The presence of steams, waterbodies, and wetland/s (represented by a range of wetland types) are distributed in a mosaic-like pattern across the Plateau. Although a Schedule 2 Wetland designation covers almost the Denniston Plateau (*refer Map 18, page 52*), this only indicates the possible presence of a wetland that is either or likely to be ecologically significant and requires an assessment using ecological criteria to confirm the wetland status. The Wildland Consultant's report (2010) concluded that natural tarns were rare although artificial ponds and reservoirs were relatively common.

This is consistent with the Historical Vegetation and the most recent detailed vegetation survey undertaken in 2020 (*refer Map 16, page 50 and Map 17, page 51),* which shows that apart from Lake Brazil, wetland shallow tarn complexes do not commonly occur within the Denniston Plateau. Lake Brazil or Brazils Dam is the largest artificial reservoir (covering 2 ha) on the plateau *(refer Photograph 33).*

It was used for water storage for underground hydro mining projects and is now used for the current Escarpment Mine activity. Other artificial reservoirs occur in a broad cluster in the vicinity of Denniston settlement on the northern part of the plateau *(refer Photograph 35)*.

The most recent vegetation survey has been undertaken at a detailed site level rather than relying on aerial photography and results show a number of discrete tarns located on the Denniston Plateau (*refer Map 17, page 51).*

It is evident that water quality in some areas has been altered by acid rock drainage from old mine workings. This is demonstrated by the bright green algal growth, which indicates acidic toxicity and a reduced water quality downslope of, and in, the vicinity of the Sullivan West Mine (*refer Photograph 34).*

Photograph 30 *: Sandstone erosion pavement*

Photograph 31 *: Typical waterway on Denniston Plateau*

Photograph 32 *: Underwater view*

Photograph 33 *:Lake Brazil (reservoir)*

Photograph 34 *: Acid rock drainage from Sullivain Mine workings*

Photograph 35 *: Artificial reservoir at Denniston*

Photograph 36 *: Denniston Plateau looking South from Waimangaroa River Gorge*

Photograph 37 *: Denniston Plateau looking North from Cascade Creek*

Photograph 38 *: Denniston Plateau looking South-west to Mt Rochfort*

Land cover/Flora, Fauna and Habitats

The Denniston Plateau vegetation has been surveyed to varying degrees over the years. Many of the surveys were carried out over discrete sections of the plateau in relation to proposed development and often at a broad rather than a detailed scale with reference to the Land Cover Data Base 2 vegetation cover classes and satellite imagery-based mapping. Reports have identified some inconsistencies where vegetation cover classes are over or underestimated. Consequently, the overall vegetation data available for the Denniston Plateau is fragmented. However, with reference to the historical vegetation maps (*refer Map 16, Page 50*) and the more detailed surveys that have been undertaken[18], 20 major vegetation/habitat types are identified as occurring on the Denniston Plateau (*refer Map 17, Page 51 and Photographs 4*2 - 61).

However, in general terms the vegetation can be classified into three main types[19] :

i. Pakihi herbfield grassland, dominated by prostrate manuka, wire rush, turpentine scrub, coal measures tussock (*Chionochloa juncea* – endemic to Ngakawau ED) and *Dracophyllum politium*;

ii. Scrubland vegetation, again dominated by manuka, with emergent mountain beech, celery pine, southern rata, soft mingimingi and scattered mountain flax; and

iii. Mixed beech / podocarp forest including mountain, silver and red beech, yellow, silver and pink pine, kaikawaka, southern rata, kamahi, Westland quintinia and pokaka .

The following paragraphs are interpreted from the findings published in the Wildland Consultant's report (2010). Of the main vegetation types, the pakihi grassland, dominated by *Chionochloa juncea* with manuka, yellow silver pine, wire rush, etc., is the most widespread vegetation type on the Denniston Plateau. Southern rata and mountain beech are the main components of relatively low stature gully forest occurring above 500 masl and are extensive, particularly in the Whareatea River Gorge. Shrubland, with a varying density of manuka up to 1.5m high is also widespread on the margins of forest patches throughout the plateau. The remaining vegetation/habitat types are less common.

