

ARCHAEOLOGICAL OVERVIEW ASSESSMENT
OF THE PROPOSED GOLDEN PEAKS RESORT,
SOUTHEASTERN B.C.

Prepared for Pheidias Project Management Corporation

by

Wayne T. Choquette
Consultant Archaeologist

December 1, 1998

Yahk, B.C.

Management Summary

The development area of the proposed Golden Peaks Resort was evaluated for its potential to contain archaeological resources. Information on past and present environmental conditions was synthesized with the ethnographic and archaeological records and the results of field reconnaissance and the Ktunaxa Traditional Use Study. It is concluded that the predominantly steep slopes and poor solar aspect of the resort area proper are such that the presence of significant archaeological sites is unlikely, a conclusion supported by the negative results of the field investigations.

The transmission line to the resort area crosses several landforms with potential for associated archaeological deposits. It is recommended that any expansion of this facility should be preceded by an archaeological impact assessment.

Two additional suggestions arise from the study: a small deposit of peat near the base of the existing ski slope is worthy of evaluation by a specialist if it is to be further disturbed and a program of heritage interpretation could be developed to take advantage of the vantage points represented by the proposed gondola and mountaintop teahouse.

TABLE OF CONTENTS

Management Summary	i
1. Background	1
2. Study Area	1
2.1 Present Environment	1
2.2 Palaeoenvironments	5
3. Cultural Context	7
3.1 Aboriginal Population	7
3.2 Archaeology	8
4. Study Methods	11
5. Results	11
6. Assessment and Recommendations	14
7. References	16

LIST OF FIGURES

Figure 1. Location of Project Area	2
Figure 2. Golden vicinity showing location of proposed resort	3
Figure 3. Topographic setting of proposed development	4
Figure 4. View to southwest along the transmission line	12
Figure 5. Northeast along the transmission line	12
Figure 6. Air photo of project area	13
Figure 7. Route of existing transmission line showing areas of archaeological potential	15

1. Background

Golden Peaks Resort Inc. proposes to expand and develop the existing Whitetooth Ski area situated approximately 6 km west of the town of Golden in southeastern British Columbia (Figures 1 and 2).

At the completion of the proposed staged development, the resort will include an all season gondola lift and mountaintop teahouse, expanded skiable terrain, and a lodge hotel, condominiums, townhouses, single family chalets, and commercial facilities at the 1300 m a.m.s.l. base. Ancillary facilities, already in place, consist of a gravel access road and an electric transmission line. Potential improvements to these consist of some widening of road corners and possibly a future upgrade of the transmission line (Michael Vaughan, Phedias Project Management Inc. 1998: pers. comm.).

2. Study Area

2.1 Present Environment

The proposed Golden Peaks Resort area encompasses just under 1000 ha on the east face of the Dogtooth Range of the Purcell Mountains (Figures 3 and 4). The transect of the west side of the Rocky Mountain Trench from the summit of the proposed gondola lift at about 2450 m a.m.s.l. to the termination of the transmission line adjacent to the Columbia River floodplain at about 840 m a.m.s.l. encompasses half of the classic U-shape cross profile of a glaciated valley. The generally arcuate macrotopography of this slope is broken by a number of longitudinal depressions bounded by low ridges, all parallel to the strike of the Trench. Below about 1200 a.m.s.l., these topographic lows consist of abandoned early postglacial meltwater channels carved into the Trench floor till plain while those on the steeper upper valley wall are either structural, controlled by the general northerly strike of the underlying bedrock, or due to erosion by ice marginal meltwater flows. Small ponds and marshes occupy many of the lower elevation meltwater channels while small streams, Cedar Creek being the largest, are present in the linear depressions on the upper slopes.

Vegetation in the study area is representative of three biogeoclimatic zones (Braumandl et al 1992, Pheidias 1998a: 92-95). The valley wall portion of the project area supports old growth coniferous forest of the moist warm Engelmann Spruce - Subalpine Fir subzone which grades upward through a shrub dominated krummholz parkland into the Alpine Tundra zone and bare rock. Below 1450 m a.s.l., the Golden Moist Warm Variant of the Interior Cedar - Hemlock biogeoclimatic zone consists of a fire succession mosaic of coniferous and deciduous forest ranging in age from 41 to 250 years with interspersed shrubland and meadows.

