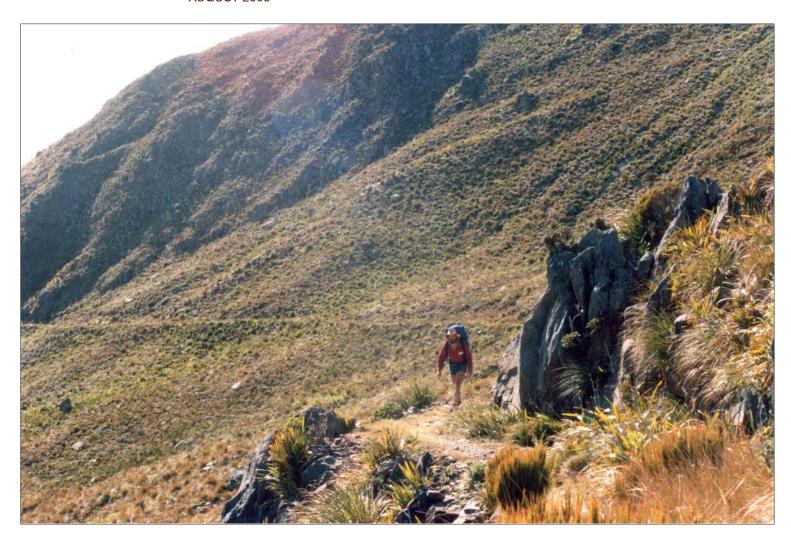
Croesus Track Heritage Assessment and Baseline Inspection Report

Prepared for Greymouth/Mawheranui Area Office

Jackie Breen, TSO Historic Resources, West Coast Conservancy/Tai Poutini

AUGUST 2006





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Heritage Assessment
Jackie Breen, TSO Historic Resources, West Coast <i>Tat Poutini</i> Conservancy
Track condition and recommendations by Mark Nelson (South Westland AO) and Jackie Breen
AUGUST 2006
Cover: Croesus Track above Ces Clarke Hut.
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1.0 Introduction

1.1 EXECUTIVE SUMMARY

Croesus Track, as it is now known, was built in three sections from 1881 to 1899. All three sections were built to facilitate access to alluvial and quartz gold mining areas in upper Blackball Creek.

A field trip to undertake a historic baseline inspection of the track was carried out between 30th November and 1st December 2005. Team members included Jackie Breen (TSO Historic, West Coast CO), Mark Nelson (Programme Manager Historic/Visitor Assets, South Westland AO) and Fiona Thomson (CRO Concessions, West Coast CO).

The first 10 kilometres of track to Ces Clarke hut were 'baselined' on the first day. Collecting the detail required meant that normal track tramping time was doubled. The last 2 kilometres above the hut to the end of the benching was carried out the following day when low cloud obscured general views of the track and the surrounding topography. The metre wheel was not used on this final section because of its rough nature of and time constraints.

1.2 SETTING

The Croesus Track begins at Smoke-ho car park eight kilometres north of Blackball. From here it follows Blackball Creek to its origin, where it climbs up the western flank of Croesus Knob. The formed pack-track ends around two kilometres north-west of Ces Clarke Hut, where a marked route along the tops to Barrytown starts.

The vegetation changes with topography, from the podocarp/hardwood forest from the Smoke-ho car park end to sub alpine species where it climbs from the Garden Gully Track junction to the hut. While the general topography is fairly steep the first seven kilometres of track climbs at an easy grade. From 300m above sea level at Smoke-ho to 600m above sea level at the head of Blackball Creek (junction with the Garden Gully track). From here the track climbs a further 300m in the space of three kilometres to 900m above sea level at Ces Clarke Hut, and another 200m in two kilometres, 1200m above sea level at pack-track end.

The track has two access points, Smoke-ho end via Blackball, and from Barrytown up the western flank of the Paparoa ranges onto a route along the tops. There are two huts on the main track, Ces Clarke Hut and Top Hut built during the 1930s depression. A third hut, Garden Gully Hut, also a 1930s historic hut, is situated on the Garden Gully Track.

There are three NZFS swing-bridges on the track, crossing Smoke-ho Creek, Clarke Creek and Blackball Creek respectively.

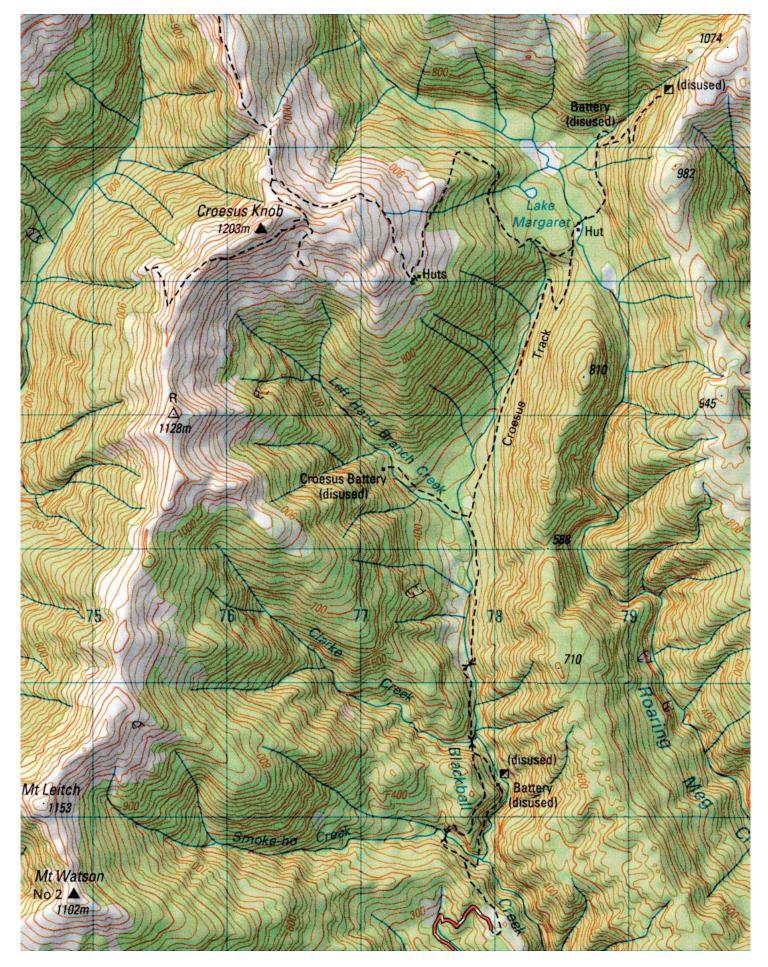


Figure 1: View of Croesus Track - Smoke-ho car park to Paparoa tops

2.0 History

2.1 EARLY DEVELOPMENT OF TRACKS IN THE GREY VALLEY

Gold mining in the Grey Valley began early in the West Coast gold rush. Blackball Creek was where the first gold was found in 1864. While mining here occurred from an early date, infrastructure and development work (building of roads, tracks etc) didn't begin until after 1876, prompted by the abolition of New Zealand provinces and institution of the Counties Act and subsequent formation of the Grey County Council in 1877. The new council constituted what was formerly the extreme ends of Nelson and Westland Provinces. Seemingly, each of these provinces had seen fit to expend infrastructure development monies in areas closer to their main centres, rather than on infrastructure nearer Greymouth. More often than not, track and road building had been left to the initiative of local miners or businessmen.¹

The mandate given to Grey County Council to develop infrastructure did not mean that tracks and roads were built apace. There was great need, from many quarters, all over the county for development work. Many areas were rugged and rough, and made inaccessible by swift creeks and thick forest. Both survey work and subsequent track building was time consuming and expensive. Edward Butler, Grey County's first overseer or engineer was responsible for surveying and overseeing this work on numerous early tracks and roads in the district, often articulated the difficulties caused by these issues (see descriptions of the early Croesus Track below).²

P. R. May 1962. The West Coast Gold Rusbes (1st ed) Pegasus Press, Christchurch; p161; V. Hawker, 1960. Historical Survey of the Grey County. Greymouth Evening Star, Greymouth. pp.9-13. For attitude of the Nelson province to the area see District Engineers Report, Nelson Gazette 1869. The lack of action from the Provinces and building of tracks closely follows similar problems had by miners in Inangahua.