The two species (*Chionochloa juncea* and *Dracophyllum densum*) with national threat classification of At risk – Declining, were mapped on the plateau (*refer Map 19, Page 53*). *Chionochloa juncea* is widespread on non-forested sandstone pavement landforms, predominantly above 600 masl. This species abundance ranges from sparse to locally dense. *Dracophyllum densum* is similar to *D. politum* (which is widespread over the plateau) however *D. densum* was only recorded on the upper slopes of Mt Rochfort and outside the Denniston Plateau boundary.

Historically, rare ecosystems are associated with the sandstone pavement areas and wetland seepages, boulderfields of acidic rocks and tarns[20]. Of these only the sandstone erosion pavement is present in localised areas across the Denniston Plateau (r*efer Map 19, Page 53).* The boulderfields of acidic rocks are located on the lower slopes of Mt Rochfort, beyond the Denniston Plateau limit. Wetland seepages were acknowledged as possibly being too small to map from aerial photography. Tarns were noted as very rare within the study area although artificial ponds and reservoirs were found to be relatively common.

There are also obvious areas across the Denniston Plateau that have been disturbed by mining works and this is evident from the vegetation survey maps, which also show areas of cleared vegetation that is concentrated along roads and mine sites. Gorse and exotic grass species are found mainly confined to disturbed areas and alongside the extensive track network on the plateau. Other exotic species found on the plateau include *Juncus spp*, Yorkshire fog, montbretia, sweet vernal, browntop, catsear, and pine. The vegetation has been modified by historic fires, by cracking and subsidence associated with the former underground coal mining, by roads, tracks, and other earth disturbance, and by the establishment of exotic species (especially gorse and heath rush) on disturbed sites.

Evidence by experts states that the seemingly inhospitable environment provides significant habitat for assemblages of invertebrates, lizards, snails, and birds that reaches a quality necessary for significance in RMA terms[21]. Fauna of most conservation importance in the Denniston Plateau area are Great Spotted kiwi and the snail *Powelliphanta patrickensis*. Other fauna include western weka, fernbirds, kaka, and kereru. Threatened lizards likely to be present include the West Coast green gecko (seen on site and photographed by the author) and speckled skink (r*efer Photograph 40*). On site investigations of Denniston waterways revealed the presence of koura (freshwater crayfish) at relatively high densities (r*efer Photograph 41).*

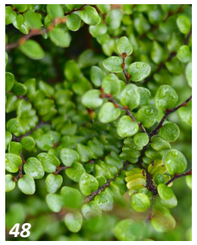
Some evidence of introduced animals, mainly deer and goats, has been found on the Denniston Plateau and possums, rats, mice and stoats are also present, mainly in forest habitats.

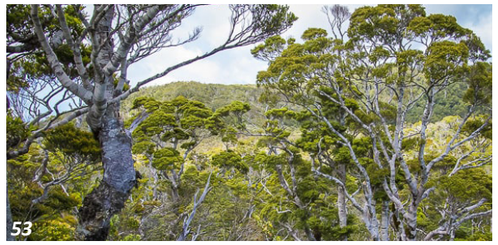
Photograph 39 *: Weka, Denniston Plateau*

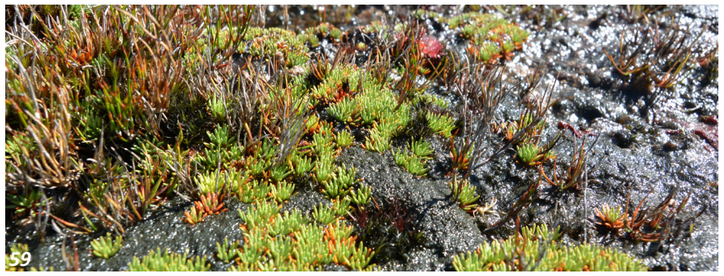
Photograph 40 *: West Coast green gecko, Denniston Plateau*

