Lithostratigraphy of the Comox and Trent River Formations in the Comox Coalfield, Vancouver Island (92F/7, 10, 11, 14)

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INTRODUCTION

This report is part of an ongoing study, begun in 1987, to establish the distribution, sedimentology and resource stratigraphy of the Vancouver Island coalfields. Knowledge of the extent and quality of the coal deposits and associated natural gas resources is essential to land-use planning along the increasingly-urbanised western shores of Georgia Strait.

Results of this study have included five fieldwork papers (Bickford and Kenyon, 1988; Kenyon and Bickford, 1989, Bickford, *et al*., 1989 and 1990; Cathyl-Bickford, 1992), one stand-alone paper (Kenyon, Bickford and Hoffman, 1991) and a set of fourteen maps (Cathyl-Bickford and Hoffman, 1998). In the course of this work, 21 stratigraphic sections were measured, and four of the sections were published (in Kenyon, *et al*., 1991). Although new lithostratigraphic units were introduced and used in some of these publications as well as Mustard (1994), no type-sections have yet been described for the new rock-units and their definitions have therefore remained incomplete by modern standards.

In this year's field programme, additional stratigraphic sections have been measured, allowing the formal proposal of type-sections for six of the members within the coal-measures and overlying marine strata of the Comox sub-basin. Four measured stratigraphic sections are presented in this report, in the expectation that they will prove useful to exploration geologists working in the Comox sub-basin, as well as providing a much-needed lithostratigraphic context for amateur and professional paleontological collectors.

LOCATION AND ACCESS

The study area covers the east-central coastal plain of Vancouver Island, extending southeastward from Headquarters Creek (in 92F/14) to Cougarsmith Creek (in 92F/7). A dense network of public and private roads affords access to the area, with the exception of the river and stream canyons which must be traversed on foot. Some of the smaller streams are choked with logging debris, requiring an exhausting combination of wading, swimming and burrowing between wet logs and clumps of devils-club. Rivers and streams within the study area are subject to winter and spring freshets, and are best accessed for geological purposes during their seasonal low flows in August and September. Fieldwork is virtually impossible during January and February, owing to torrential rains relieved only by occasional heavy wet snows. Outside of the canyons, slopes are gentle to moderate, and much of the study area is blanketed by unconsolidated glacial, glaciofluvial and glaciomarine sediments. Courtenay and Comox are the major population centres in the study area.

Fieldwork

In contrast to previous years' programmes, only a modest amount of geological mapping was undertaken in 2000, mainly along the newly-constructed subgrade of the Vancouver Island Highway. Geological stations were located by reference to construction stakes along the highway, and positions marked on grading plans provided by the Ministry of Transportation and Highways. Outside of the area covered by the highway plans, forest cover maps provided by Weyerhaeuser Canada were used for station-keeping alongside logging roads and within cutblocks. Orthophotos provided by the Regional District of Comox-Strathcona were used to select and locate sites for outcrop sections along the stream and river canyons.

Geological Setting

The study area comprises the central third of the Comox sub-basin of the Late Cretaceous Georgia Basin. Coal measures occur within the non-marine portions of the Comox Formation (Bickford and Kenyon, 1988). The Comox Formation dips gently to moderately eastward, and is overlain by the Cretaceous marine rocks of the Trent River Formation, and unconsolidated Pleistocene sediments. Sills and laccoliths of probable Tertiary age cut the Comox Formation between Puntledge and Browns Rivers, northwest of Courtenay. Economic basement within the study area is formed by Triassic volcanic and volcaniclastic rocks of the Karmutsen Formation.

STRATIGRAPHY

Cretaceous rocks of the study area have been the target of considerable mapping, drilling and mining for more than 125 years (Richardson, 1878; McKenzie, 1922), and the basics of their lithostratigraphy have been established since 1911 (Clapp, 1912). Nevertheless, type and reference sections of the rocks have not been formalised beyond preliminary studies in the 1960's and 1970's (Muller and Jeletzky, 1970; Muller and Atchison, 1971; Atchison, 1968), and the depiction of section locations on regional geological maps (Cathyl-Bickford and Hoffman, 1998).

Type sections and surface reference sections for most of the members of the Comox and Trent River formations are proposed below. Measured sections accompanying this paper are designated as No.5 through No.8, following the previously-published sections No.1 through No.4 (Kenyon *et al.,* 1991). Only the basal portion of the Trent River Formation has been included in the present discussion, since its poorly-exposed upper portion requires further study before its subdivision can be confidently and fully documented.