Lawn, C.A. nd. *Pioneer Land Surveyors of New Zealand*, part IV. New Zealand Institute of Surveyors. Online edition: p.326; V. Hawker, 1960. Historical Survey of the Grey County. *Greymouth Evening Star*, Greymouth. pp.27-29. Butler had tried to tender his resignation not long after he started the job — issues of lack of time, resources and the rugged nature of the land were evident from the outset. Butler only lasted in the job for seven years. He died suddenly in 1884 after a particularly arduous surveying trip undertaken in haste to get plans into central government before the due date in order to be eligible for financial assistance. John Higgins, his nephew and long serving successor in the job as County Engineer, reported that the "hardships and privations inseparable from the position proved too severe, and he died on the 4th of August, 1884, at the early age of 42"; Furkert, F. W. 1953, *Early New Zealand Engineers*. A.H. & A.W. Reed, Wellington, p.130.

2.2 THE BLACKBALL DIGGINGS — FIRST COUNTY TRACK 1881

Gold was first discovered in Blackball Creek in the November 1864. This instigated a small rush to the area in January 1865. From the outset the diggings along Blackball Creek were often out of favour with miners because of the rugged nature of the creek and surrounding hills, and the poor condition of access tracks. The alluvial diggings here never provided spectacular returns, and along with other far flung parts of Nelson Province, very few local government sponsored works (the construction of tracks etc) were undertaken.³

In 1878 the new Grey County Council called for Butler (County Road Overseer) to commence a survey to build a new track to the Blackball diggings. In his 1879 report to the council he describes the conditions Blackball miners had to contend with in order to get supplies:

From the Grey River to the point where the survey commences rations are packed on a horse via Fords Creek and over Hughes Hill, 500 feet high, which intervenes East named creek [sic] and Coal Creek, where a rations depot or "tucker stand" is erected. From thence to point of termination of survey [Clarke Creek], rations & co. have to be packed on men's backs over a most precipitous and dangerous country (about 2½ miles) consisting of hills from 300 to 600 feet high, slopes of which rise from 20° to 80° degrees in the fast Rock bound gorges and rapid streams with high hills intervening ... ⁴

The new track was to start at the junction of Coal and Blackball Creeks, and end at Clarke Creek — a small tributary of Blackball Creek. Tenders were called for the track construction, the contract was won by Martin Kean, and a metalled track was completed by late 1881.⁵ An early topographical plan of the area shows the general line of this section of track in the vicinity of Clarke Creek and indicates there was a rough track up the spur above Clarke Creek leading to the tops with a blazed route across the tops to the XVII Mile or Barrytown diggings (see appendix 1).⁶

P.R. May 1962. The West Coast Gold Rushes (1st ed), Pegasus Press, Christchurch; p161, 213, 240. Lyttleton Times 2/2/1865, Grey River Argus 29/6/1869.

⁴ 1878 Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.

⁵ 1879 Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.; General specification for Blackball Track from Tucker Stand to Clarke's Creek, Grey County May 1881. Copy from History House, Greymouth; 1888, February, Grey County Road Overseer's Report to the County Council mentions this work. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.

⁶ Topographical Plan of Waiwhero District, 1881 SO 6346.

2.3 IMPROVEMENTS AND EXTENSIONS TO THE COUNTY TRACK 1887 AND 1892

In 1883 with gold mining prospects in the vicinity of Barrytown improving, Grey County Council ordered a line to be blazed from Barrytown to the Paparoa tops to facilitate prospector access to the diggings. Work didn't begin straight away; between 1885 and 1887 the route from Barrytown to the tops at the head of both the Blackball and Moonlight Creeks was cut and finger post markers put in place. John Higgins, Grey County

Engineer, described the track in one of his reports:



Figure 2: Small pack train on the Blackball to Moonlight Track some time before 1890. Similar horse transport would have serviced the Blackball diggings

The track has been cleared about 10 feet wide from Barrytown to the top of Mount Davy, 3000 feet above sea level and finger posts put in as far as the junction of Moonlight and Blackball spurs. The snow coming on, I was forced to abandon the work for the winter, intend to get it finished early in the summer. The total length will be about 15 miles, and it is some of the roughest country ever travelled by man.⁷

Alluvial mining on Blackball Creek in the mid 1880s still remained an attractive prospect to some despite the fact that from around 1884 prospecting for quartz gold had begun in the area. In 1885 the Minerva Sluicing Company, later the Roaring Meg Sluicing Company, registered a claim at Blackball Forks. In the following years, with the Forks becoming a significant mining locality on Blackball Creek, miners began to agitate for improved access. In 1887 they petitioned the County Council via a letter to the County Road Overseer requesting an improved track. The overseer addressed the request by providing a descriptive account of the condition of the track to the County Council:

The track over which provisions are now packed from the Brunner and Moonlight Track to the foot of Smoko Hill⁹ was cut by Kinsella, storekeeper at the foot of Black Ball. It is (without exception) the roughest and most dangerous apology for a pack-track in this county. It follows the bed of Blackball Creek crossing and recrossing innumerable times, for the first 2½ miles where Coal Creek joins it. For one and a half miles of this the Creek is simply a rock bound gorge. The bed is filled with large boulders, and is dangerous to travel, even in fine weather when the creek is low. In wet weather the creek

July 1887, Grey County Road Overseer's Report to the County Council mentions this work. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika; Feb 1888 Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika; Appendices to the Journal of the House of Representatives (AJHR) 1885 Wardens Report; In Hawker, V. 1960. Historical Survey of the Grey County. Greymouth Evening Star, Greymouth, on p.32 there is an account of Higgins erecting arrow shaped stone cairns as direction markers along the route on tops.

⁸ AJHR 1884, H-9:34, Department of Conservation West Coast Conservancy Archives, Hokitika.

⁹ Now called Smoke-ho.

is a roaring torrent and is impassable for man or beast. From the junction of Coal Creek with the Blackball, the present track runs up the former, constructed on the sideling and sometimes in the creek bed. Where on the sideling it is very dangerous to ride over, one false step or stumble would send horse and man to destruction. 10

The result of the miners' petition and advocacy from the county overseer was the re-routing and upgrading of the section of track between the Brunner to Moonlight Road (main road to Blackball township) and the beginning of the 1881 Blackball Creek track at the head of Coal Creek. The work was completed in 1889. 11

Also during 1889 the first quartz mine claim was registered in the area around 1 km from Smoke-ho Creek at what would become the Minerva Mine. A stamper battery (ex-William Tell Mine, Mt Greenland, Ross) began crushing at the Minerva Gold Mining Co's machine site three years later in 1892.¹²

In 1891 miners based at Blackball Creek Forks petitioned the Grey County Council yet again for further track development work. The 1881 track gave access to Clarke Creek with either the riverbed (for pack horses) or an old water race (foot access) the only means of reaching the upper diggings at Blackball Forks. The opinion of the County Road Overseer concurred with the miners' view adding that current and future development in the upper Blackball Creek area was being hindered for want of decent track access. ¹³

The condition of the track was also a problem for the quartz miners — for instance, much of the gear required by the Minerva Gold Mining Co for their mining venture had "to be conveyed on men's backs" because the steepness of the track precluded the use of pack animals. Again, because of combined requests from miners in the area and the recommendations of the county engineer the idea of an extension of track gained traction. The first 15 chains (about 300m) of this track, along the eastern bank of Blackball Creek had been constructed previously by men from the Roaring Meg claim. In 1892, using monies obtained from a Mines Department subsidy, a route between Clarke Creek and Blackball Forks was surveyed, plans and specifications for a horse track were drawn up and tenders for the work were let. 15

^{10 1887} Grey County Road Overseer's Report to the County Council mentions this work. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.

Grey River Argus 28/6/1886; Feb 1888 Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika

Eastwood, D. 1982. A brief History of Gold Mining in the Moonlight and Blackball Creeks, Westland. NZFS, Hokitika.

^{13 1891} Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika; AIHR 1891

AJHR 1892 c-3:69 Department of Conservation West Coast Conservancy Archives, Hokitika; the section of track in question was the lower portion of the track near Blackball

^{15 1891} Grey County Road Overseer's Report to the County Council. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika; 1892 Grey County Road Overseer's Report to the County Council. Roads, tracks and

2.4. THE 'PAPAROA BRIDLE TRACK' - 1899

From 1896 there was a flurry of activity in quartz prospecting with companies registering claims along the Paparoa tops above Blackball Creek. Meanwhile, the first quartz mine in the area — the Minerva Gold Mining Co, succumbed to poor profits and was liquidated. Interest shown by companies taking up quartz claims spurred the county in to action and brought about a bridle track survey from the diggings at Blackball Forks up onto the tops. The only access to the tops was via a steep foot track from the Forks up a spur leading to Croesus Knob, or alternatively a rough foot track from Clarke Creek.