Photograph 41 *: Koura freshwater crayfish, Denniston Plateau*

[18] Wildlands Consultants Ltd. (2010) Mapping of Vegetation and Habitats on the Stockton and Denniston Plateaux. Contract Report 2334. Department of Conservation.
[19] Nichol, R., & Overmars, F. (2008). Vegetation and flora baseline survey, L&M Coal Ltd Escarpment Mine Project, Denniston Plateau. Resource and Environmental Management Limited.
[20] Wildlands Consultants Ltd. (2010) Mapping of Vegetation and Habitats on the Stockton and Denniston Plateaux. Contract Report 2334. Department of Conservation.
[21] West Coast Regional Council and Buller District Council v Buller Coal Limited, Decision No. [2013] NZEnvC 047 (Escarpment Mine). Escarpment Mine, para 40







Photograph 42 *: Chionochloa juncea*

Photograph 43 *: Dracophyllum densum*

Photograph 44 *: Dracophyllum uniflorum*

Photograph 45 *: Apodasmia similis*

Photograph 46 *: Dracophyllum densum*

Photograph 47 *: Southern rata*

Photograph 48 *: Mountain beech*

Photograph 49 *: Soft mingimingi*

Photograph 50 *: Manuka*

Photograph 51 *: Celery pine*

Photograph 52 *: Mountain flax*

Photograph 53 *: Mountain beech*

Photograph 54 *: Red beech*

Photograph 55 *: Pink / Bog Pine*

Photograph 56*: Yellow / Silver Pine*

Photograph 57 *: Westland quintinia*

Photograph 58 *: Kaimahi*

Photograph 59 *: Sundew Wetland*

Photograph 60 *: Sphagnum Moss*

Photograph 61 *: Typical vegetation mix*

Land Use

Denniston is the collective name for the historic settlement, mining and transport sites on the Denniston Plateau (r*efer Map 21, Page 55).* Early pioneer Julius von Haast was guided by Maori to the area, and he discovered a coal seam in the southern headwaters of the Waimangaroa River. Other pioneers are acknowledged by the naming of Burnetts Face after James Burnett (an English colliery engineer) and Denniston Plateau after Robert Blair Denniston who surveyed the resource in 1873. Mining began on the Plateau in 1878 at the Fisher or Banbury Mine followed by the Iron Bridge and Coalbrookdale mines. Later mines included the Whareatea Mine (part of the Coalbrookdale workings) and the nearby Sullivan Mine. The mines were typically underground and small in scale. Today slumped landforms indicate the presence of underground mining and collapsed tunnels (r*efer Map 21, Page 55).*

Initially, coal was transported by a complex system of rope roads, which brought coal across the plateau to the top of the Denniston Incline. Later, coal was transported by an aerial rope-way system. It is estimated that more than 30 million tonnes of premium quality coal were mined and transported to the railhead below before the incline, which closed in 1967 and was replaced by road access built in 1902. The Denniston Incline was one of New Zealand's biggest engineering projects at the time and was rated as the eighth wonder of the world. In 1995 Coalcorp (now Solid Energy) ceased mining at Denniston.

Open pit coal mining continues on the plateau at the Escarpment Mine at the southeastern corner of the plateau. The Escarpment Mine consists of an active open cast pit, gravel pits, stockpiles, a reservoir, lighting, relocatable prefabricated buildings, and other infrastructure. Coal is transported by trucks via the access road. The Cascade Mine is located outside but on the southeastern periphery of the Denniston Plateau and is still operating with access via the plateau.

Three main townships were originally established on the plateau - at Denniston, Burnetts Face and Coalbrookdale. At its peak in 1911, just over 1,400 people resided on the plateau[22]. The settlements were well appointed with hotels, post and telegraph office, general stores, a mission hall, hospital, schools, cottages and various sports facilities. The settlements at Burnetts Face and Coalbrookdale were deserted by 1954 and at Denniston many buildings were abandoned or removed from 1960 (refer Photograph 65 of th*e historic Burnetts Face and today showing the rapid recolonisation of vegetation over a previously highly modified part of the Denniston Plateau*).