Comox Formation

The Comox Formation was introduced by Clapp (1912) for a dominantly sandy succession of coals and clastic sedimentary rocks exposed in the vicinity of the Comox coal mines, southwest of Comox Harbour. Clapp did not report a detailed section of the formation, and he did not specify its type locality beyond the most general terms. Bickford and Kenyon (1988) proposed three subdivisions of the formation within the Comox sub-basin: the basal Benson conglomerate, overlying Cumberland coal measures, and uppermost Dunsmuir sandstone, but specified type sections for none of them. In the present study, sections have been measured of the coal-bearing Cumberland and Dunsmuir members. The basal, dominantly-conglomeratic Benson Member has not been studied in detail owing to its lack of significant coal beds, and the general inaccessibility of its outcrops.

Cumberland Member

The Cumberland Member is named for the Cumberland coal-mining district (Bickford and Kenyon, 1988). Its proposed type-section is in the western part of the middle canyon of Browns River [*see* GeoFile 2001-1 (www.em.gov.bc.ca/mining/geolsurv/publications/catalog/cat_geof), measured section No.5], where it is 73.1 metres thick, exclusive of a dacite sill 0.75 metres thick. The type-section may be reached by walking westward along the canyon floor from the Duncan Bay Main logging road, or by descending the north wall of the canyon from the western end of the mostly-overgrown Browns River Main logging road.

The Cumberland Member interfingers with the underlying Benson Member (where present); in most of the basin, the Benson is absent and the Cumberland unconformably overlies the Karmutsen Formation. The sub-Comox unconformity is irregular in detail, marked by considerable local relief (McKenzie, 1922; Graham, 1924; Muller and Atchison, 1971). Paleoscarps up to 10 metres high are visible in some outcrops. In a few localities, such as in the middle canyon of the Tsable River near the old mine pumphouse, the Karmutsen paleosurface is mantled by a few metres of grey volcaniclastic sandstones and possible tuffs, which may be of older Cretaceous age.

The Cumberland Member is abruptly (and locally erosionally) overlain by the Dunsmuir Member of the Comox Formation. Channel-filling sandstone, and blankets of siltstone, variably-carbonaceous mudstone and coal are the dominant lithologies of the Cumberland Member. The Comox No.2 coal bed and its associated splits, the Comox No.2 Rider and Comox No.2A, form the best stratigraphic markers within the Cumberland Member. The Cumberland ranges in thickness from 0.2 to 160.4 metres, with a median thickness of 65 metres.

The Cumberland thickens to the southeast, and thins to the north and west of its type locality. Thickness of the Cumberland is controlled mainly by basement paleotopography, and to a lesser extent by erosion of its uppermost beds; geophysical correlations of coal beds suggest that up to 20 metres of the uppermost Cumberland (including the Comox No.2 Rider coal bed) is locally absent due to the sub-Dunsmuir disconformity. Probable depositional environments of the Cumberland include meandering streams, alluvial plains and mires within a low-energy deltaic system.

The Cumberland contains numerous well-preserved plant fossils, mainly in the immediate roofs and floors of coal beds; these indicate a general Late Cretaceous, possibly Santonian, age. Outside of the Quinsam coalfield, where abundant shell fossils are presented in Cumberland siltstones (as reported by Kenyon, Bickford and Hoffman, 1991), the Cumberland Member does not appear to contain body fossils other than occasional fish, one of which is on display in the Cumberland Museum.

Dunsmuir Member

The Dunsmuir Member is named for the Dunsmuir coal mines at Cumberland (Bickford and Kenyon, 1988). Its proposed type-section is located in the eastern part of the middle canyon of Browns River (*see* GeoFile 2001-1, measured section No.5), where it is 115.27 metres thick. The proposed type-section of the Dunsmuir Member is accessible on foot from the west end of a dirt road which follows the south bank of Browns River westward from TimberWest's Duncan Bay Main logging road.

The Dunsmuir Member is abruptly (and locally erosionally) overlain by the Cougarsmith or Puntledge members of the Trent River Formation. Blankets of medium- to coarse-grained sandstone and lenses of siltstone, mudstone and coal are the dominant lithologies of the Dunsmuir Member. Oil shale forms a minor but distinctive part of the Dunsmuir, mostly as a series of lenses in between the Comox No.1 and Comox No.1 Rider coal beds; some of the oil shales are relatively highly radioactive, producing spectacular responses on gamma-ray logs. The Dunsmuir ranges in thickness from 11.5 to 356 metres, with a median thickness of 107.8 metres. The Dunsmuir thickens to the northeast, and thins to the south and west. Figure 1 shows details of the Dunsmuir's thickness variation southwest of Courtenay, where logs of numerous boreholes are in the public domain (CX-series borehole records in Kenyon, 1987).