Prospects for quartz mining in area were deemed favourable and development of quartz claims began in earnest in 1897, with the sinking of the first winze at the Croesus Gold Mining Company's (Croesus GMC) site on the western flank of Croesus Knob. Carting gear to the mine in such an elevated locality posed problems for the company. While the county had surveyed a pack-track to the tops, the actual track was far from complete. To overcome these access issues, innovative engineering solutions were employed — aerial ropeway components (the means of transporting ore from the mine on Croesus Knob to the battery site below at the left hand branch of Blackball Creek) were specially designed in pieces small enough to be carried to the mine site on men's backs up the steep foot track to the tops that ascended a spur above the Forks. ¹⁷

Lack of good access also hindered developments at the newly restructured Roaring Meg Sluicing & Hydraulic-Power Company Limited (ex Minerva Sluicing Company) claim at Blackball Forks. The claim had always been plagued by persistent stoppages brought on by the rocky nature of the ground that they worked (see below). The solution, as reported by company director Gerald Perotti in 1898, entailed installing a hydraulic crane and lighting systems (to work longer hours to improve profitability), but again getting this heavy machinery to the site was an issue.

He described the situation and the company's solution to the problems:

The new company is pushing on with the work of erecting machinery with as much energy as circumstance allow, but they are retarded by the difficulty of carrying heavy machinery along an inferior pack-track. This difficulty is now obviated by the construction of a tram-way-line, done by private enterprise, and the machinery can now be carried to the claim without difficulty or risk. 18

travel box, Department of Conservation West Coast Conservancy Archives, Hokitika; *AJHR* 1890: C-3: 3,125, Department of Conservation West Coast Conservancy Archives, Hokitika.

Downey, J.F. 1928. Quartz Reefs of the West Coast Mining District, New Zealand. New Zealand Government Printer, Wellingotn. p52.

¹⁷ AJHR 1890: C-3: 90, Provisional 1 Mile series, S44 Greymouth, 1944 which both show the tracks in question.

¹⁸ AJHR 1898 C-3:113-114..

The tramway mentioned by Perotti was built on top of the 1892 section of County pack-track to the Blackball Forks.



Figure 3: Sluicing Claim at Roaring Meg Creek - workings would have been very similar at Blackball Forks

By 1899 the county bridle track from the Forks to the Paparoa tops was completed, a little late for the Croesus GMC who had to use alternative means to get machinery to their mine site. A side track up the left hand branch of Blackball Creek at the Forks from the county track to the Croesus Battery site was also completed at this time.

In 1899 access to the Croesus mine was described as follows:

The mine is accessible from Greymouth by railway to Ngahere Station, and thence by coach to Blackball Township, three miles distant. From Blackball the county bridle-track, with Mr. Perotti's tramway thereon, extends to the Roaring Meg Sluicing-claim, about eight miles distant. Here a steep rugged, unformed bush foot-track ascends the mountain, and was the only way up until the recent partial completion of the Paparoa bridle-track made borse traffic possible. This bridle-track begins near the Roaring Meg claim, and ascends the mountains with regular and fairly easy gradients. 19

Around 1901 the Garden Gully GMC was registered with a claim at Garden Gully at the head of Dugout Creek, a tributary of Roaring Meg Creek.

¹⁹ AJHR 1899 C-3 89-90, Department of Conservation West Coast Conservancy Archives, Hokitika.

From 1903 to 1904 mine developments included driving adits, preparing a machine site (for a battery) and construction of a side track from the country track to the mine.²⁰

In 1905 the Mount Paparoa GMC (reconstructed from the Croesus GMC in 1902) sold its lease and plant (battery, aerial tram, sawmill and blacksmith) to the Garden Gully GMC. All were rebuilt at the mine site at Dugout Creek.²¹

By 1910 the Garden Gully GMC was in liquidation, and was reformed with a name change to Croesus Mines Limited. This company in turn went into liquidation in 1915.

2.5 1930S DEPRESSION MINING

After a period of inactivity from 1915 to 1930, in 1931 a government subsidy scheme for gold prospecting was introduced — a 1930s depression 'make work' scheme. This was eagerly taken up by men from Blackball where work in the coal mines had been restricted through downsizing and a change to a tribute mining system. Rab Clarke, the secretary of the Blackball Coal Miners Union, was one who took work under the scheme becoming supervisor of 128 men in an area stretching from Blackball Creek to Ten Mile Creek.

It was during this time that repair work was done on the Croesus track and bridges were built over Smoke-ho Creek, Clarke Creek and Blackball Creek. The Minerva (1933-1935), the Croesus (1932), and Garden Gully (1936) claims were all worked under the auspices of the government-sponsored scheme. There was also active prospecting in Mulcare Creek (left hand branch Blackball Creek) and on the other side of the tops at the head of Ten Mile Creek. Workmen's camps were set up at Smoke-ho (in the vacinity of the modern carpark), Clarke Creek, Second Hotel site, Garden Gully and on Croesus Knob.²²

AJHR 1903 C-3:103, Department of Conservation West Coast Conservancy Archives, Hokitika; 1904 Report from the Mine Manager Garden Gully Gold Mining Company papers, Box 7, West Coast Historical Museum; AJHR 1904 C-3:60, Department of Conservation West Coast Conservancy Archives, Hokitika.

²¹ 1905 Garden Gully Gold Mining Company papers, Box 7, West Coast Historical Museum; AJHR 1905 C-3:48.

Richardson, Len 1995. Coal, Class and Community. Auckland University Press, Auckland, p. 257; Transcription of oral history interview with Jock Miekle in Eastwood, D. 1982. A brief History of Gold Mining in the Moonlight and Blackball Creeks, Westland. NZFS, Hokitika; Transcription of oral history interview with Les Neilson in Eastwood, D. 1982. A brief History of Gold Mining in the Moonlight and Blackball Creeks, Westland. NZFS, Hokitika.

2.6 LATER DEVELOPMENTS 1940 TO 1977

In 1940 the Mines Department employed Malcolm Wallace to recover the old Minerva battery. Using a tractor with a winch, the battery was hauled out in pieces along the track over two weeks, and it was then taken to



Figure 4: Group standing outside Haisty's Store with pack horses ready to take supplies up the Croesus during the 1930s depression.

the Mokihinui area in Buller.²³ During the 1951 Watersiders Strikes the Navy investigated the feasibility of exploiting coal reserves in the area. As part of this they widened the road up to what is now Smoke-ho car park. It is a possibility that the modification of the first section of the Croesus track dates from this time. The mine however did not eventuate.

In the 1970s the area below Smoke-ho was actively logged by the sawmill attached to the State Coal Mine at Roa. 24

From 1975 to 1977 the New Zealand Forest Service upgraded sections of the Croesus track. The extent was confined to "cutting windfalls, clearing and disposing of regenerating trees and shrubs from the track crown, clearing out water tables, and rebenching where slips had occurred" and the construction of three wire suspension bridges. ²⁵

Oral history interview with Malcom Wallace by Les Wright 29/8/1986, Oral History Collection, Department of Conservation West Coast Conservancy Archives, Hokitika

²⁴ J. Staton personal comment.

Eastwood, D. 1982. A brief History of Gold Mining in the Moonlight and Blackball Creeks, Westland. NZFS, Hokitika p. 58; Watson, B.N. 1981, Recreational Development of Historic Areas in Westland Conservancy. Forest Information Management 16, April, New Zealand Forest Service, Wellington.

2.7 CROESUS TRACK CHRONOLOGY

November 1864

Gold first discovered in Blackball Creek

January Small alluvial gold rush takes place. Population peaks at ca 150

1878 Grey County Council instructed engineer to survey track to Blackball reefs and survey undertaken

Tenders called for Blackball Track — line goes up Coal Creek to the Clarke Creek/Blackball Creek junction, one mile from the diggings. Goods were packed from Clarke Creek on up to the Blackball Forks via the creek bed. Prior to this goods were packed from Grey River up Ford Creek to Coal Creek on pack horses, then on men's backs up Coal Creek then through the gorge to the upper reaches of the Blackball Creek diggings.