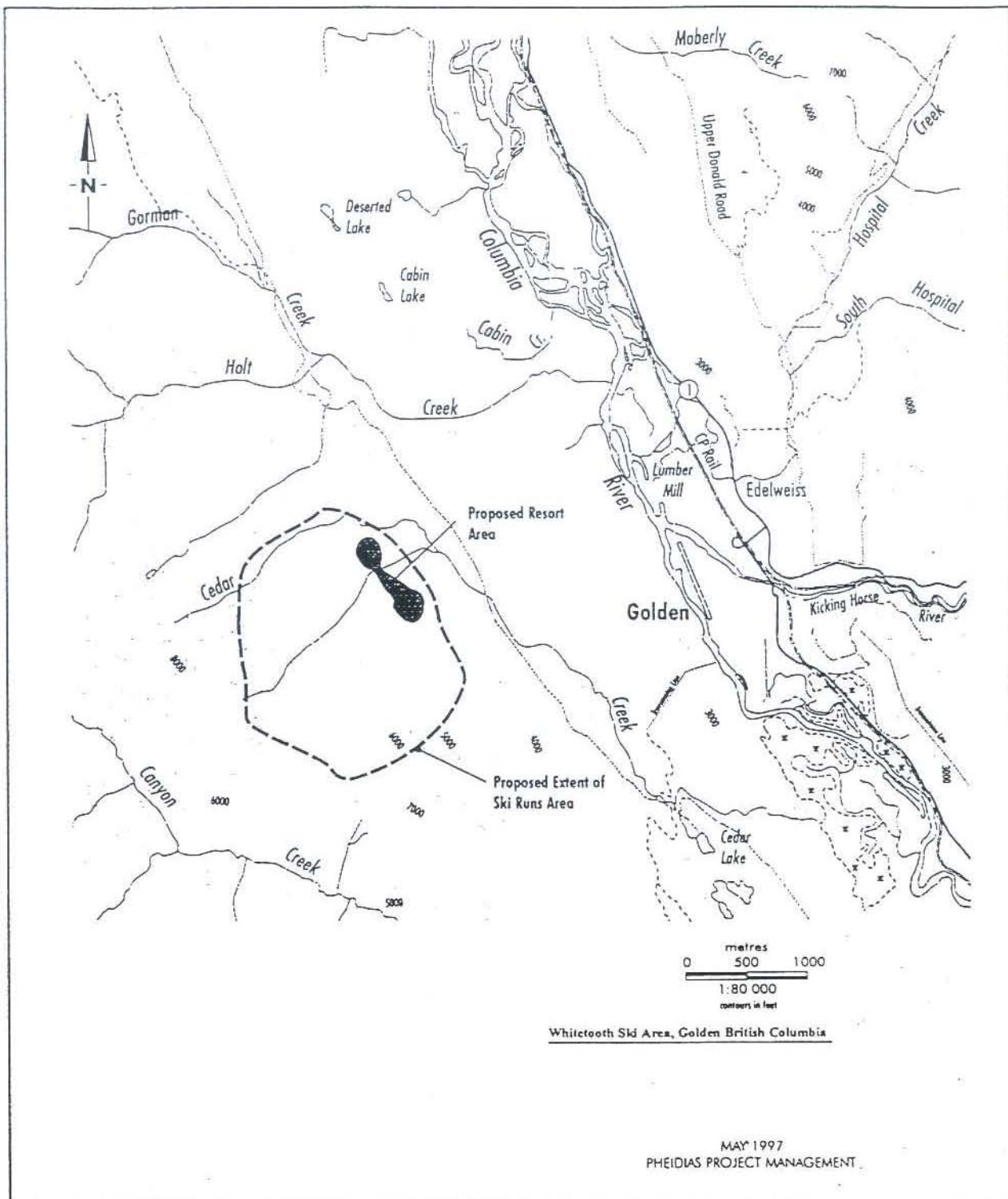


Figure 2. Golden vicinity showing location of proposed resort.