Today Denniston village is reduced to the main street grid, building foundations, chimneys, water tanks, and the museum / information centre, which is in the former schoolhouse. Most of the former building sites are empty and covered in low scrub. Other remaining buildings are privately owned and occupied by about 10 permanent residents.

Beyond the Denniston settlement, metal roads crisscross the plateau. Of these Whareatea Road is accessible for 2WD vehicles to the Burnetts Face central parking area while the remaining roads including the Mt Rochfort Road, are accessible by 4WD vehicles only. There is a network of mountain bike trails and walking tracks across the plateau informed by signage and maps (r*efer* Map 22*,* Page 56).

Evidence of historic mining activities remains apparent across the Denniston Plateau with numerous artifacts often appearing derelict, left in situ, in various locations. The Denniston Incline, the Coalbrookdale mine fanhouse, Banbury Arch, various mining artefacts and relics, foundations of mining structures and dwellings, buildings (museum and information centre), and heritage walk with interpretation panels are popular tourist destinations. Disused underground mines, gravel pits, aerial ropeway and towers, etc., remain evident over the plateau (*refer Photographs 65- 79, Page 42).*

The historic mining relics are under constant threat from natural decay, regeneration of cleared areas, weed invasion and human impact. Conversely there is also the presence of building materials and debris that has accumulated in creeks and other areas across the plateau.

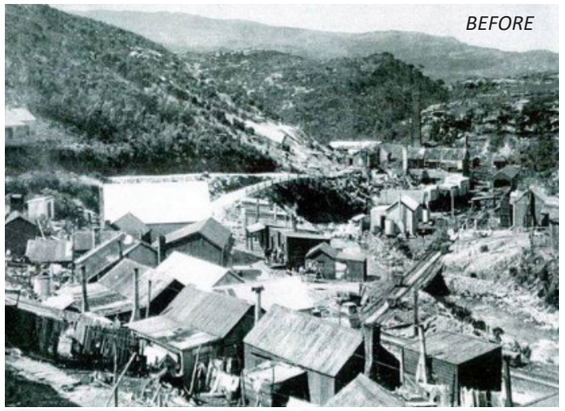
In addition to the roading network, other infrastructure is obviously present on the Deniston Plateau. Immediately outside the plateau is a telecommunications mast (*refer Photograph 66, Page 42).* A power line extends north-south across the plateau between the telecommunications mast on Mt Rochfort to Denniston and down to Waimangaroa. Other power lines run along the eastern edge of the plateau before heading northeast towards the Stockton Plateau along Cedar Creek Road and the Waimangaroa River. Two transmission lines run east – west across the plateau from a substation, located at Waimangaroa, across the Cedar Creek Saddle on the Mount William Range (refer Photographs 36-38, Page 38).

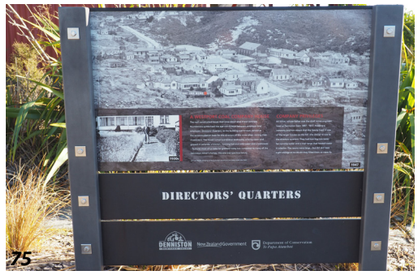
Photograph 62 *: Cascade Mine*

Photograph 63 *: Escarpment Mine*

Photograph 64 *: Denniston Coal Mining Historic Area*

[22] https://en.wikipedia.org/wiki/Denniston,_New_Zealand





Photograph 65 *: Burnetts Face Before and After.*

Photograph 66 *: Mt Rochfort telecommunications mast*

Photograph 67 *: Decaying Mining relics*

Photograph 68 *: Top of Denniston Incline*

Photograph 69 *: Mining relics*

Photograph 70 *: Heritage walk signage*

Photograph 71 *: Heritage walk signage*

Photograph 72 *: Decaying Mining relics*

Photograph 73 *: Decaying Mining relics*

Photograph 74 *: Denniston and Denniston Incline*

Photograph 75 *: Heritage walk signage*

Photograph 76 *: Mining Artefacts and Opening*

Photograph 77 *: Heritage walk*

Photograph 78*: Heritage walk*

Photograph 79 *: Heritage walk*

DENNISTON PLATEAU LANDSCAPE VALUES

The following evaluation is based on the seven point scale system from very low to very high[23] to identify the relevant values that are significant on the Denniston Plateau

Physical Values

The Denniston Plateau has very high biophysical values related to its geology and geomorphology as a faulted plateau of metamorphic and sedimentary rocks interspersed by very high-quality Tertiary coal measures.