1881 Grey County Council completed construction of track to Clarke Creek. Track metalled. 1887 description as follows:

The track over which provisions are now packed from the Brunner and Moonlight Track to the foot of Smoko Hill was cut by Kinsella, storekeeper at the foot of Black Ball. It is (without exception) the roughest and most dangerous apology for a pack-track in this County. It follows the bed of Blackball Creek crossing and recrossing innumerable times, for the first 21/2 miles where Coal Creek joins it. For one and a half miles of this the Creek is simply a rock bound gorge. The bed is filled with large boulders, and is dangerous to travel, even in fine weather when the creek is low. In wet weather the creek is a roaring torrent and is impassable for man or beast. From the junction of Coal Creek with the Blackball, the present track runs up the former, constructed on the sideling and sometimes in the creek bed. Where on the sideling it is very dangerous to ride over, one false step or stumble would send borse and man to destruction.²⁶

County Council ordered line to be blazed from Barrytown to the Paparoa ${\sf tops}^{27}$

1884 Alluvial workings on creek beds and terraces — quartz reefs being prospected²⁸

Minerva Sluicing Company registered (later Roaring Meg Sluicing Co) — situated at the Forks — on the north bank of the left hand branch Blackball Creek

1886 Blazed Line. Barrytown to Moonlight and Blackball — track

^{26 1887} Grey County Road Overseer's Report to the County Council mentions this work. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.

^{27 1887} Grey County Road Overseer's Report to the County Council mentions this work. Roads, tracks and travel box, Department of Conservation West Coast Conservancy Archives, Hokitika.

²⁸ AJHR 1884 H-9:34, Department of Conservation West Coast Conservancy Archives, Hokitika.

blazed from Barrytown to tops with finger posts erected. Work still needed to cut line to the head of the Blackball and Moonlight.

1887 Blazed Line — Barrytown to Blackball and Moonlight tops

The track has been cleared about 10 feet wide from Barrytown to the top of Mount Davy, 3000 feet above the sea level and finger posts put in as far as the junction of the Moonlight and Blackball spurs. The snow coming on, I was forced to abandon the work for the winter, intend to get it finished early in the summer. The total length will be about 15 miles, and it is some of the roughest country ever travelled by man.²⁹

Miners petition the County Council to construct a track further up Blackball Creek to their diggings at the Forks.

Specifications and plans completed for the track to Blackball diggings.

Track to replace bad section of track between start of 1881 County track and the Brunner/Moonlight track. New track to 90.

...between Ford's Creek and Blackball Creek, near Kinsella's store, ascends the terrace there and runs up the right hand branch of Ford's Creek for some ... miles, and thence over a saddle into the head of a tributary of Blackball Creek called Coal Creek. From this point to the diggings a distance of about 3 miles — a metalled track was constructed by this Council some 7 years since, so that the track now surveyed is a missing link required to complete the connection, and give communication to the Blackball diggings in all weather. The length of the proposed track is four miles 25 chains and the estimated cost from £900 to £1000. The country is very rough and broken and difficult and expensive for track making."

1889 Track to head of Coal Creek constructed Minerva Gold Mining Co registered

Minerva battery (purchased from the William Tell claim, Cedar Ck, Ross) transported to machine sites for erection.

Miners request track to be formed from Clarke Creek to the Forks. Only means of access is up creek bed or along an old water race. Creek bed often too rough for pack horses to traverse. O'Reilly and party from Roaring Meg Claim expended £5 on forming track for 15 chains along the east bank 'where the roughness of the creek bed prevented the horses going any further up it'

County Road Overseer recommends working with this track to open up access.

²⁹ July 1887 Grey County Road Overseer's Report to the County Council, Department of Conservation West Coast Conservancy Archives, Hokitika

	Minerva Gold Mining Co begin crushing ore. Mine development in the area hindered by broken nature of the ground (only accessible by pack horse). <i>AJHR</i> 1891				
1892	Section of track between Clarke Creek and the Forks surveyed, plans and specification drawn up and tenders let.				
1896	Track surveyed from head of Blackball Creek to the reefs on Paparoa Range				
	Tenders let and contract given for track work.				
1897	Croesus claim prospected, company registered and winze being sunk <i>AJHR</i> 1897 C-3a:15				
1898	Roaring Meg Co restructured — investment in plant (hydraulic crane and electric lights) necessitated the laying of tramway over the pack-track. <i>AJHR</i> 1898				
1899	Erection of Croesus Battery and aerial tram				
	Paparoa Bridle Track construction started — from Roaring Meg sluice claim (at the Forks) onto tops				
	Track from Croesus Battery to junction with County track constructed				
1901	Garden Gully GMC registered				
1903	Garden Gully GMC working on adits; battery site chosen and all water rights in the district acquired. AJHR C-3:103				
1904	Two men engaged in laying out a road from the Roaring Meg Water race to the Garden Gully Mine. AJHR C-3:60				
1905	Garden Gully GM — driving continuing as is improving mine ventilation, tram-way carrying capacity increased by making the gauge wider; preparations for erection battery continue (hoppers, water races etc) but company not yet decided on purchase of plant <i>AJHR</i> C-3:48				
1906	Croesus lease taken up by the Garden Gully GMC; preparations made to transfer Croesus Battery to Garden Gully (sawmilling				

plant shifted too?). *AJHR* c-3:51

Depression era mining — track and bridges repaired. Workmen's camp at Smoke-Ho.³⁰

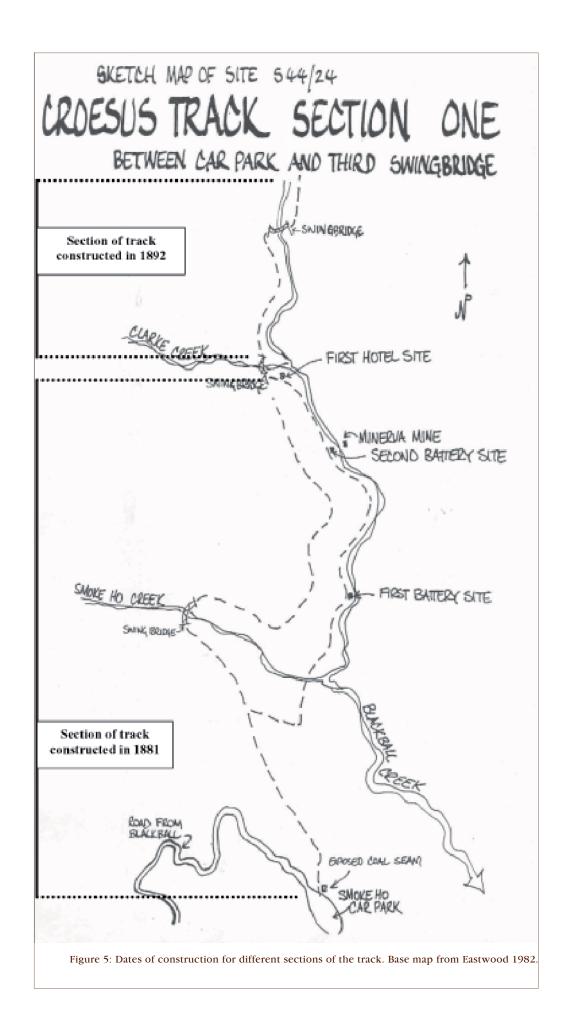
Mines Department employ Malcolm Wallace to recover old Minerva battery. Wallace had a WM Allis-Chalmers tractor with a winch. Battery hauled out in pieces along the track over 2 week period. Battery taken to the Mohikinui in Buller. 31

Ca 1970s Road to Smoke-ho used for logging (Roa State Mine)

1975-1977 NZFS upgrade parts of track and erect three new wire suspension bridges

³⁰ Eastwood 1982:58.

Oral history interview with Malcom Wallace by Les Wright 29/8/1986 Oral History Collection, Department of Conservation West Coast Conservancy Archives, Hokitika.



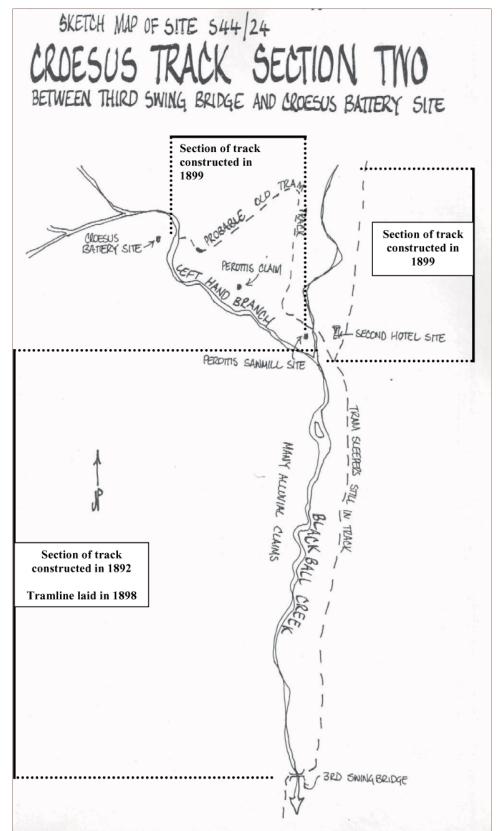


Figure 6: Dates of construction for different sections of the track. Base map from Eastwood 1982.