Thickness of the Dunsmuir appears to be mainly controlled by gradual southwestward thinning of its constituent sandstone beds, and to a lesser extent by erosion of its uppermost beds.

Probable depositional environments of the Dunsmuir include tidal inlets, submerged lobate tidal deltas above wave base, sheltered back-barrier lagoons and barrier bars or barrier islands, within a high-energy, southwestward-prograding deltaic system. The Dunsmuir contains locally-abundant plant fossils, mainly in the immediate roofs of coal beds; these indicate a general Late Cretaceous, possibly Santonian or Campanian, age (Bell, 1957). The Dunsmuir also locally contains non-diagnostic thick-shelled pelecypod fossils within its sandstones, and possible vertebrate trackways in the immediate roof of the Comox No.1 coal bed.

Trent River Formation

The Trent River Formation was introduced by Clapp (1912) for a thick unit of shales overlying the Comox Formation, southwest of Comox Harbour. Clapp did not report a detailed section of the formation, and he did not specify its type locality. McKenzie (1922) produced a graphic section of the formation, probably based on borehole records from the north side of the Tsable River; he recognised a fairly persistent sandstone band near the base of the formation, but otherwise did not attempt its subdivision.

Bickford and Kenyon (1988), Cathyl-Bickford (1992) and England (1989, 1990) proposed nine subdivisions of the Trent River Formation within the Comox sub-basin: the basal Cougarsmith shale, overlying Cowie sandstone, Puntledge shale, Browns sandstone, Tsable conglomerate, Royston shale, Oyster River coal-measures, Baynes Sound sandstone, and uppermost Willow Point shale, but specified type-sections for none of them.

In the present study, sections have been measured of the basal four units: the Cougarsmith, Cowie, Puntledge and Browns members. The Oyster River Member is not interpreted to be present within the study area, being recognised only within the coastal lowland between Oyster River and the city of Campbell River. The Tsable,