A detailed assessment of the Brunner and Paparoa coal measures concluded that the Buller coal plateaux contain by far the largest occurrence of Brunner coal measures in New Zealand, with the greatest diversity of vegetation types on coal measures, and thus be recognised as a nationally outstanding landscape in its entirety, in an ecological sense.[24]

The New Zealand Geopreservation Inventory categorises New Zealand's landforms and geological features as either of regional, national or international importance for their scientific, aesthetic or educational values encompassing research, tourism and recreational values. The inventory lists the Denniston Plateau, Burnett Stream Porphyry and the Denniston Incline as being of regional scientific, aesthetic or educational value. The Denniston Plateau is identified as a barren rocky, weakly dissected, plateau and described as an attractive feature formed due to the existence of a near horizontal resistant rock layer. The inventory assesses the vulnerability of the plateau as **robust and not considered to be vulnerable to most human-related activities**.

The New Zealand Geopreservation Inventory lists the Burnett Stream Porphyry as of regional scientific, aesthetic or educational value being an easily accessible and fresh exposures of porphyry with abundant xenoliths. The inventory describes this feature as widespread exposures of Berlins Porphyry, fresh in a road cutting and stream bed where pylons cross new and old roads to Cascade Creek Coal Mine. Intrusive contact with Greenland Group is exposed and porphyry contains exceedingly abundant xenoliths of Greenland Group. The inventory assesses the vulnerability of the porphyry feature as being **vulnerable to significant damage by human related activities.**

The New Zealand Geopreservation Inventory lists the Denniston Incline and coal workings as of regional scientific, aesthetic or educational value as one of the earliest and most famous inclines in New Zealand however, the incline sits largely outside the Denniston Plateau boundary. Overall, the ranking given by the New Zealand Geopreservation Inventory to the various features associated with the Denniston Plateau in general attests to the degree of modification the plateau has undergone and as an attractive feature declares the aesthetic nature of the Denniston Plateau rock pavement.

Most of the Denniston Plateau is identified as stewardship land within the public conservation estate so that its natural and historic resources are protected at least until such time as its conservation values can be evaluated and the appropriate form of protection chosen. Stewardship land has the lowest legal status of protection of land managed by DOC and only stewardship land may be swapped or sold, but the management of stewardship land allows for particular commercial uses to occur.

The Denniston Plateau is within the Ngakawau Ecological District, which notes that mining and burning have modified plateau vegetation considerably and that deer and possums are present. Bird fauna is also noted as very depauperate.

The Regional Land and Water Plan identifies the whole of the Denniston Plateau as a Schedule 2 Wetland and as such either as or likely to be ecologically significant[25]. Before a final determination of significance, a Schedule 2 Wetland will require an assessment using the ecological criteria in Schedule 3 (meeting one or more of the criteria, namely ecological function, representativeness, rarity and distinctiveness). So, while there are wetland areas present on the plateau their significance is yet to be determined for the purposes of addressing s 6(a) of the RMA. Visitors to the plateau will not recognise the entire Plateau as a wetland per se, and although some of the reservoirs appear to be natural features they have been artificially created by dams. According to the Wildland Consultant report 2010, tarns are uncommon on the Denniston Plateau although wetlands may be noticeable after rain events due to the poor drainage and saturated soils across the plateau.