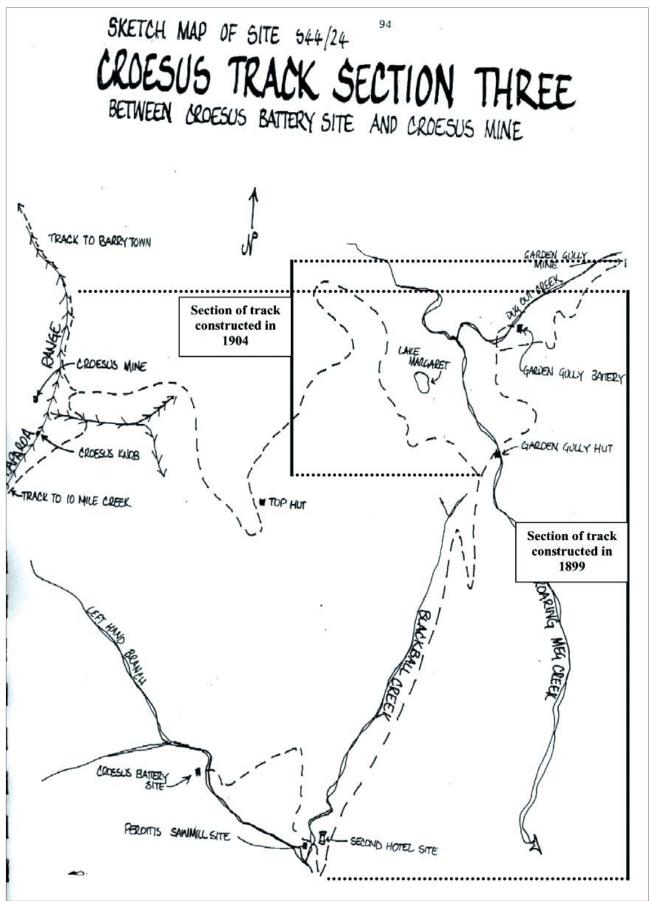


Figure 7: Dates of construction for different sections of the track. Base map from Eastwood 1982.

3.0 Historic Baseline Inspection Context and Methodology

The section of Croesus Track recorded for this report is from the Smokeho car park to the end of the bench formation around 2 km past Ces Clarke Hut. Various side tracks branch off the main track; tracks to the Croesus Battery site, the Minerva Mine site, to Garden Gully, and the Croesus Mine, were not recorded as part of this exercise. The route along the Paparoa tops to and down to Barrytown was also not recorded. All these other sections require separate recording and assessment.

The methodology used to record historic features was as follows:

- 1) Metre wheel was used on most of the track bar the top two kilometres above Ces Clarke Hut.
- 2) At the start of each section the metre wheel was zeroed (except between sections 2 and 3).
- 3) Individual features were recorded with a metre wheel reading and the length of some features was recorded with two readings.
- 4) Where possible a GPS reading was taken to provide a second location point where coverage allowed which was very patchy.
- 5) Notes were taken about feature condition.
- 6) Digital images were taken of some features as well as general shots of the track — time and memory space on the camera precluded taking images of all features.
- 7) At the end of each section notes were made on the general impression of the track condition and of the best features on that section of track. Some recommendations on future work were also made.

For recording purposes the track was broken down into 6 sections:

- Section 1 Smoke-ho car park to Smoke-ho Swing-bridge
- Section 2 Smoke-ho Swing-bridge to Clarke Creek Swing-bridge
- Section 3—Clarke Creek Swing-bridge to Second Hotel site, Blackball Forks
- Section 4 Second Hotel site Blackball Forks to junction with Garden Gully Track
- Section 5 Junction with Garden Gully Track to Ces Clarke Hut
- Section 6 Ces Clarke Hut to Paparoa tops

4.0 Recorded baseline features and recommendations

4.1 SECTION 1 — SMOKE-HO CAR PARK TO SMOKE-HO SWINGBRIDGE

Track type and construction date:

Cambered pack-track (1881)

Section length (approx.):

1038 metres

Recorded track features:

Block cuttings -1; sections of rock retaining -4; constructed fords -1; cut-outs -1

Associated features:

Bulldozer run-off to coal prospecting site; junction with track to Minerva battery

General description:

The first 400m of track has been heavily modified, possibly during coal prospecting by the Navy in the 1950s. Lack of drainage maintenance has caused this section to deteriorate from great walk/easy tramping standard to tramping tack standard. The original, unmodified 1881 pack-track formation starts just beyond the coal prospecting area (367m) and for the most part is in very good condition thanks to the large amount of natural rock present in the track surface and cuttings. A significant proportion of the benched profile has been cambered rather than crowned. The sections of the track that wind downhill, have side drains along most of their length and these should be reinstated where possible as lack of maintenance has contributed heavily to the deterioration of a large percentage of track surface.

This first section of track (beyond the modified initial stretch) has some good representative benched sections and overall is in good condition. Some of the side drains may have been a 1930s addition and will most likely be linked to sections where wooden cut-outs have been installed. There are several sections of dry-stone retaining, bolstering the outside edge of the bench, and these will be lost if the vegetation and trees growing through them are not removed.

There are six standards: Easy access short walk - easy walking up to an hour with no steps; Short walk - easy walking up to an hour with steps; Walking track - gentle walking for a few minutes to a day; Great Walk/Easy tramping track - comfortable multi-day tramping; Tramping tack - challenging day or multi-day tramping; Route - challenging overnight tramping.

Section for historic management

First 360m of track is in poor condition and heavily modified and there are no significant sections of this piece of track that warrant specific historic management. However, there are a few features that need attention, such as vegetation management along the top of stone retaining.

Work recommendations

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2) Any visitor upgrade work should keep to the original construction methods and specifications. Modification of side and block cutting walls must be avoided; confine upgrade work to restoration of the track surface.
- 3) Re-instate drainage.
- 4) Rock retaining walls to be preserved may require tree clearance from some sections to ensure stone retains integrity.
- 5) Wooden cut-outs to be preserved.



Figure 8: Cutting at the start of the track, Smoke-ho car park end.



Figure 9: Condition of the modified section at the start of the track – run off to coal prospecting site to the left of the image.



Figure 10: Start of the pack-track formation below the coal prospecting site



Figure 11: Wooden cut-out 1

4.2 SECTION 2 — SMOKE-HO CREEK TO CLARKE CREEK SWING-BRIDGE

Track description and construction date:

Cambered pack-track (1881)

Section length (approx.):

1256 metres

Recorded track features:

Block cuttings -1; sections of retaining -1; cut-outs -2; sections of embankment -1; bridge site -1

Associated features:

First hotel site; track from Minerva mine

General description

This is the best example of a cambered bench and should be maintained as such — this is probably how the track looked when it was first constructed. Cambered tracks do not usually survive well as they carry water across the track surface. They tend to degrade rapidly and need regular grading to maintain formation. The land formation and presence of large quantities of workable rock combine perfectly to construct low maintenance, cambered benched track. Here it seems that there has been a happy coincidence of good underlying geology, track surfacing material and track building skills. ³³

Also down hill sections only have periodic side drains on the up-slope edge of the track and, for the most part, these seem to have survived very well. As with the first section there is evidence that some side drains and cut outs were added in the 1930s but this seems to have been mainly where side creeks have moved, or ground contours have altered above the track. The last down hill section of track before the First Hotel site has suffered some deterioration because the original drainage has not been maintained. At Clarke Creek the track splits with a branch to the hotel site, and the pack-track proper continues in the re-growth.

Section for historic management:

The cambered track in section 2 from the Smoke-ho Creek Bridge to the top of the down hill section of track above the first Hotel Site (12m to 1062m).

Work recommendations:

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2) Make sure any visitor upgrade work keeps to the original construction methods and specifications.

Mark Nelson, 2006. Mark has traversed numerous North Island historic tracks and has noted no cambered track as good as this.

- 3) Avoid modification of side and block cutting walls confine work to restoration of track surface.
- 4) Drainage work will be required especially on downhill sections of track.
- 5) Rock retaining walls should be preserved. They may require tree clearance from some sections to ensure stone retaining integrity.
- 6) Wooden cut-outs should be preserved.