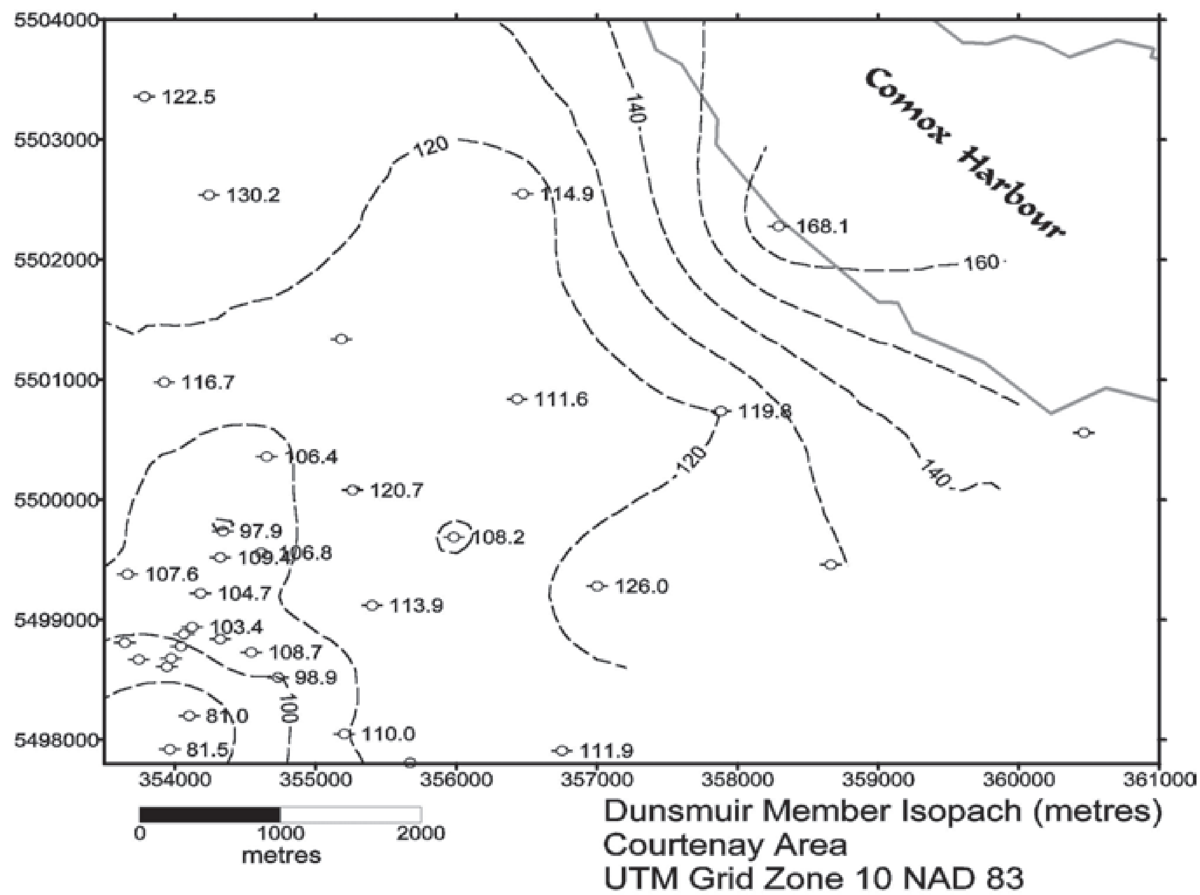

Figure 1. Dunsmuir Member isopach map.

Royston, Baynes Sound and Willow Point members were not studied in detail, owing to their structural and stratigraphic complexity; resolution of their stratigraphic relationships and thickness trends may have to await future deep drilling into their largely drift-covered outcrop belts.

Cougarsmith Member

The Cougarsmith Member was introduced by Cathyl-Bickford (1992) for a thin but laterally-persistent unit of mudstones and siltstones immediately overlying the Comox Formation, first noted in outcrop along Cougarsmith Creek south of Tsable River. Its proposed type-section is located in the lower canyon of the creek [Appendix 2 (*see* GeoFile 2001-1), measured section No.8), where it is 20.15 metres thick. This locality is accessible on foot by descending the north wall of the canyon, starting from the southwestern corner of a gravel pit on the south side of Weyerhaeuser's TR-33 logging road. The Cougarsmith Member is incompletely exposed in its type locality, and an additional reference section in the middle canyon of Browns River is hereby proposed [Appendix 1 (*see* GeoFile 2001-1), measured section No.5].

The Cougarsmith Member is abruptly overlain by the Cowie Member of the Trent River Formation. Blankets of dark grey to brownish-grey siltstone and mudstone form the bulk of the Cougarsmith Member, accompanied by thin lenticular interbeds of fine-grained sandstone. The Cougarsmith ranges in thickness from 0.6 to 36 metres, with a median thickness of 8.7 metres. The Cougarsmith thickens to the northeast, and thins to the northwest, west and south. Figure 2 shows details of the Cougarsmith's thickness variation southwest of Courtenay.

Probable depositional environments of the Cougarsmith Member include sheltered lagoons and bays, lying seaward (southwestward) of the Dunsmuir delta-front and landward (northeastward) of offshore bars. The Cougarsmith contains a sparse fauna of thin-shelled bivalves, none of which have thus far been determinable as to age.

Cowie Member

The Cowie Member was introduced by Cathyl-Bickford (1992) for a laterally-persistent unit of thick-bedded to massive sandstones overlying the Cougarsmith shales near Cowie Creek, south of Tsable River. Its proposed type-section is located in the lower canyon of Cougarsmith Creek [Appendix 2 (*see* GeoFile 2001-1), measured section No.8], where it is 11.20 metres thick. This locality is accessible on foot by descending the north wall of the canyon, starting from the southwestern