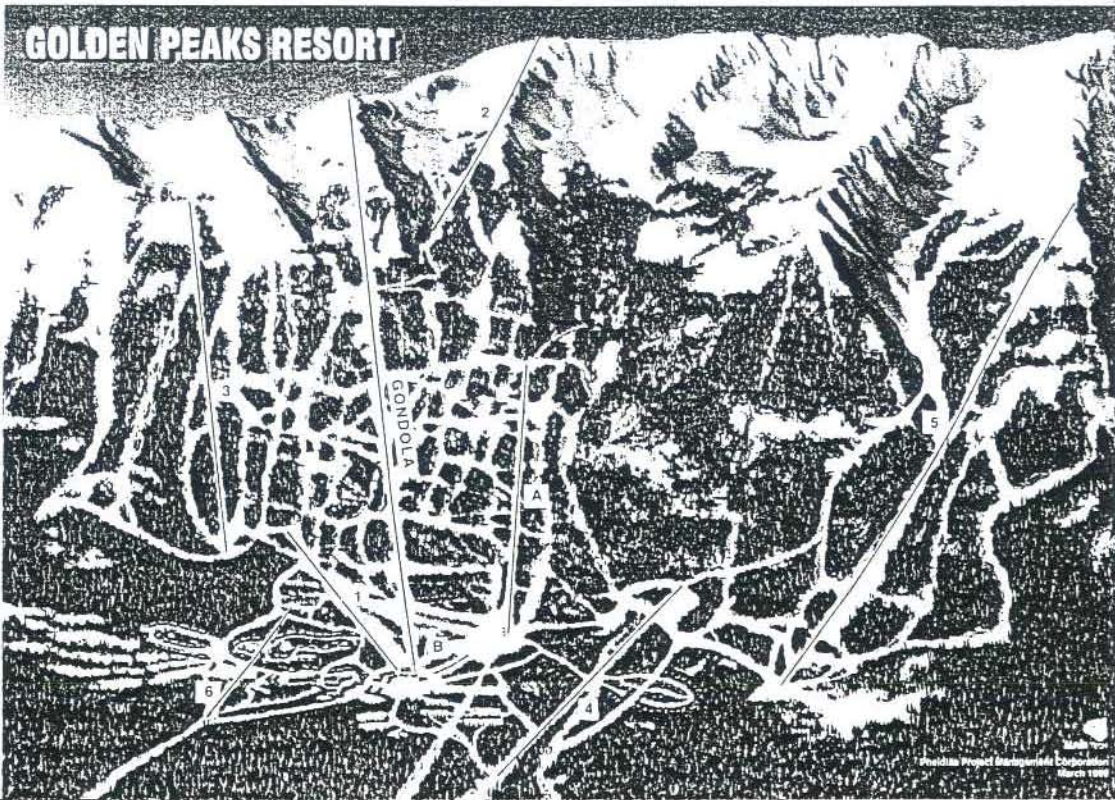


Figure 3. Topographic setting of proposed development on west side of the Rocky Mountain Trench.

The riparian areas and Columbia River marshes below the project area are important spring and fall habitat for waterfowl and winter range for elk and moose. Young fire succession shrublands, wetlands and meadows on the Trench till plain are utilized by elk, moose, and whitetailed and mule deer while mountain goats are present at higher elevations; the latter are also within the historic range of mountain caribou (Phedias 1998b: 6-14). In general, ungulate capability in the project area is low due to the limited solar aspect and deep snow cover (ibid.: 6-27); Holt Creek to the north was identified as an important east-west ungulate movement corridor (Phedias 1998a: 84). Native fish species present in the Columbia River and its major tributaries include trout, char, sturgeon, whitefish, ling cod, squawfish, suckers, and prior to the construction of hydroelectric dams lower down on the Columbia, anadromous salmon. A 20 m high waterfall in the lower part of Cedar Creek limits all fish movement further upstream and no fish were captured during sampling within the project area (ibid.: 92).

2.2 Palaeoenvironments

The complex geological history of the study area can be traced back more than 1000 million years to the deposition of Precambrian sediments in a large shallow marine basin. The Purcell Mountains are the product of several subsequent episodes of mountain building that took place over hundreds of millions of years, the latest being the Early Cretaceous Columbian Orogeny (North and Henderson 1954). The Rocky Mountain Trench had formed by the Tertiary as a combined result of uplift of the adjacent mountains, downfaulting, and erosion by local watercourses (Schofield 1913, Holland 1964).

Within the last few million years, the Trench floor was modified by several major glacial advances that rearranged the previous drainage systems. Evidence has been noted of at least three separate Late Wisconsinan advances (Clague 1975). During the latest major glacial episode, small glaciers originating in Purcell and Rocky Mountain cirques expanded and merged into a system of valley glaciers. Glacial till was deposited in the Rocky Mountain Trench north of the study area after 21,500 years ago (Fulton and Achard 1985: 5). By 17,000 years ago, a large southerly flowing ice stream occupied the Rocky Mountain Trench (Clague et al 1980).

Final deglaciation commenced about 15,000 years ago (Ryder 1981) but the chronology of postglacial landscape evolution has not yet been defined in much detail. It is known that the Rocky Mountain Trench was occupied by several large proglacial lakes dammed by moraines and melting ice blocks. The high stand of one of these lakes, Glacial Lake Invermere, occupied the Trench floor below the present resort area at an elevation of 900 m a.m.s.l. (Sawicki 1990). An upper limiting age assessment for Glacial Lake Invermere and for the ice dam formed by the Trench glacier is provided by Fulton's (1971) date of 10,000 ± 140 B.P. (GSC-1457) on peat near Oldman Creek about 20 km north of the project area. The early millenia of the Holocene (the post-glacial period) were characterized by increasing drought, a climatic interval known variously as the

"Altithermal" "Thermal Maximum" or "Climatic Optimum". By 10,000 years ago, there was probably less glacial ice in the region than exists today and by 8000 years ago, it is doubtful if there were any glaciers at all in the surrounding mountains. The climate became cooler around 5000 years ago and cirque glaciers began to form again; this interval is known as the "Neoglacial". Increased glacial activity is documented in the adjacent Rocky Mountains around 5000 and 2800 years ago, and the Little Ice Age, from ca. A.D. 1650 - 1870, was the most intense glacial period since the Pleistocene (c.f. Choquette 1985).