Figure 12: Section of half bench track



Figure 13: Block cutting 2



Figure 14: Wooden cut-out 3

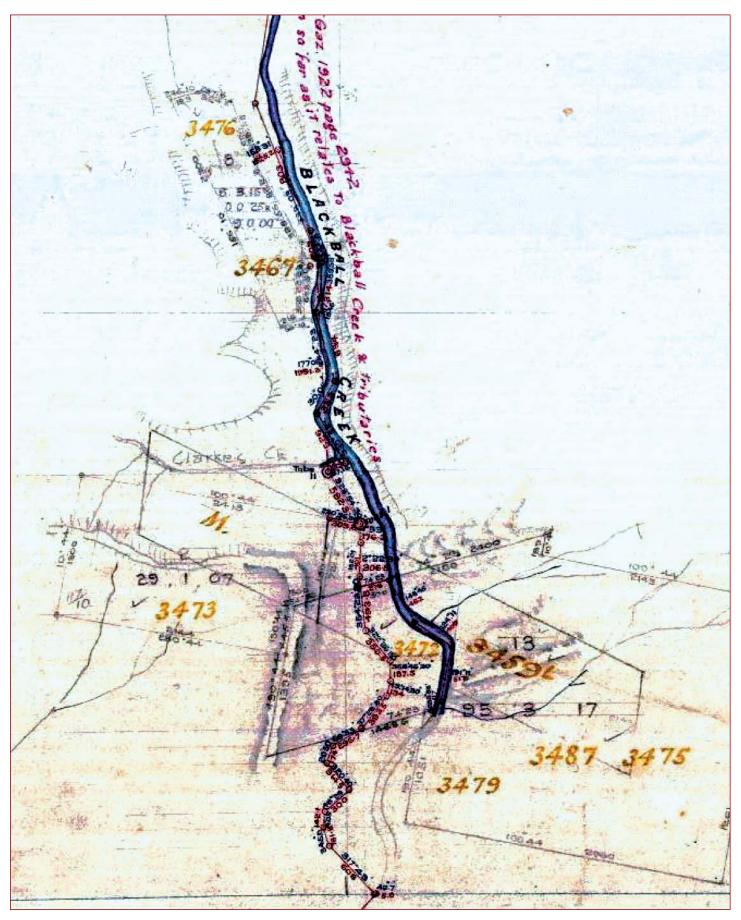


Figure 15: Detail of old mining claim plan (undated but probably prior to the construction of the 1892 portion of the track to the Forks), showing the line of the Croesus Track as it descends to Clarke Creek.

4.3 SECTION 3 — CLARKE CREEK SWING-BRIDGE TO SECOND HOTEL SITE, BLACKBALL FORKS

Track type and construction date:

Pack track (1892) modified with tramway formation (1898).

Section length (approx.):

1873 metres

Recorded track features:

Constructed fords -2; embankments -5; sections of retaining -1; borrow pits -1; bridge sites -2; sections where sleepers visible in track -3.

ASSOCIATED FEATURES:

Track to Croesus Battery site; sections of track up from Blackball Creek at the Blackball Swing-bridge site.

General description:

As with the first sections of this track it is generally pack-track width (6'6"). However, in this section the track did not use camber to deal with the problem of water drainage along and across the track, two alternative drainage styles were used: 1) along benched sections side drains and constructed fords were made and; 2) over boggy, low-lying sections through old alluvial workings, the construction of embankments and bridges raised the track surface.

Nine hundred metres from the start of this section is the beginning of the tramway built on top of pack-track by the Roaring Meg Company in 1898. Track construction methods have been influenced by the presence of the tramway, for example the track width extends to 2.6m. While there are only three areas where sleepers are still present in the track, the section modified for tram use extends from the point mentioned above to the Forks (a distance of around one kilometre) and probably extends along the side branch track to the Croesus Battery site.

This section of track has numerous individual features that could be preserved, however one part stands out not only because it is a good representative of benched pack track, but also because it passes good examples of small alluvial gold workings adjacent to the track (see below). Other parts are badly deteriorated.

Section for historic management:

Section beyond Blackball swing-bridge (1704m to 2085m)

Work recommendations

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2) Investigate conservation options for tramway sleepers in track surface.

- 3) Manage features on bench section beyond Blackball Swing-bridge (1704m to 2085m) this is a good representative section for active management (clear drains, clear vegetation etc).
- 4) Manage vegetation.



Figure 16: Embankment 2

Figure 17: Tramway sleepers in Track



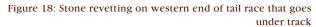




Figure 19: Example of alluvial sluice face adjacent to track.

4.4 SECTION 4 — SECOND HOTEL SITE BLACKBALL FORKS TO GARDEN GULLY TRACK JUNCTION

Track type and construction date:

Pack track (1899).

Section length (approx.):

2822 metres

Recorded track features:

Sections of embankment -1; block cutting -5; stone cut-outs -18; borrow pits -11; constructed fords -4; horse landings -3; sections of retaining -1

Associated features:

Roaring Meg water race (goes under the track at 2779m), track to Garden Gully

General description:

Track is constructed to pack-track standard. Outstanding aspects of this section are good examples of embankment, zig-zag track, benched track, various drainage techniques and cuttings. There are some very good individual features worth preserving. The main interest however, is the zig-zag section which climbs the hill from 1293m to 2789m where the Roaring Meg water race is culverted under the track. The track associated with the zig-zag is in good condition apart from one major slump which would not take a large effort to fix. There are horse landings at the end of each zig. These have grown over and should be reopened. There are also very good examples of water control at the start of the zig-zag. This is the best example of a pack-track anywhere on the West Coast (especially since the landings are intact). The zig-zag is overall in good condition.

Section for historic management:

The zig-zag section (965m to 2789m) 1824m

Work recommendations

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2 Clear out/reinstate side drains
- 3) Manage vegetation especially along sections of stone retaining to ensure ongoing preservation.
- 4) Manage zig-zag section of track, including horse landings (965m to 2796m) this is a good section for active management.



Figure 21: Stone cut-out 11



Figure 22: Horse landing 2

Figure 23: Stone retaining on track above horse landing 3

4.5 SECTION 5 — JUNCTION WITH GARDEN GULLY TRACK TO CES CLARKE HUT

Track description and construction date:

1899

Section length (approx.):

3321 metres

Recorded track features:

Borrow pits -26; stone cut-outs -22; horse landings -2; rock stock piles -5; stone culvert -1; bridge site -1; constructed ford -2; rock retaining -1

Associated features:

Track to Garden Gully.

General description:

Overall, this section of track has sustained the most damage of all the sections that make up the track on the Blackball side. However, some lower lengths of this part of the track are in reasonable condition. Two unique features — a stone culvert and a large well made cut-out (cut-out 23) — are worth preserving in their own right.

Section for historic management:

No sections for specific historic management. Maintain some specific features.

Work recommendations

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2) Clear out/reinstate side drains.
- 3) Manage vegetation.
- 4) Maintain Cut-out 23 and Stone Culvert 1.
- 5) Any visitor upgrade work must keep to the original construction methods and specifications.

Figure 24: Stone cut-out 23 Figure 25: Another view of stone cut-out 23

4.6 SECTION 6 — CES CLARKE HUT TO TOPS

Track description and construction date:

Pack track (1899)

Section length (approx.):

2000 metres

Recorded track features:

Constructed ford -2; stone cutouts -4; sections of retaining -6 (over 100m of rock retaining)

Associated features:

Side track to Croesus Mine

General description:

Considering the constant exposure to the elements (or perhaps because of it) this last piece of track on the Blackball side is the best over all and the entire section from the hut to where the bench ends is worth preserving. A well constructed, back filled, full width bench track that contains several hand laid stone cut-outs and long sections of stone retaining. The stone work is of a very high standard.

Section for historic management:

The top section from the Ces Clarke Hut to where the bench disappears (approx. two kilometres) — maintain this section to original specifications.

Work recommendations

- 1) Historic Places Trust authority will be required prior to undertaking some work on the track. Talk to Historic TSO regarding this.
- 2) Reinstate water damaged section to original specifications by creating drain and cut-out.
- 3) Generally clear drains and reinstate cut-outs
- 4) Maintain original features.



Figure 26: Stacked rock retaining 14



Figure 27: View of long section of rock retaining above Ces Clarke Hut, partially obscured by low vegetation.