The Wildlands Consultants Report 2010 has surveyed the vegetation and habitats on the Denniston Plateau and mapped the extent and distribution of two nationally threatened species *Chionochloa juncea* and *Dracophyllum densum* and four historically rare ecosystems (*refer Map 16, Page 50).*

Technical ecology reports prepared for the Escarpment Mine have listed the presence of:

- Nationally endangered lichens (*Austropeltum glareosum, Pycnothelia caliginosa*),
- Nationally endangered bryophytes (*Isolembidium anomalum var anomalum* and *Neogrollea notabilis*) and nationally vulnerable bryophytes (*Saccogynidium decurvum* and *Telaranea inaequalis*) and 2 at risk bryophytes,
- Nationally critical vascular plants (*Sticherus tener*) and at-risk/ naturally uncommon *Euphrasia wettsteiniana*, red mistletoe (*Peraxilla tetrapetala*), *Pseudowintera traversii* and seven other at -risk vascular plants.

It is not clear exactly where these indigenous species are located on the Denniston Plateau. The Sticherus Ridge (sandstone bluffs) overhanging Barren Valley on the Denniston Plateau was noted as a rare landform within the plateau and is home to a collection of the above plants including the daisy, *Clemisia similis,* and therefore considered ecologically outstanding for this reason. Conditions relating to the Escarpment Mine consent has resulted in the transplanting of endangered plants and the removal of part of the ridge feature.

Technical reports for the Escarpment Mine agree that the plateau provides significant habitat for assemblages of invertebrates, lizards, snails and birds. The plateau contains populations of three lizard species of which the forest gecko and speckled skink are classified as at-risk while the West Coast green gecko is classified as nationally vulnerable. The native birds are mostly native and almost half are categorised as threatened or at risk. The carnivorous snail subspecies, *Powelliphanta patrickensis*, is found on the Denniston Plateau, however DOC has undertaken matters to conserve and enhance the local snail populations outside the plateau.

[23] New Zealand Institute of Landscape Architects. (May 2021) Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines. Final Draft subject to final editing, graphic design, illustrations, approved by Tuia Pito Ora / NZILA. Very low – Low – Moderate-low – Moderate – Moderate-high – High – Very high.
[24] Nichol, R., & Overmars, F. (2008). Vegetation and flora baseline survey, L&M Coal Ltd Escarpment Mine Project, Denniston Plateau. Resource and Environmental Management Limited.
[25] West Coast Regional Council. (2014) Regional Land and Water Plan. PLWRP 6.1, Schedule 1 and 2 Maps NGAP 051, page 157, PLWRP 6.1, page 24

Perceptual Values

The Denniston Plateau has very significant amenity values based on a perception of naturalness, including legibility, the appreciation of cultural heritage and human endeavor, transient qualities associated with exposure to extreme weather conditions, the recreational opportunities and the experience of panoramic views and vistas from the Plateau, all of which combine to evoke a strong sense of place.

High aesthetic values are based on an 'austere' aesthetic as a relevant model for the aesthetic appreciation of the Denniston Plateau[26] rather than the stereotypical sublime, picturesque and or beautiful aesthetic, albeit one with a high visual coherence. A similar austere aesthetic may be ascribed to the Tongariro National Park and parts of Central Otago. The dramatic landform, landcover and land uses over the plateau combine to convey a unique character, particularly in relation to the exposed sandstone pavement and low stature vegetation sequences, that while appearing natural is also obviously modified in places through past mining practices.

Intuitively and with the benefit of some scientific knowledge the Plateau is highly expressive of its formation (i.e., high legibility) and provides a stimulating and uniquely interesting landscape that is obviously different to the surrounding environment, evoking feelings of awe and a sense of wonder. In addition, the scenic panoramic outlook from the plateau to the coastline and mountain surrounds emphasizes the legibility of the landforms and conveys a diminutive sense of individual scale.

The Denniston Plateau displays an exposed open character, with aspects of wildness, and a temporal sense of isolation and solitude in some places and at certain times of the day or year, emphasised by the sense of abandonment and desolation as noted by Dr Steven. In some places on the plateau the landscape appears natural while in other places on the plateau there is obvious reference and testament to human endeavor and endurance in surviving within an environment of harsh extremes. Mining continues at the Escarpment Mine on the periphery of the Denniston Plateau and at the Sullivan Mine in proximity to the boundary conveying the sense of a working landscape with strong relationships to the historic heritage of the plateau.

