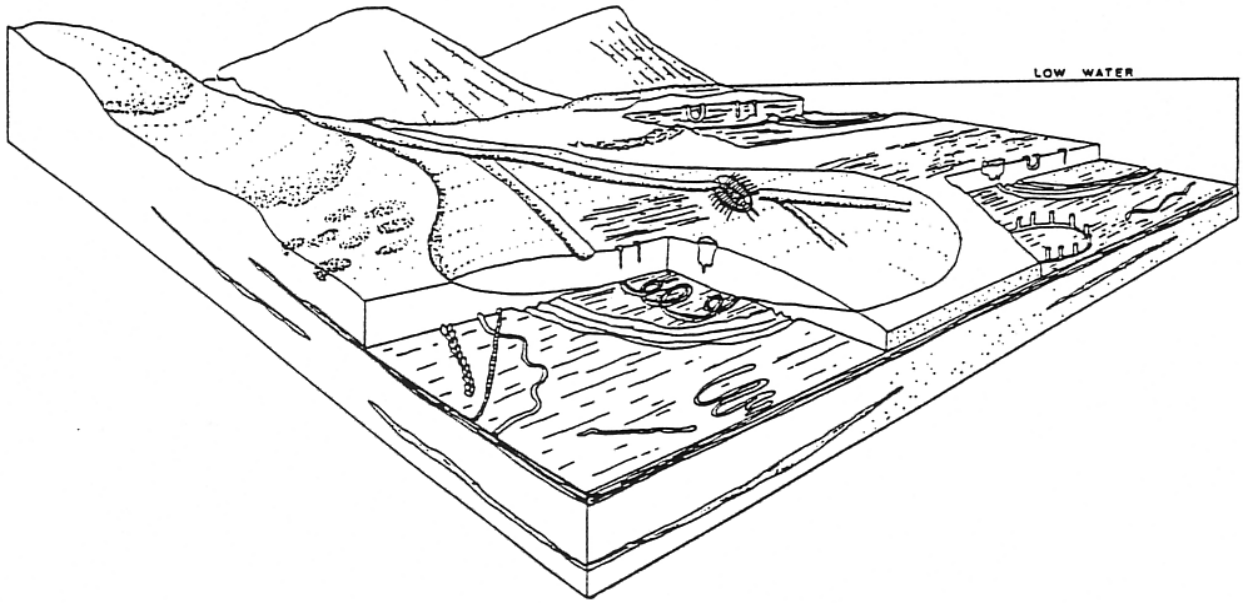


Figure 9. Inferred Depositional environment with trace fossil assemblages for the Chapel Island Formation (Crimes and Anderson, 1987).

2.0 LAND USES ISSUES

2.1 Lightstation

In 1955 the Canadian Coast Guard established a lightstation west of Fortune Head, to aid mariners navigating along the coast of the Burin Peninsula. For the next 35 years the station was manually operated. In the fall of 1990, the station became fully automated. Personnel from the Canadian Coast Guard now service the site on a periodic basis.

The road right-of-way and lands presently occupied by the Coast Guard will be deleted by description from the Reserve. The town of Fortune has expressed some interest in refurbishing one of the Coast Guard's vacant buildings to serve as an interpretive centre. This centre would focus on the interpretation of the fossil site and cultural history of the area. A tourism initiative, such as this, would have to be discussed with the Canadian Coast Guard. These properties do not fall within the jurisdiction of the Reserve.

2.2 Landfill Site

In the late 1950's a landfill site was established upon the cliffs west of Fortune Head. From an environmental perspective, this was a less than ideal location for such a facility. Fortunately, the landfill site is now closed. Instead, a regional incinerator, situated along the Molliers Access Road, serves the Town of Fortune and surrounding municipalities. Funding for clean-up of the old site, was provided through a jointly funded agreement between the Town of Fortune and the Department of Municipal and Provincial Affairs. Clean-up and rehabilitation proceeded in the spring of 1992, as required by the Waste Material Disposal Act, (1973).

3.0 MANAGEMENT POLICIES

3.1 Introduction

Ecological reserves are established under **The Wilderness and Ecological Reserves Act (1980)**, for the preservation of areas of the province which contain unique or representative species, ecosystems or natural phenomena.