The earliest vegetation in the region was an immediate postglacial pioneer community of grass, sage, cattails and scattered conifers that occupied slopes and ridges amongst the expanses of bedrock, lingering glaciers, and proglacial lakes. This community was probably adapted to the cold dry conditions resulting from the influence of the large glaciers still present on the British Columbia interior plateau and on the plains east of the mountain front (Clague 1989). As the climate warmed after 10,500 years ago, coniferous forest invaded the valley bottoms and cloaked the mountainsides. The trend to aridity and high solar insolation apparently peaked around 8000 years ago, a time when forest communities in the upper Columbia basin were simpler in composition and were characterized by pronounced altitudinal and latitudinal zonation (Choquette 1987). At lower elevations, grasslands and Douglas fir parkland would have been maintained at least in part by high forest fire frequencies. Ungulate capability would have been high during the early Holocene.

Before 7000 years ago, the climate was markedly continental, but around this date a major change occurred when the maritime westerlies began to exert a significant influence (ibid.). The crest of the Purcell Mountains became a major climatic divide, in the leeward of which grasslands persisted in rainshadows. New plant communities began to develop in the storm tracks that now crossed the Trench downwind of major gaps in the Columbia Mountains. By 5,000 years ago, global cooling marking the beginning of the Neoglacial period resulted in a decline in forest fire frequency and expansion of forests at the expense of grasslands throughout the region. This cool, moist trend was accompanied by significant changes in the vegetation: cedar and hemlock pollen appears in core samples 4000-5000 years ago and becomes common after 3000 b.p. (Hebda 1995). Between 2000 and 500 years ago, a second, albeit shorter and less intense drought interval occurred, when forest fire frequency increased again with a concomitant expansion of ungulate range. During the final episode in the region's palaeoclimate, the Little Ice Age, severe winters had negative effects on animal and human populations (c.f. Choquette and Holstine 1982).

3. Cultural Context

3.1 Aboriginal Population

At the time of contact, the upper Columbia Valley was occupied by two cultural groups, the Ktunaxa and the Kinbasket Shuswap band. The major ethnographic works on the Ktunaxa are Schaeffer (1940) and Turney-High (1941); Smith (1984) has compiled a recent synthesis. Teit's 1909 and 1930 accounts of the Shuswap comprise the bulk of written data for that group.

3.1.1 The Ktunaxa

Known as the Kutenai or Kootenay Indians in the ethnographic literature, the Ktunaxa are a culturally and linguistically unique group who apparently have inhabited the region that now bears their anglicized name since early postglacial times. The cultural evolution of the Ktunaxa paralleled the evolution of the diverse regional ecology, so that by late precontact times, they comprised four geographically and linguistically distinct subdivisions. The Upper Ktunaxa inhabited the Rocky Mountain Trench from Tobacco Plains north to beyond Golden, as well as the Rocky and eastern Purcell mountains.

The Upper Ktunaxa followed a nomadic seasonal subsistence round, the structure of which was determined by the location and scheduling of abundance and ripening of a broad range of animal and plant resources. Large ungulates, particularly deer and elk, were hunted singly with bows and traps and in communal hunts, mostly in the spring and fall. The latter provided the bulk of the meat that was dried and stored for winter consumption. From late spring through early fall, game, fish, waterfowl, and plant foods such as roots and berries were acquired by task groups (for example, a group of women and children picking berries, accompanied by a few men who undertook casual hunting at the same time). After obtaining horses from the Flathead around A.D. 1730, the Ktunaxa began making the thrice yearly treks to the bison grounds east of the Rockies for which they are well known in the historic literature.

Cooking by stone boiling was the preferred method of preparing food for immediate consumption, except for roots such as camas and bitterroot, which were baked in earth ovens. Foods not eaten directly were dried for winter storage; berries were important in this regard. The main dwelling of the Upper Ktunaxa was the hide-covered tipi; there is some conjecture that prior to obtaining horses, a covering of mats also may have been used.

Ktunaxa social organization was kinship-based and loosely organized into politically independent bands of related families. The hallmark of this social structure was its flexibility: band membership was voluntary and both size and composition varied from year to year. Chieftainship accrued to those with leadership qualities, although some tendency towards hereditary chiefs is apparent in latest times.

3.1.2 The Shuswap

The Kinbasket band were speakers of the Shuswap language, a division of the Salishan linguistic stock. They were named for Kenpesket, a North Thompson chief who had begun the practice of seasonal migrations to the Columbia River from the winter village on Adams Lake. Social problems at Adams Lake resulted in Kinbasket's group resettling themselves near pre-dam Kinbasket Lake around 1840. They gradually moved southward, camping near Golden and then Spillimacheen, where they encountered the Ktunaxa, whose numbers had been significantly reduced by disease. The two groups subsequently intermarried and their descendents are members of the present-day Shuswap Band of Invermere. Other descendents of this group reside in the Neskonlith community near Adams Lake (Bob Manuel 1996: personal communication).

The Shuswap settlement pattern was semi-nomadic with a strong riverine focus. The time of maximum community economic focus occurred during the summer and early fall when all groups would gather at fishing stations on the rivers for the annual salmon runs. The catch was processed and stored for consumption from winter to early spring when settlements of semi-subterranean "pithouses" were occupied by groups of closely related families. These winter villages were situated close to the shores of the major rivers, usually on sandy, well-drained soil (Dawson 1892: 18); associated with them were non-habitation features such as storage pits and sweat lodges. With the coming of spring, individual family units dispersed into the surrounding terrain in quest of a diverse range of plant and animal resources.