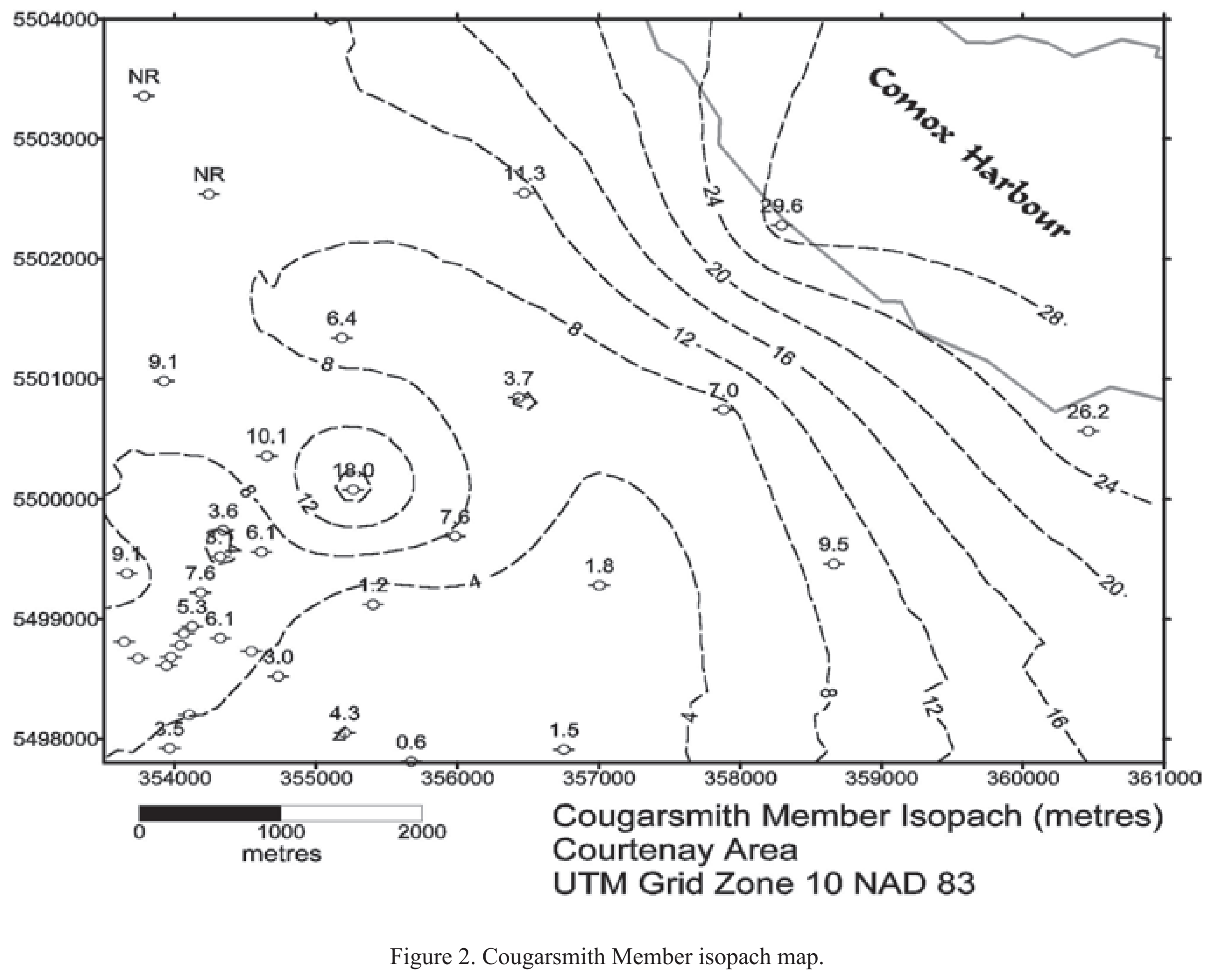

Figure 2. Cougarsmith Member isopach map.

corner of a gravel pit on the south side of Weyerhaeuser's TR-26 logging road. Additional sections of the Cowie Member are exposed on Tsable River downstream from the old Baynes Sound Mine, on Trent River upstream of the former site of the Van Logging bridge, on Puntledge River downstream from Nymph Falls [9.26 metres thick -Appendix 3 (*see* Geofile 2001-1), measured section No.6] and on Browns River upstream from the Inland Island Highway bridge [2.24 metres thick - Appendix 1 (*see* GeoFile 2001-1), measured section No.5]. Sandstones, probably correlative to the Cowie Member, are also exposed in road cuts on the west side of the Inland Island Highway, between the Duncan Bay Main logging road overpass and the Dove Creek bridge.

The Cowie Member is overlain by the Puntledge Member of the Trent River Formation. In most outcrops this is an abrupt contact, but borehole records suggest that the Cowie/Puntledge contact is interfingering or intertonguing in some parts of the study area, particularly north of Dove Creek. Fine to coarse-grained sandstone forms the bulk of the Cowie Member, but thin to medium interbeds of dark grey to black, moderately to intensely bioturbated siltstone are also locally present. The Cowie ranges in thickness from 0.5 to 24.4 metres, with a median thickness of 5.8 metres. Figure 3 shows details of the Cowie's thickness variation southwest of Courtenay.

The Cowie Member is absent altogether in approximately 20% of the boreholes between Courtenay and Tsable River; this absence may be due to lateral pinch-out of the sandstones, or to postdepositional erosion. Where the Cowie Member is absent, and there is no other obvious lithological break near the base of the Trent River Formation, the Puntledge Member is mapped as directly overlying the Dunsmuir Member.

Probable depositional environments of the Cowie Member include barrier islands or submerged and emergent offshore bars (Cathyl-Bickford, 1992), with a slight tendency to southeastward elongation . The Cowie Member locally contains heavy-mineral bands and *Thalassinoides* and *Ophiomorpha* burrows, suggestive of deposition in a high-energy setting. Abundant pelecypod fossils are present in the Cowie sandstone at Browns River (in bed 193 of measured section No.8), but these fossils are not yet known to have been collected or identified.