The Fortune Head Reserve contains a diverse and well preserved assemblage of Upper Precambrian and Lower Cambrian fossils. This site is of particular interest to the International Union of Geological Scientists (IUGS) who are considering choosing a portion of the rock section exposed at Fortune Head as a global stratotype representing the boundary between the Precambrian and Cambrian geological eras, approximately 530 million years ago (Narbonne et al, 1987).

3.2 Management Goal

Fortune Head is established as an ecological reserve in order to protect an internationally significant and renown Late Precambrian to Early Cambrian biostratigraphic reference section. This management plan provides guidelines for that protection and the use of the site for controlled, long-term scientific research and education.

3.3 Management Policies

The overall approach of resource management at Fortune Head emphasizes the maintenance of the integrity and quality of the fossil-bearing outcrops, and the retention of the reserve area in as natural a state as possible. In keeping with this approach, the following overall management policies are adopted:

(a) within specified regulations, scientific research at the site will be permitted and

encouraged;

(b) there will be no removal of materials from the site for other than scientific research purposes and there should be no development within the area;

(c) use of the site for educational purposes is encouraged;

(a) use of the site for purposes other than those stated in **(b)** and **(c)** above, may be permitted provided there is no conflict with the general objective of site protection and preservation.

4.0 IMPLEMENTATION GUIDELINES

In addition to the requirements of the **Wilderness and Ecological Reserves Act (I980),** which apply to all ecological reserves, the following guidelines apply to Fortune Head Ecological Reserve.

4.1 Reserve Management

(a) The managing agency is Parks and Natural Areas Division of the Department of Environment and Conservation.

(b) Parks and Natural Areas Division may seek advice and assistance in the management of Fortune Head from appropriate representatives of Memorial University, the Newfoundland Department of Mines and Energy and communities nearest the site.

(c) No buildings or other permanent structures will be erected within the reserve.

(d) Mapping of the resources of the site at a detailed level will prove beneficial to future monitoring and management. Such mapping should be produced when funding permits.

(e) Every effort will be made to ensure local support for the site and local involvement in site protection.

4.2 Scientific Research

Providing areas for long term scientific research is one of the reasons for creating and managing ecological reserves. It is important, therefore, that research be carried out in such a way that the scientific value of the Reserve is not destroyed or diminished for future investigators. Accordingly, persons requesting to conduct research within Fortune Head Ecological Reserve will require a permit from Parks and Natural Areas Division, Department

of Environment and Conservation. Application for permits should provide a description of the research proposed with an outline of the methodologies and the time frame involved. The following conditions shall be stipulated for each permit issued:

(a) all published material related to research done at the site will acknowledge the existence of the Reserve, permission given by Parks and Natural Areas Division and the requirements of the researcher;

(b) a report of the results of each research project will be filed with Parks and Natural Areas Division, and a copy of all scientific papers will be forwarded to the Department and the Newfoundland Museum upon publication;

(c) When, during the course of scientific research, fossil material has been removed from the reserve for study, a representative suite, consisting of the holotype, paratypes, etc. (e.g. type material) and illustrated/non-illustrated specimens of each fossil species studied will be deposited (with detailed documentation of each specimen's geographic and stratigraphic location) with the Newfoundland Museum, Department of Tourism, Culture and Recreation upon the completion and publication of the study. This collection will form part of the Province's reference collection of Newfoundland fossils. An additional suite of illustrated specimens will be submitted to the Geological Survey of Canada for the national reference collection. When practical, Parks and Natural Areas Division staff will accompany on-site visits made by researchers and educational groups in order to record and monitor the impact on the site.

4.3 Educational Use

The Reserve may be used for educational purposes as long as such use does not have a negative impact upon the scientific value of the Reserve or the integrity of the Reserve itself. Use of geological hammers of any sort for educational purposes will not be allowed. Permits will be required for institutions wishing to utilize the area. Such permits can be obtained from Parks and Natural Areas Division of the Department of Environment and Conservation.

In keeping with the general management policy to retain the site in as natural a state as possible, there will be no development of facilities within the Reserve. The posting of signs, for the purpose of identifying the boundary will be allowed. Information concerning the Reserve will be distributed to the public through the Parks and Natural Areas Division, Department of Environment and Conservation.

5.0 APPENDICES

5.1 APPENDIX I - SELECTED REFERENCES

Anderson, M.M. (1981) **The Random Formation of Southeastern Newfoundland: A discussion aimed at establishing it's age and relationship to bounding formations.** Amer. Jml. of Sc, V. 281, p. 807-830.