3.2 Archaeology

3.2.1 Previous Archaeological Investigations

The BC Hydro 230 kv Canal Flats to Golden transmission line was surveyed for archaeological sites in 1974 by Brian Spurling and James Pike but no sites were found in the Golden vicinity.

As part of studies associated with BC Hydro's proposed Kootenay Diversion Project, archaeological surveys were conducted in much of the southern Rocky Mountain Trench (Sneed 1979, Wilson 1981). The Kootenay Diversion study area is described as extending to Kinbasket Lake (Wilson 1981: 20) but survey coverage was apparently incomplete at the north end of the project area and there is no specific information or definitions as to what landforms and localities were actually examined. Precontact sites were recorded along the Columbia River to about 4 km south of Golden. Both consist of stone artifacts exposed in cultivated areas. Specific landform associations were not recorded but the sites are recorded as being on low alfalfa fields, one adjacent to a marshy area and the other associated with a spring. A large workshop/transitory activity site was recently found by the present writer on the highest terrace above the Kicking Horse River at the eastern margin of the Rocky Mountain Trench till plain. Only one site, adjacent to the

west side of pre-Mica Dam Kinbasket Lake, has been recorded in the Columbia Valley north of Golden .

3.2.2 Culture History

As yet, archaeological research in the Columbia Valley portion of the Rocky Mountain Trench has not been sufficient to provide much information about the lifeways of the local human population before about 3000 years ago. Cultural complexes with antiquities on the order of 10,000 - 11,000 years have been defined in the Bow Valley to the east (Fedje 1986) and the Purcell Mountains to the south (Choquette 1996) where the early cultural deposits were found in sediments associated with the drained basins of the earliest proglacial lakes. Cultural materials have been found in the same settings in the upper Columbia Valley but little can be said about them. The nature of the subsistence base is unknown; the early postglacial residents of the Bow Valley and southwestern Purcells had strongly hunting-oriented economies but the existence of viable fisheries lower down on the Columbia river at least 9000 years ago indicates that exploitation of aquatic resources cannot be ruled out entirely for the upper Columbia at this early time level.

The relatively common occurrence in the upper Columbia Valley of medium to large side-notched and stemmed projectile points, which typically date between ca. 8000 and 3000 years ago in adjacent areas, indicates that the area was occupied by a hunting-gathering society during this time span. Evidence from Kootenay National Park (Choquette 1988) shows that humans' movements were taking them north to the Kootenay River's headwaters as well as east and west across the Purcell Mountains during this time. The occupants of some sites dating to this time period were probably related to the valley-bottom oriented, band level society who inhabited the more southerly parts of the Rocky Mountain Trench.

The last 3000 years are somewhat better known and within this span of time, a number of changes took place. Some, like the adoption of the bow and arrow and the concomitant change to small side-notched arrow points, parallel broad cultural patterns also evident in the archaeological records of the neighbouring plains and plateaux. The changes in stone use apparent in the upper Columbia Valley sites indicate an increased orientation to the Rocky Mountains. Other changes include increased exploitation of sheep and elk and within the last 2000 - 2500 years, there is evidence of a winter settlement focus on the ungulate range in the semi-arid portion of the Rocky Mountain Trench north of Canal Flats.

In addition to the more-or-less continuous utilization of the upper Columbia Valley by hunting groups from early postglacial time onward, there is also evidence of discontinuous occupation by other people having a stronger orientation to the salmon fishery. The seasonal predictability of this resource coupled with specialized technology and facilities for taking and storing salmon enabled these people to adopt a semi-sedentary lifestyle: a significant part of the year was spent in small settlements of semi-

subterranean houses. The pithouse depressions and associated cache pits that are scattered along the Columbia River north from Canal Flats probably relate to Salish occupation but a more precise definition of their cultural affiliation, as well as the dates of occupation, have yet to be determined.

The cultural depressions in the upper Columbia Valley cannot all be the result of winter habitation by the Kinbasket Band, as this group was too small and arrived too late to account for the relatively large number of these features here. The apparently discontinuous presence of specialist salmon fishers is probably tied to the periodic fluctuations in salmon carrying capacity postulated for the upper Columbia drainage (Choquette 1985). A significant problem in regional archaeology involves elucidating the settlement dynamics and identities of resident salmon fishers and delineating the salmon fishery's capability to sustain their winter village pattern.

The Contact Period here begins at the turn of the eighteenth century. Local traditions hold that the Nor'Westers La Gassi and Le Blanc were the first white men to cross what is now known as Howse Pass, in 1800 (Spry 1963: 28), becoming the first Europeans to enter the Columbia River drainage. David Thompson of the Northwest Company sent Jaco Finlay across this pass in 1806 to cut trails before Thompson's crossing in 1807 (*ibid.*). The Thompson party descended the Blaeberry River to the Columbia and travelled south to the mouth of Toby Creek, where Kootenae House was established for trade with the Ktunaxa. Thompson's party returned with furs by the same route in the following years.