Puntledge Member

The Puntledge Member was introduced by Bickford *et al*. (1990) for a thick unit of dark grey to black mudstones and siltstones overlying the Dunsmuir sandstones near Puntledge River. No formal type-section was established at that time. As originally envisaged, the

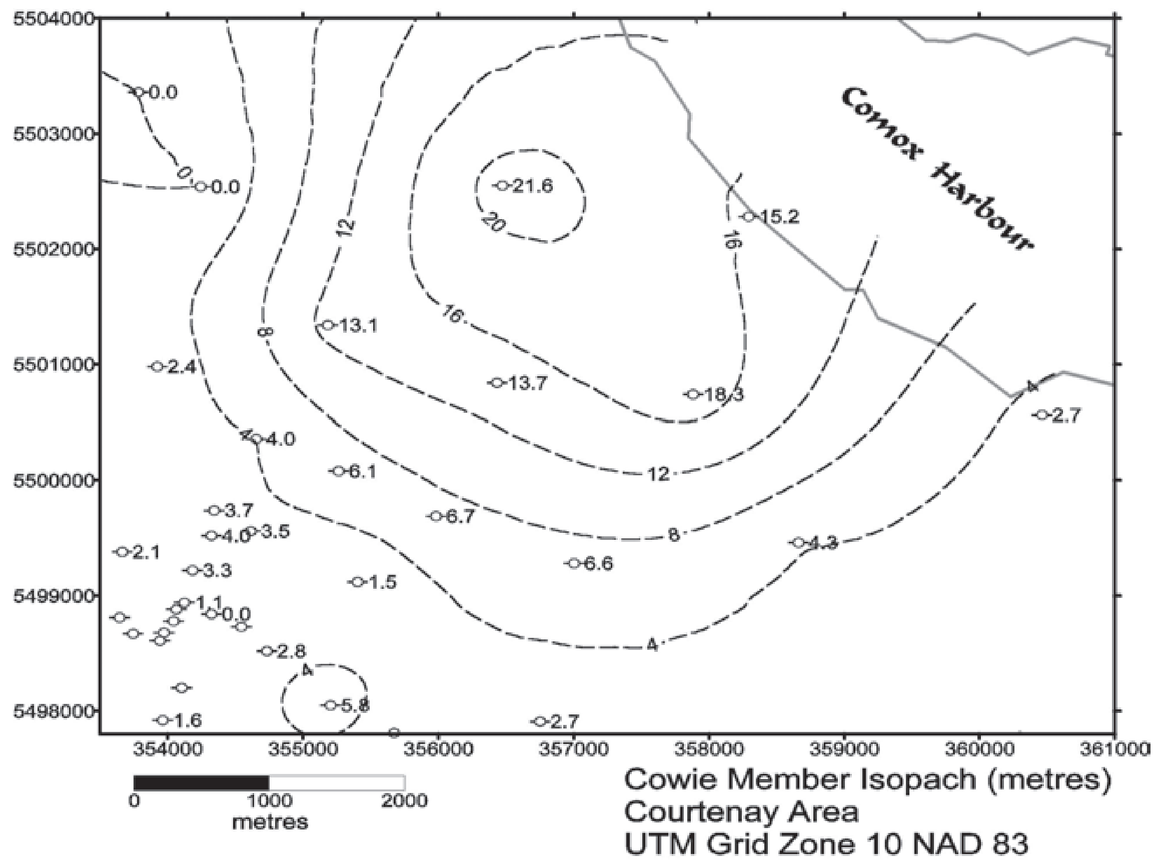

Figure 3. Cowie Member isopach map.

Puntledge Member included all beds between the Browns and Dunsmuir sandstones, but following the recognition of the Cougarsmith and Cowie members the Puntledge Member was implicitly redefined to consist solely of the mudstones, siltstones and minor sandstones overlying the Cowie Member (Cathyl-Bickford, 1992, Table 4-4-1). The proposed type-section of the Puntledge Member, as currently understood, is located along the course of Puntledge River, extending downstream from the prominent point formed by the Cowie sandstones to the overhanging ledge formed by the Browns sandstones on the south bank of the river east of Stotan Falls[139.42 metres thick - Appendix 4 (*see* GeoFile 2001-1), measured section No.7]. This section is accessible on foot from a dirt road which follows the north side of the steel-pipe penstock serving B.C. Hydro's Puntledge Generating Station. A partial reference section of the Puntledge Member, with more complete exposure of its basal 20 metres, is located along the north bank of Browns River, beneath and upstream of the Inland Island Highway bridge[Appendix 1 (*see* GeoFile 2001-1), measured section No.5].