Bengtson, S. and T.P. Fletcher, (1983). **The Oldest Sequence of Skeletal Fossils in the Lower Cambrian of Southeastern Newfoundland.** Can. J. of Earth Sci., V. 20, p. 526-536.

Crimes, P.T. and M.M. Anderson (1985). **Trace fossils from Late Precambrian - Early Cambrian Strata of Southeastern Newfoundland (Canada).** Temproal and Environmental Implications, Jml. of Paleontology. V. 59 (#2), p. 31 0-343.

Hiscott, R.N. (1982) **Tidal deposits of the Lower Cambrian Random Formation, Eastern Newfoundland: facies and paleoenvironments,** Can. J. Earth Sd., V.19,p.2028-2042.

Landing, E. and A. Benus (1988). **Trip A3: Cambrian Depositional History and Stratigraphy, Avalon - Bonavista Region, South-eastern Newfoundland.** Geol. Assoc. of Can., St. John's: 126 p.

Myrow, P.M. et al (1988) **Trip B6: Storm-shelf and Tidal Deposits of the Chapel Island and Random Formations, Burin Peninsula: Facies and Trace Fossils.** Geol. Assoc. of Can., St. John's, 108 p.

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Narbonne, G.M. et al (1988) **A Candidate Stratotpye for the Precambrian - Cambrian Boundary, Fortune Head, Burin Peninsula, Southeastern Newfoundland,** Can. J. of Earth Sci. V. 24, p. 1277-1293.

O'Brien, S.J. et al (1988) **Trip B4: Eastern Margin of Newfoundland Appalachians, A Cross-section of the Avalon and Gander Zones.** Geol. Assoc. of Can., St. John's, 126 p.

Odom, A.L. (1980) **Geochronology Report,** Current Research, Newfoundland Department of Mines and Energy, Government of Newfoundland and Labrador, Mineral Development Division, Report 80-1. p. 143-146.

Williams, H. (1979) **Appalachian Orogen in Canada.** Can. J. Earth Sd., V. 16, p. 792-807.

APPENDIX II - RESERVE ORDER AND REGULATIONS

Fortune Head Ecological Reserve Order
under the
Wilderness and Ecological Reserves Act
(O.C. 96-199)

Under the authority of subsection 18(1) of the *Wilderness and Ecological Reserves Act* and the *Subordinate Legislation Revision and Consolidation Act,* the Lieutenant-Governor in Council makes the following Order.

ORDER

Analysis

Short title 1. This Order may be cited as the *Fortune Head Ecological Reserve Order.*

205/92 s1

Area included 2. The area included in the Fortune Head Ecological Reserve is as set out in Schedule A.

205/92 s2

Outline 3. An outline of the Fortune Head Ecological Reserve Management Plan is as set out in Schedule B.

205/92s3

Repeal 4. The Order re: Provisional Ecological Reserve at Fortune Head, Newfoundland Regulation 67/90, and the Fortune Head Ecological Reserve Order, 1992, Newfoundland Regulation 205/92, are repealed.

Schedule A

All that piece or parcel of land situate and being at Fortune Head in the province, abutted and bounded as follows, that is to say:

Beginning at a point in the southerly shoreline of the waters of Fortune Bay, at the low tide line, near Cross Point, that point having co-ordinates of north 5,214,250 metres and east 588,700 metres;

Then running in a southwesterly direction for a distance of *4,750* metres, more or less, to a point in the centre of the mouth of a brook flowing into Fortune Bay, that point having co-ordinates of north 5,211.925 metres and east 584,550 metres;

Then running along the sinuosities of the southerly shoreline of the waters of Fortune Bay, at low tide line, in a general northeasterly direction to the point of beginning;

Reserving, nevertheless, out of the above described piece or parcel of land a portion of the land transferred by the Crown to Her Majesty in right of Canada, under Minute of Council No. 216-66, that extends through that land;

Also reserving out of that piece or parcel of land the light station occupied by Transport Canada Coast Guard that is located on that land;

The above described piece or parcel of land containing an area of 2.21 square kilometres, more or less.

All bearings being referred to Zone 21 of the Universal Transverse Mercator Projection.