Most of the rest of recorded history of the upper Columbia Valley is tied to transportation and somewhat later, settlement. The CPR was constructed through the Kicking Horse Pass between 1883 to 1886 and became the major impetus to industrial development in the Golden area, including both logging and mining. Steamboat traffic was the primary means of transportation southward until the completion of the Kootenay Central Railroad in 1908. Construction of the Trans Canada Highway in this vicinity began in 1955.

For more comprehensive discussions of regional archaeology and palaeoecology, the reader is referred to Choquette (1993 and 1996).

4. Study Methods

In the absence of any inventory of archaeological sites in the study area, this assessment of archaeological potential is based on an evaluation of the landscape with regard to the presence and condition of landforms suitable for past use by humans. While people have undoubtedly traversed much of the region at one time or another, the ethnographic record and the inventory of archaeological sites in surrounding areas indicate that archaeologically detectable human activity has tended to be concentrated on level, well-drained landforms with good sun exposure and nearby fresh water. Additional factors favouring the use of a landsurface that would result in an archaeologically meaningful deposit include location re travel routes and strategic access to resources such as ungulate range, fish runs, plants, waterfowl habitat, or minerals.

The first stage in the overview assessment of the proposed Golden Peaks project consisted of assembling relevant background information which has been summarized in the previous two sections. This information provides a macroenvironmental perspective from which to assess the range of potentially archaeologically significant landforms present in the development area.

The project area was then examined via field reconnaissance. This included landscape inventory via a series of vehicle traverses across the proposed resort development area followed by closer inspection of terrain identified as having potential for associated archaeological deposits and/or features. The examined terrain included structural benches and ridges on the valley wall where the base facilities, lifts and runs are proposed; level to gently sloping portions of the till plain with southerly exposures cut by access roads; and parts of drumlins, colluvial aprons and small terraces associated with streams, ponds and marshes traversed by the transmission line (Figures 4 and 5). These landforms and their associated sediment caps were investigated via foot traverses targetted at inspection of subsurface exposures. In the project area, such exposures included cutbanks, vehicle tracks and bulldozed areas, rodent backdirt piles, deflated surfaces and tree throw; exposure was extensive, especially in the form of roadcuts (Figure 6).

5. Results

A small deposit of peat was identified on the west side of an access road a short distance above the existing ski hill base (Figure 6) but no precontact cultural deposits or features were observed anywhere in the proposed project area.



Figure 4. View to southwest along the transmission line to proposed resort area on east slope of the Dogtooth Range.



Figure 5. Northeast along the transmission line crossing of small pond and adjacent ridge; Rocky Mountains in background.



Figure 6. Air photo of project area showing extent of cutbank exposure and location of peat deposit.

6. Assessment and Recommendations

No cultural materials were found in the proposed Golden Peaks resort area and no specific Traditional Use sites were identified in the resort area itself (Laura McCoy 1998: personal communication). This is not surprising, since most of the terrain is moderately to steeply sloping (Pheidias 1998: 3-8, Exhibit 3-10), glaciated mountainside with relatively heavy forest cover and generally poor solar exposure (ibid: 3-8, Exhibit 3-11). The area of the proposed resort development proper thus contains no archaeologically significant terrain and the portions of the road that might require upgrading are situated on slopes that also have low archaeological potential. Therefore, it can be concluded that the expansion of the Whitetooth Ski Area into the Golden Peaks Resort does not pose any threat to archaeological values and **it is recommended** that the development as presently proposed can proceed without further archaeological concern.

That being said, it is noted that the huckleberries and ungulates occurring in the general vicinity were resources of traditional economic importance to the Ktunaxa (Laura McCoy 1998: personal communication) and the area below the proposed resort does contain some level areas with suitable solar exposure and proximity to water that could have served as campsites and activity areas associated with precontact human exploitation of the plant and animal resources of this part of the Rocky Mountain Trench. In particular, the low ridges and colluvial aprons overlooking and adjacent to marshes and watercourses such as those traversed by the transmission line across the Trench till plain have potential to contain significant archaeological deposits related to such uses (Figures 5 and 7). Therefore, **it is recommended** that an archaeological impact assessment should be conducted prior to any upgrade or expansion of the transmission line outside the existing right-of-way.

Although the peat deposit is not technically protected under the Heritage Conservation Act, it is of potential significance to the palaeoenvironmental record. It is not presently threatened but should not be destroyed without being examined in more detail to identify and evaluate its contents.

One further point deserves mention and that has to do with the potential for interpretation of the natural and cultural heritage of the Golden vicinity. The nature of the proposed resort, especially the all season gondola and mountaintop tea house with their attendant expansive views of the Rocky Mountain Trench and the surrounding mountains lends itself very well to interpretation of the evolution of the landscape and the complex drainage system, along with the culture history of this part of the Columbia River basin. It is therefore suggested that this opportunity be seriously pursued once the development has sufficiently progressed towards detailed design of the mountain top facilities.