The Puntledge Member is abruptly or locally erosionally overlain by the sandstones of the Browns Member, or by the conglomerates of the younger Tsable Member. This contact is readily recognised on lithological and geophysical logs of boreholes, and constitutes a useful marker for subsurface mapping. The Puntledge Member consists of thin to medium, generally fining-upwards interbeds of siltstone, very fine to fine-grained sandstone and mudstone; in outcrop the Puntledge presents a distinctively ribbed appearance owing to the relative erosional resistance of its sandstone bands. Subsurface lithological logs generally describe the Puntledge as consisting of thick, monotonous beds of shale or 'sandy shale'; this contrast in scale of lithological variation between outcrops and borehole records may be an artefact of the lower level of interest given by coal geologists to non-coal-bearing strata.

A distinctive feature of the Puntledge Member in outcrop, most notably along Puntledge River near Stotan Falls, is the occurrence of hard, erosionally resistant 'biscuit bands' of silty glauconitic sandstone, which weather into light-coloured, polygonally jointed layers. Some of the biscuit bands are intensely bioturbated, and they may represent hardgrounds formed at the sea floor during periods of reduced terrigenous clastic sediment influx, perhaps maximum flooding surfaces (as defined by Walker, 1992). These biscuit bands may eventually be of some value in regional correlations, as similar beds are known in outcrop from the Puntledge Member along Englishman River, southwest of the town of Parksville.

The Puntledge Member ranges in thickness from 1.8 to 128.3 metres, with a median thickness of 73 metres. The wide variation in thickness is due at least in part to post-depositional erosion of the Puntledge Member. Boreholes situated between Royston and Maple Lake indicate considerable erosional relief at the sub-Tsable disconformity, and in nearly all cases where the Puntledge Member is directly overlain by the Tsable Member, the Puntledge is less than 39 metres thick.

Possible depositional environments of the Puntledge Member include delta-front bays and deeper prodeltaic slopes. The Puntledge contains a rich vertebrate and invertebrate fauna, including plesiosaurs, ammonites, inoceramid and other bivalves, and corals (Trask, 1997), referred to the *Polyptychoceras vancouverense* zone of the Santonian by Ludvigsen and Trask (1991).

Browns Member

The Browns Member was introduced by Bickford *et al.,* (1990) for ledge-forming sandstones exposed in the beds of the Browns, Puntledge and Tsable Rivers. No type-section was originally suggested, and the outcrop trace of the Browns Member was at first poorly defined. Further mapping since 1990 has allowed a better definition of the Browns outcrop (Cathyl-Bickford and Hoffman, 1998), and a type-section is now proposed along the lower canyon of the Browns River, between a waterfall and rapids lying upstream of B.C. Hydro's transmission-lines [8.99 metres thick - Appendix 3 (*see* GeoFile 2001-1), measured section No.6]. The type-section of the Browns Member is accessible on foot by wading upstream from the southeast end of the powerline access road which runs between Piercy Road and the river. An additional reference section, 4.57 metres thick, is situated on the south bank of Puntledge River, downstream from Stotan Falls (see measured section No.7 for details). The Browns Member is either absent or represented only by sandy siltstone at Trent River (Trask, 1997).

In the northern part of the study area, north of the Courtenay Parkway, the Browns Member is overlain by the silty shales of the Royston Member. The contact is locally abrupt, but more often marked by a zone of interbedded sandstone, siltstone and shale. In such areas, the contact is arbitrarily drawn as the upward limit of the beds where sandstone comprises at least 50 percent of the section. South of the Comox Parkway, the Browns Member is locally erosionally overlain, or altogether truncated by, the conglomerates of the Tsable Member. The southward limits of the zone of sub-Tsable erosion are not well-defined owing to poor bedrock exposure and wide drill spacing; further study or exploration may disclose more than one belt of Tsable channel-fills.

The Browns Member consists mainly of mixed granitic-basaltic sandstone and siltstone which is moderately to intensely bioturbated (Bickford *et al.,* 1990). The Browns Member ranges in thickness from 0.6 to 50 metres, with a median thickness of 28.7 metres within the study area. The Browns thickens to the north and southeast of its type locality; its northward thickening appears to be at the expense of the underlying Puntledge Member, and its southeastward thickening appears to be part of a general wedging-up as it approaches the zone of channelling associated with the thicker sections of the Tsable Member. The Browns Member of the Courtenay area may have been deposited on a shallow to moderately-deep marine shelf, perhaps by current-driven redistribution of coarse-grained proximal turbidite sediments. At its type locality, the Browns Member contains a rich fauna of ammonites, referred to the basal part of the *Eupachydiscus perplicatus* zone of the early Campanian (Ludvigsen and Trask, 1991; Trask, 1997).