205/92 Sch A

Schedule B

Outline of Fortune Head Ecological Reserve Management Plan

The area known as Fortune Head on the Burin Peninsula is established as an ecological reserve to preserve a unique and internationally significant fossil assemblage which marks the boundary between the Precambrian and Cambrian, over 600 million years ago, for scientific and educational purposes. To accomplish this, there will be no removal of fossils or other material from the site except under specific permit, and there will be no development within the reserve. Scientific research at the site will be encouraged, and educational use will be permitted where it does not conflict with the general objectives of preservation and scientific research.

205/92 Sch B

Fossil Ecological Reserve Regulations
under the
Wilderness and Ecological Reserves Act
(O.C. 97-248)

(Filed May 21. 1997)

Under the authority of sections 25 and 29 of the *Wilderness and Ecological Reserves Act,* the Lieutenant-Governor in Council makes the following regulations.

Dated at St. John's, May 13, 1997.

John Cummings
Deputy Clerk of the Executive Council

REGULATIONS

Analysis

Short title **1.** These regulations may be cited as the *Fossil Ecological Reserve Regulations.*

Definitions **2.** In these regulations

(a) "Act" means the *Wilderness and Ecological Reserves Act;*

(b) "managing agency" means the Parks and Natural Areas Division of the Department of Tourism, Culture and Recreation;

(c) "management plan" means the management plan for a declared fossil ecological reserve on file with the managing agency;

(d) "permit" means a permit issued and valid under these regulations;

(e) "reserve" means a fossil ecological reserve set aside under the Act, and described in the Schedule;

(f) "structure" means a man-made object intended to be permanent or semi-permanent or temporary in nature and includes -but is not limited to buildings, houses, cottages, cabins, wharves, docks, boathouses, slipways, trailers, mobile homes, tents, tent platforms, camps, shelters and recreational vehicles used for any purpose, but does not include semi-permanent blinds or signs erected under the authority of the management plan; and

(g) "wildlife" means an animal or plant.

Restrictions **3.** Within a reserve, a person shall not

(a) destroy, damage or remove any fossil material;

(b) pollute or obstruct a stream or other body of water or dispose of any garbage;

(c) build or erect or cause to have built or erected a structure;

(d) destroy, damage, remove, disturb, or handle the home, den, or nest of wildlife;

(e) destroy, damage, remove, disturb or handle an egg of any wild bird;

(f) destroy, damage, or remove any wildlife or natural object;

(g) damage or remove a sign or other government property;

(h) remove sand, stone, or gravel;

(i) se, operate or be in possession of a motor car, motor truck, four-wheel drive vehicle, all-terrain vehicle, snow mobile, or other motorized conveyance;

(j) land an aircraft;

(k) operate a commercial establishment or commercial enterprise within a reserve, except guiding, touring and outfitting subject to section 9;

(l) display, post or broadcast an advertisement;

(m) prospect, clairnstake, mine or quarry; and

(n) use explosives, mechanical and electrical rock cutting or removal tools (e.g. tile saws, percussion hammers).

Domestic animals

4. The grazing of domestic animals may be permitted within a reserve provided it does not exceed existing limits at the time of the reserve establishment.

Exception

5. A person engaged in the administration or management of a reserve in the normal course of his or her duties is exempt from paragraphs 3(d), (e), (f), (g) and (j).

Research in reserve

6. Scientific research within a reserve shall require a permit and those permits may be obtained from the managing agency on submission of a written request outlining the research project, and subject to the terms and conditions that the managing agency may determine.

Exception for research

7. A person engaged in a scientific study which is approved by the managing agency and for which a permit has been issued under section 6 may be exempted from paragraphs 3(a), (d), (e), (f) and (j) and researchers who hold a valid permit may be allowed to use geological hammers, sledge hammers and rock chisels only if they are considered necessary for the research.

Hunting and fishing

8. With the exception of Fortune Head Ecological Reserve, all hunting and fishing within a reserve is allowed in accordance with permits or licences issued under the *Wildlife Act*, the *Migratory Birds Convention Act* (Canada) or the *Fisheries Act* (Canada).

Permit required

9. (1) A person engaged in a touring, guiding and outfitting enterprise shall obtain a permit for the enterprise from the managing agency.

(2) Applications for a permit shall provide a full description of the enterprise planned.

Application of regulations

10. These regulations shall apply to the fossil ecological reserves listed in the Schedule, except to the extent that they have been modified by the Order declaring a given Fossil Ecological Reserve in effect.

Schedule

1. Fortune Head Ecological Reserve.

2. Mistaken Point Ecological Reserve.

3. Table Point Ecological Reserve.