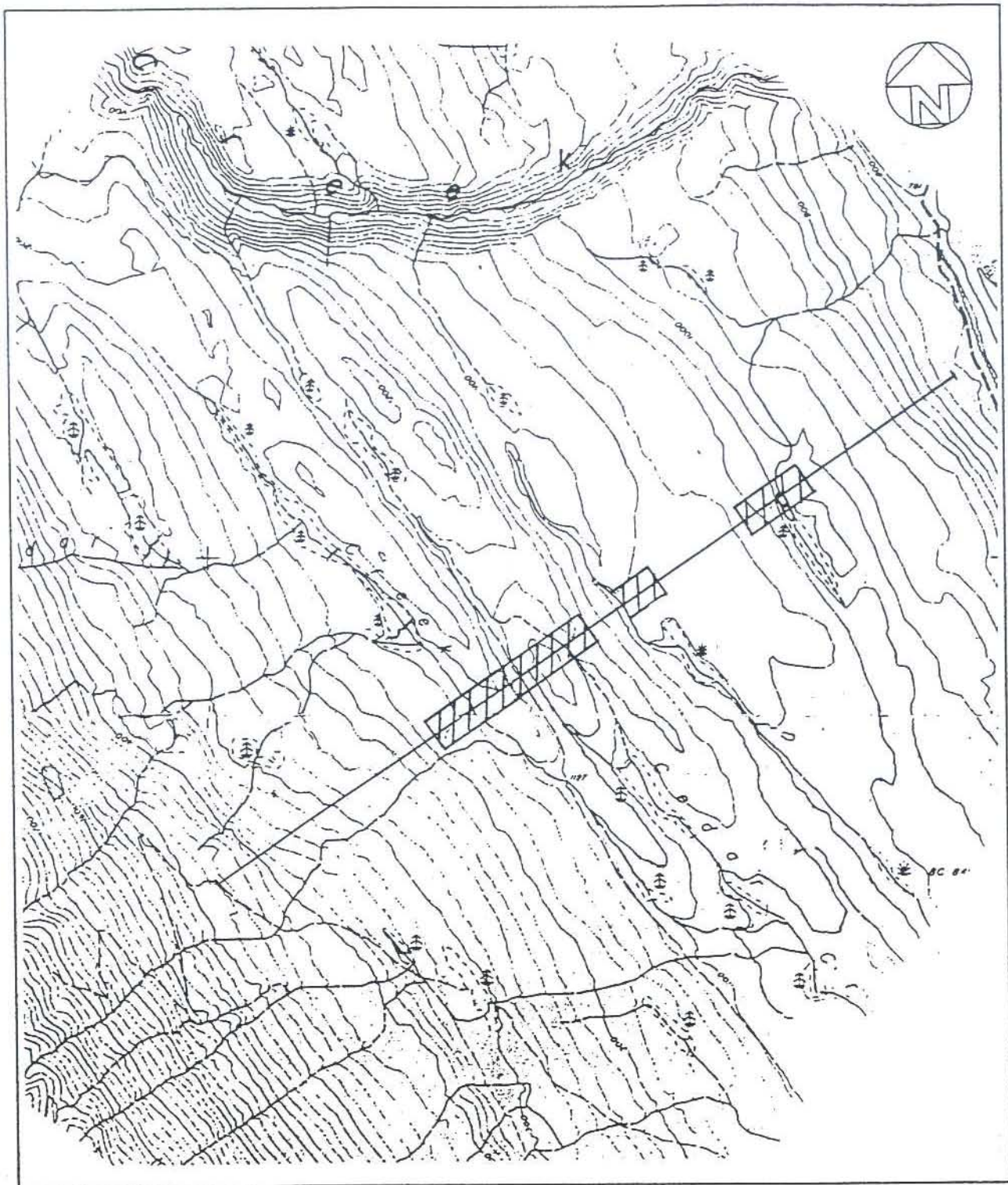


Figure 7. Route of existing transmission line below proposed Golden Peaks project area showing areas of archaeological potential. Approximate scale 1: 31,000.

7. References

Braumandl, T.F., M.P. Curran, G.D. Davis, H.J. Quesnel, G.P. Woods, D.L. DeLong and M.V. Ketcheson

- 1992 Biogeoclimatic Subzones and Variants of the Nelson Forest Region. in Braumandl, T.F. and M.P. Curran (eds.) A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Victoria: Research Branch, Ministry of Forests.

Choquette, Wayne T.