ECONOMIC GEOLOGY

Coal is the most abundant known mineral resource within the Cretaceous rocks of the study area. All known coal beds are contained within the Cumberland and Dunsmuir members of the Comox Formation. The Cumberland Member has been extensively drilled during the course of 130 years of coal exploration; to date, at least 250 boreholes have intersected the member within the study area, and it contains at least 94 million tonnes of coal resources of immediate interest (Gardner, 1999). The Dunsmuir Member has also been extensively drilled in search of coal. Approximately 110 boreholes have intersected substantially complete sections of the Dunsmuir, the bulk of these boreholes are in the Tsable River area or between Cumberland and Royston area of the Comox coalfield. Resources of immediate interest are probably confined to the Comox No.1 coal bed, near the base of the member.

The coals of the Comox Formation are known to be gassy within the study area (Cathyl-Bickford, 1991; Ryan, 2000), and several shows of gas have been reported from coal exploration boreholes in the Cumberland and Tsable River areas (CX-series and TR-series boreholes, collected by Kenyon, 1987). Unlicensed gas production for agricultural or domestic use has been taken from at least two of these old boreholes. Coal beds and sandstones within the Comox Formation (Dawson *et al.,* 2000), and sandstones of the Cowie Member (Cathyl-Bickford, 1992) could serve as reservoirs for natural gas. Being surrounded by organic-rich shale, the Cowie Member may be of particular interest as a hydrocarbon reservoir, provided that a viable migration pathway has extended into it. Critical risks in all conceptual gas plays would include timing of gas generation relative to formation of structural traps (England *et al*., 1989), lack of assured reservoir quality (Gordy, 1988; Hannigan *et al.*, 1998) and the possible existence of internal barriers between porous sand bodies.

Stone for building construction has been quarried from a locality near the old Number Five Mine at Cumberland, and used in the construction of the Cumberland Post Office in 1907-1909 (Barr, 1997). The stratigraphic position of this sandstone is unknown, but it is most likely either in the uppermost Dunsmuir Member or in the Cowie Member. Cowie sandstones have also been quarried for riprap and drain-rock from outcrops along the Inland Island Highway north of Browns River. The potential of the Dunsmuir, Cowie and Browns sandstones for building stones has not been studied in detail, but of the three units, the Dunsmuir sandstone may be the most accessible for quarrying near Cumberland since it forms prominent ledges and bluffs to the west and south of the village, and it appears to be relatively free from joints.

Refractory clays associated with the seatearths beneath the Comox No.3A and No.4 coal beds have been produced on a limited scale for pottery- and tile-making, basically as a co-product of underground coal mining in the Number Four Mine of Comox Colliery. Although these rocks were described by the miners as ‘fireclays’, they are unlikely to be true fireclays owing to their generally high content of organic matter.

Shales and siltstones of the Trent River Formation have been quarried on a small scale near Trent River and Bloedel Creek, for production of road-surfacing material. Their performance in this use appears to have been adequate, as demonstrated by the stability of logging roads built from these rocks.

FURTHER WORK

Although lithostratigraphic fieldwork in outcrop sections of the Comox Formation is now essentially complete, most of the results remain unpublished. An open-file report documenting the surface and subsurface lithostratigraphy and coal content of the Comox Formation is in preparation, for anticipated release in the spring or summer of 2001. The Trent River Formation requires further fieldwork, notably in its sparsely drilled and poorly exposed upper portion. Although all major outcrop areas have been mapped for their structure and for stratigraphic contacts, sections of the Trent River have been completed only in the canyons of the Oyster River and Puntledge River. In the summer of 2001, stratigraphic sections of the upper Trent River Formation will be measured along the lower canyons of the Trent and Tsable rivers, and attempts will be made to tie known vertebrate and invertebrate fossil localities into measured sections within these structurally complex areas.

Subsurface correlation studies of the Comox coals are complete in the Cumberland, Royston and Tsable River areas, except for the most recent boreholes at Tsable River, whose geophysical logs are not yet available for examination. Surface and subsurface sections throughout the Comox sub-basin will be tied together by examination of geophysical logs of boreholes which have been drilled ‘behind the outcrop’ near Trent River and Dove Creek. Results of these further studies will be published as open file reports.

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