Figure 28: Cut-out 35 - best example on the track



Figure 29: Stacked stone retaining below cut-out 35

5.0 Assessment of heritage values

5.1 HISTORICAL SIGNIFICANCE

The track has strong associations with both alluvial and quartz gold mining in the Blackball district. While the Blackball Creek diggings were never rich, the commitment made by the Grey County Council to improve access to the area by building the Croesus Track demonstrates the high value placed on gold fields by late 19th century society. Both alluvial and quartz gold mining brought people into the district and stimulated the local economy. Quartz mining was especially welcomed in mining districts where it added an air of permanency to the diggings.³⁴

The short lived nature of the initial alluvial gold rush at Blackball Creek and the subsequent modest number of miners and companies who persisted in the area is representative of many gold mining localities on the West Coast. The local quartz mining boom in the 1890s and 1900s was also short lived and not hugely profitable. The timing of this quartz boom was unfortunate, with the economy gripped by what would become to be known as 'the long depression' (1878-1895). Also at this time, other forms of mining such as gold dredging, were seen as more lucrative by investors.

By the 1930s gold mining had long been replaced by coal mining as the mainstay of the local economy; but then during the 1930s, changes in the local coal mining industry shifted the emphasis back to gold. This was mainly due to a government unemployment 'relief gold mining work scheme' which provided a secure form of employment for men in the district. Later attempts by the government to close down the scheme's operations in Blackball Creek and adjacent areas, were strongly opposed by local business owners who successfully petitioned the then Minister of Labour, Paddy Webb to retain the scheme.³⁶

While the actual weight of gold won was never great, there were many significant people associated with the Blackball Creek area: Edward Butler, the first Grey County Engineer; John Higgins, Butler's nephew and long serving successor as County Overseer; Harry Neilson, gold prospector and finder of the Croesus reef and coal seams at Roa; Gerald Perotti, a

³⁴ See reports of the Road Overseers - e.g. February 1888 Road Overseers report - "As proof that the Blackball is a go-ahead place I may state that while post offices are being closed in other outlying places, one has been opened at Blackball, within the past two months. There is no other part of the County with an equal population and the same prospect of permanency both as a gold field and a coal field that is so badly off in the way of communication as the Blackball."

³⁵ Gardener, W.J. 1992. A Colonial Economy. p 75. in Rice, G.W. (ed) The Oxford History of New Zealand. 2nd edition.

Employment Bureau file 11/5/71 7/1936-11/1937. Depression Mining box, Department of Conservation West Coast Conservancy Archives, Hokitika.

local business man and entrepreneur behind the Roaring Meg Sluicing Company, and later the Croesus Company and many other ventures in the Greymouth and Reefton areas; Rab Clarke, 1930s government gold scheme overseer and local trade unionist; Bert Fiddes old mining identity in the area in the 1930s who was one of the initial discoverers of the Fiddes Reward Reef in the Wilberforce Valley, eastern side of the Southern Alps.

5.2 PHYSICAL SIGNIFICANCE

Compared to other gold mining areas, establishing access to the Blackball Diggings was always problematic. There were continual calls to upgrade and extend the track, right from early in the initial gold rush days until the late 1890s. The lack of access was seen as exacerbating the hardships endured by miners in the area. Later complaints during the 1880s and 1890s centred around the track not being suitable to cart heavy machinery which spurred mining companies to act on their own accord on more than one occasion, e.g. Perotti and the Roaring Meg Sluicing Company building a tramline along the county track to transport heavy machinery, is a case in point. Many of the access problems can be put down to the rough nature of country, a point reinforced frequently in County Road Overseers reports.

While the capacity of the track never seemed to satisfy the miners who used it, the track remains one of the finest surviving examples of packtrack construction on the West Coast. The physical aspects of track provide good examples of two different types of pack-track building technique — the 1881 cambered benched section from Smoke-ho to Clarke Creek and the 1892 and 1899 benched sections with numerous fords, cut outs, graded zig-zag sections, extensive sections of stacked fill and retaining from Blackball Creek to the bench track end above Ces Clarke Hut. As is stands, the Croesus Track is one of the few pack- tracks on the West Coast that ascends to over 1000m above sea level (actually about 1200m).³⁷ The solutions the track builders used to overcome issues of grade and effective water run off are distinctively 'fit for purpose'. The fact that these features have weathered over 100 years of use, and more often neglect, stands as testament to an elevated degree craftsmanship, not only in building the features themselves but in choosing the most appropriate type of component required to deal with the issues at hand.

While not directly related to the track itself, the surrounding historic landscape represents broad and significant aspects of West Coast history. The track provides visitors with the opportunity to directly experience these things. The 19th century alluvial workings adjacent to the track, remains of 1930s relief work camps (Garden Gully Hut, Top Hut), and the impressive quartz mining remains at the Garden Gully Battery site are examples.

The only other track to do so is Kirwin's Pack Track, near Reefton.

5.3 CULTURAL SIGNIFICANCE

The track is well used for tramping, running and mountain biking. More groups are making use of it as a venue for extreme sports and endurance events, e.g. Nelson striders and their event the 'Croesus Crossing'. Mountain biking tour groups are making the track a stop on their guided tours. Local school groups regularly use the track and Ces Clarke Hut. The local Blackball community hold the track in high esteem.³⁸

5.4 SUMMARY OF SIGNIFICANCE

The Croesus Track is a nationally important pack-track with unique physical and fabric values. From the information gathered in the course of the historic baseline inspection it is clear that there are significant historic features representing different 19th century track building techniques still remaining on site. The solutions the track builders used to overcome issues of grade and effective water run off are distinctively 'fit for purpose'; the fact that these features have weathered over 100 years of use and more often than not neglect, stands as testament to an elevated degree of craftsmanship, not only in building the features themselves, but in choosing the most appropriate type of component required to deal with the problem.

While the amount of gold won from the area was never large, the Blackball Creek diggings are representative of how 19th century society valued gold mining as a means of stimulating and stabilising the local economy. There are few sites on public conservation land on the West Coast where such well preserved remnants of the 1930s Depression relief work schemes are present. This coupled with easy access to 19th century alluvial workings provide an excellent opportunity for visitor appreciation. The track's cultural values are also significant, and many user groups and the local community value the track very highly.

T. Johnston pers. comm. 2005.

6.0 Threats

6.1 LOSS OF PURPOSE

Loss of purpose should not be an issue as long as the track is available for visitors as a means of access in the Blackball—Croesus area.

6.2 NATURAL

Natural processes can have significant impacts on the integrity of a track. For the most part natural processes (extreme weather events) exacerbate problems brought about by a lack of maintenance. If the track is to be retained this should be managed.

6.3 MANAGEMENT ACTIONS

Lack of planning or poor planning, including inappropriate track upgrade or maintenance work are a threat to the values of the track. Allowing inappropriate visitor use is also a threat.

6.4 INFORMATION LOSS

There is a body of knowledge about the Blackball—Moonlight area. Much of this was gathered by the New Zealand Forest Service in the late 1970s early 1980s. This includes some archival research and oral history interviews. There are other potential sources of information that would provide contextual information that should be consulted at some stage such as Rab Clarke's diaries, Grey County Council files and Public Works Department Files (the latter two sources held at History House in Greymouth).

7.0 Discussion and Recommendations

It is clear from the assessment above and the physical fabric recorded during the baseline inspection that the Croesus Track has considerable historic value, hence its actively managed status. There are five sections of the track recommended to be managed intensively for their historic values. The vision for the historic management of the track is to maintain its historic profile, as represented by these features. There is also visitor asset work planned for the near future to upgrade the track to BCC track service standards. It is imperative that the requirements of historic management and visitor management are integrated. There is also the need to ensure that visitor use is managed so that it is not impacting on historic values.

A discussion of these issues and some recommendations follow.

HISTORIC MANAGEMENT AND VISITOR ASSETS WORK

For historic purposes there are five sections of track that stand out as important examples of the track builders craft. These sections represent three different types of track building technique — benched and cambered (1881); benching, cuttings, embankments and tramway formation (1892); benching, cuttings, fords and cut-outs (1899).

The significant sections are:

- 1: A 1050m section (built 1881) the cambered track from the Smokeho Creek Bridge to the top of the down hill section of track above the first Hotel Site (see section 2 from 12m to 1062m).
- 2: A 381m section (built 1892) benched section beyond Blackball Swing-bridge (see section 3 1704m to 2085m).
- 3: A 84m section (built 1892) the section with tramway formation and sleepers (section 3 from 2196m to 2280m).
- 4: A 1824m section (built 1899) the zig-zag section (section 4 from 965m to 2789m).
- 5: A 2000m section (built 1899) the top section from the Ces Clarke Hut to where the bench disappears (all of section 5).