- 1985 Excavations at DiQj-18, South Slocan: A Test of a Model of Upper Columbia Basin Human Settlement Dynamics. Report on file, Ministry Library, Ministry Responsible for Culture, Victoria.
- 1987 A Palaeoclimatic Model for the Upper Columbia River drainage basin. in McKinnon, Neil and Glenn Stuart, eds. Man and the Mid-Holocene Climatic Optimum. Calgary: The Students' Press, pp. 311-344.
- 1988 Results of an Archaeological Resource Survey and Assessment in Kootenay National Park. National Historic Parks and Sites Branch Manuscript Report. Canadian Parks Service, Archaeological Research Services Unit, Calgary.
- 1993 Archaeological Resource Overview for the Nelson Forest Region. On file, Archaeology Branch, Ministry Responsible for Culture, Victoria.
- 1996 Early post-glacial habitation of the upper Columbia region. in Carlson, R. ed. Early Human Occupation in British Columbia. Vancouver: University of British Columbia Press.

Choquette, Wayne T. and Craig Holstine

- 1982 A cultural resource overview of the Bonneville Power Administration's proposed Garrison - Spokane 500 kv transmission line. Bonneville Cultural Resources Group, Eastern Washington University Reports in Archaeology and History, no. 100-20.

Clague, John

- 1975 Late Quaternary Sediments and Geomorphic History of the Southern Rocky Mountain Trench, British Columbia. Canadian Journal of Earth Sciences 12(4): 595-605.

1989 Cordilleran Ice Sheet. In R. J. Fulton, ed. Quaternary Geology of Canada and Greenland. Geological Survey of Canada, Geology of Canada 1.

Clague, John, J.E. Armstrong and W.H. Matthews

1980 Advance of the Late Wisconsin Cordilleran Ice Sheet in Southern British Columbia since 22,000 Yr. B.P. Quaternary Research 13: 322-326.

Dawson, George M.

1892 Notes on the Shuswap People of British Columbia. in Proceedings and Transactions of the Royal Society of Canada for the Year 1891, Vol. 9: 3-44. Montreal. 10

Fedje, Daryl

1986 Banff Archaeology 1983-1985. In Ronaghan, Brian ed., Eastern Slopes Prehistory: Selected Papers. Archaeological Survey of Alberta, Occasional Paper 30: 25-62. Edmonton.

Fulton, Robert J.

1971 Radiocarbon geochronology of southern B.C. Geological Survey of Canada Paper 71-37.

Fulton, R.J. and R.A. Achard

1985 Quaternary Sediments, Columbia River Valley, Revelstoke to the Rocky Mountain Trench, British Columbia. Geological Survey of Canada Paper 84-13.

Hebda, Richard J.

1995 British Columbia Vegetation and Climate History With Focus on 6 KA BP. Geographie Physique et Quaternaire 49: 55-79.

Holland, S.S.

1964 Landforms of British Columbia. BC Department of Mines and Petroleum Resources Bulletin, no. 4

North, F.K. and G.G.L. Henderson

1954 Summary of the Geology of the Southern Rocky Mountains of Canada. in Guidebook, Fourth Annual Field Conference Banff-Golden-Radium. Calgary: Alberta Society of Petroleum Geologists, pp. 15-81.

Phedias Project Management Corporation

1998a Golden Peaks Resort. Formal Proposal for Expansion of the Whitetooth Ski Area, Golden B.C. On file, B.C. Lands, Victoria.

1998b Golden Peaks Resort. Ski Area Master Plan. On file, B.C. Lands, Victoria.

Pike, James

1974 Heritage resource investigations along proposed BC Hydro and Power Authority transmission line right-of-ways, summer 1974. On file, Ministry Library, Ministry Responsible for Culture, Victoria.

Ryder, J. M.

1981 Biophysical Resources of the East Kootenay Area: Terrain. British Columbia Ministry of the Environment, APD Bulletin no.7.

Sawicki, Oswald

1990 Geomorphology of Glacial Lake Invermere, Upper Columbia River Valley, British Columbia. Master's Thesis, University of Calgary.

Schaeffer, Claude E.

1940 The Subsistence Quest of the Kutenai. Ph.D. Dissertation, University of Pennsylvania.

Schofield, Stuart J.

1913 Geology of the Cranbrook Map-Area, British Columbia. Canada Department of Mines, Geological Survey Memoir 76.

Smith, Allan H.

1984 Kutenai Indian Subsistence and Settlement Patterns, northwest Montana. Seattle: U.S. Army Corps of Engineers.

Sneed, Paul G.

1978 Kootenay River Diversion: Cultural Heritage Resources: Phase 1 Impact Statement. On file, Ministry Library, Ministry Responsible for Culture, Victoria.

Spry, Irene M.

1963 The Palliser Expedition. Toronto: Macmillan.

Teit, James A.

1909 The Shuswap. American Museum of Natural History Memoirs Vol. 2: 448-594.

1930 Salishan Tribes of the Western Plateaus. Bureau of American Ethnology, Annual Report, vol. 45: 23-296.

Turney-High, H.H.

1941 Ethnography of the Kutenai. American Anthropological Association Memoir 6: 1-202.

Wilson, Ian R.

1981 Kootenay River Diversion Environmental Impact Assessment Heritage Studies.
On file, Ministry Library, Ministry Responsible for Culture, Victoria.