The specific historic work required for these is covered in this document in chapter four (4.1 to 4.6). The general thrust of this work focuses on the maintenance of the track's historic profile. This is the ultimate goal of historic active management of the track. With regards to the Croesus Track this means maintaining:



Figure 30: Rock retaining wall 1. Section one of the track showing sapling growth along the outer edge.

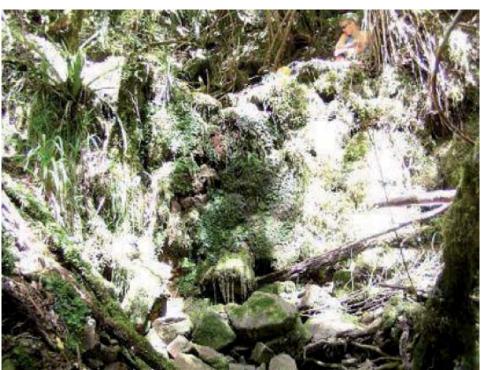


Figure 31:Constructed ford 3 showing vegetation encroachment.

- 1) Original bench profile cambered, benched, or built up with embankment
- 2) Original track width 6'6'' on the pack-track sections, 8'6' on the tramway sections.
- 3) Original track alignment
- 4) Original track grade
- 5) <u>Retention and maintenance of historic features</u> (side drains, stone cutouts, rock retaining).

Recommendations:

- ▶ Maintenance of the track to the general specifications outlined above should be mandatory on the historically significant sections of track with specific work carried out as per recommendations.
- ▶ The specifications for the maintenance of other parts of the track with less significant historic values should be to a standard that retains the historic feel of the track and meets visitor track service standards. An outline of the agreed standards should be prepared to guide ongoing joint historic and visitor assets management.

The historic values of the track must be considered when planning or undertaking any visitor assets upgrade or maintenance work. The Programme Manager Historic should be consulted when planning visitor assets work on the track.

▶ Most parts of the track were constructed pre-1900 and Historic Places Trust authority to modify may be required. Consult TSO Historic who will provide guidance on this.

VEGETATION MANAGEMENT

The implementation of a vegetation management programme on the track is required. Areas of rock retaining, such as that in figure 29 (p.36), with young saplings growing on the outer edge of the track, pose an issue for ongoing historic preservation. Unrestricted growth of these trees will eventually lead to significant damage undermining the integrity of the track. The same can be stated for trees growing on the upslope edge of track. Other areas need to be cleared of vegetation for ongoing feature preservation, and the added benefit of enhanced visitor appreciation of historic track features (see figure 31). Conversely, there are other sections of the track where the retention of vegetation is paramount for adjacent slope stabilisation.

Recommendations:

▶ An integrated vegetation management work plan factoring in environmental, historic and visitor asset management considerations should be drawn up to guide the ongoing maintenance of the track and associated historic features.

VISITOR USE AND IMPACTS

The Croesus Track is listed in the draft West Coast Conservancy position paper on mountain biking as available for use by mountain bikers. There is the *potential* for mountain biking to have detrimental effects on historic features on the track, but to date there is no hard and fast evidence that mountain biking *is* causing negative effects.

Most international debate concerning the impact of mountain biking on tracks focuses almost exclusively on the physical impacts to tracks, be those impacts real or perceived. Reading a small amount of literature on the topic highlights the following facts:

- 1) Mountain biking impacts to a **typical** track surface are no more than the impact of trampers;³⁹
- 2) Most degradation on tracks occurs through a combination of environmental factors (geomorphology, rainfall intensity, slope gradient) that is exacerbated by, not usually caused by, visitor use;⁴⁰
- 3) Most studies deal with impacts to track surface and width. There are also a few studies looking at the impacts on natural values. There **no** studies that deal with impacts on historic values, specifically in this case historic track features, e.g. cut-outs running across the track.

A conversation with Gordon Cessford, who has written extensively about mountain bike use of DOC tracks, discussing the scope of impact studies and historic values confirms that here has been no specific work on the impact of mountain biking on historic features present on and across a track surface. He made the point that mountain biking (via wheel roll) could cause detrimental effects on *in situ* historic features (like those present on the Croesus) while trampers had potentially less impact on such features as they would step over them.⁴¹

Recommendations:

- ▶ Monitoring a representative sample of historic features with regards to ongoing visitor use should be carried out with a view to determining what impact visitor use is having.
- ▶ Formalise a position on appropriate visitor use of the track as an outcome of the monitoring mentioned above.
- ▶ Use the opportunity to engage with concessionaire groups and provide user group education in order to encourage 'mindful' visitor use of the track thus lessening negative impacts on historic values.
- ▶ Increase awareness of the historic values of the track by placing interpretation (a hut book for instance) in visitor huts, panels on the track, using the web site, or enhancing existing visitor information.

Cessford, Gordon R. 1995. Off-Road Impacts of Mountain Bikes: a review and discussion. Science and Research series no.92. Department of Conservation, Wellington .pp 10, 29; see also Weir, Donald V. 2000. Impacts of Non-motorized Trail Use. Donald V. Weir and Associates. Edmonton, Alberta, Canada.

⁴⁰ Cessford 1995:6.

⁴¹ Cessford 2006 personal comment.

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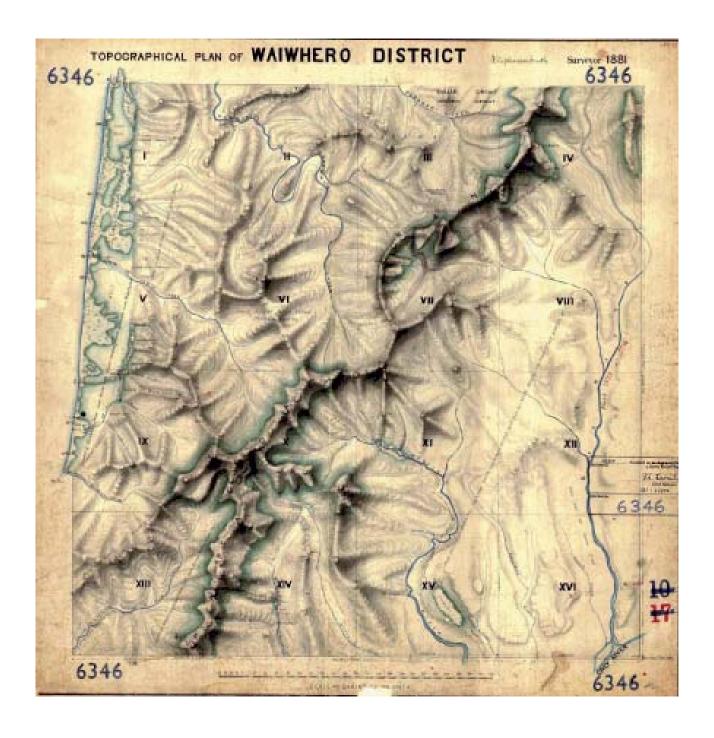
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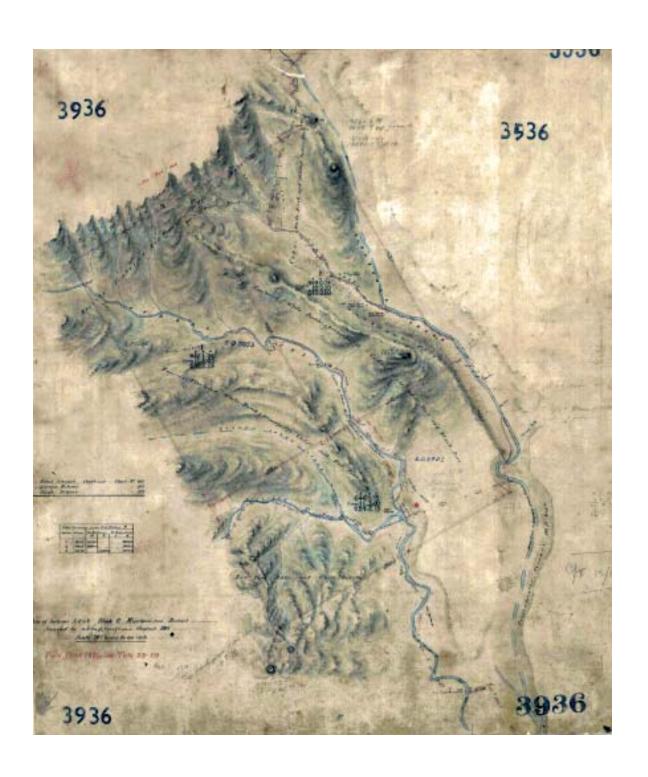
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Appendix 1: Copies of SO Plans





Appendix 2: S44 Greymouth (map)