The plateau is a very memorable and unique landscape that affords people a sense of place, and a means of orienting themselves within the natural world. The transient values are recognised as a distinctive part of the plateau, which is exposed to extremes of weather and offer a widely variable experience. Mr Craig[27] refers to the plateau when shrouded in mist as feeling '*bleak, desolate, mournful, threatening and forbidding*' while on fine days it will feel '*serene, peaceful and sublimely expansive*'. Mr Brown[28] refers to the Plateau as 'a *unique, harsh and in some respects a morbidly fascinating place*'. On-site investigations confirmed these descriptions (r*efer Photograph 85, Page 45*).

***Photograph 80** : Aerial Photograph looking North East across Denniston Plateau*

[26] Steven, Dr, M. L. (2012). Statement of Evidence on the Escarpment Mine Proposal. West Coast Environmental Network Inc. - An austere aesthetic is defined as having the following characteristics – sparse, expansive, gaunt, unadorned, severe in contrast to the sublime, picturesque and beautiful models of aesthetic appreciation.
[27] Craig, A. W. (2011). Statement of Evidence for the Escarpment Mine., paragraph 46
[28] Brown, S. K. (2012). Statement of Evidence - Review of assessment of landscape effects of the Escarpment Mine by A Craig, Outline Mokihinui / Buller Study and West Coast Regional Study. Buller District Council, paragraph 58

Associative Values

The following values are derived from associative factors and are widely recognised and documented. Of these, the historic and heritage associations with mining are very highly valued. Mining on the plateau opened up a nationally important industry supplying the global market. The Denniston Historic Area is recognised by the Heritage New Zealand as a place of national significance with a Category 1[29] listing. Historic Heritage as defined in Section 2 of the RMA includes surroundings associated with the natural and physical resources.This would take account of the compete network of historic mine sites across the plateau[30].

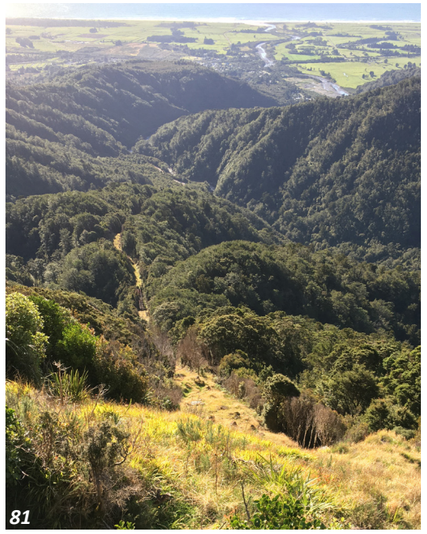
The Denniston Incline, the Coalbrookdale brick fan house, Banbury Arch (stonework by Cornish stonemasons, the reclining chimney, jig mechanism) in a tunnel near the Taipo Rope Road, an aerial rope way tower with buckets and running assembly, the Denniston village with remnant tennis courts, swimming baths and old bathhouse, and Burnetts Face are all components of the Historic Heritage Area listing and also recognised for their physical and technological significance (*refer Map 21, Page 55 and Photographs 81 - 89).* These physical relics contribute to the Denniston Plateau as a popular tourist destination aided by images, interpretation panels and the preservation of mining relics along annotated walkways.

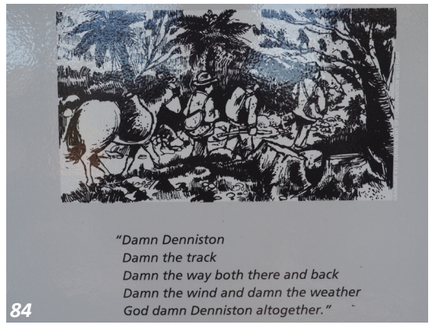
The well-known historical novel 'The Denniston Rose' by Jenny Pattrick, captures the harsh realities of life in the bleak 1880s coal mining settlement of Denniston and promotes interest and understanding of the cultural history of the plateau.

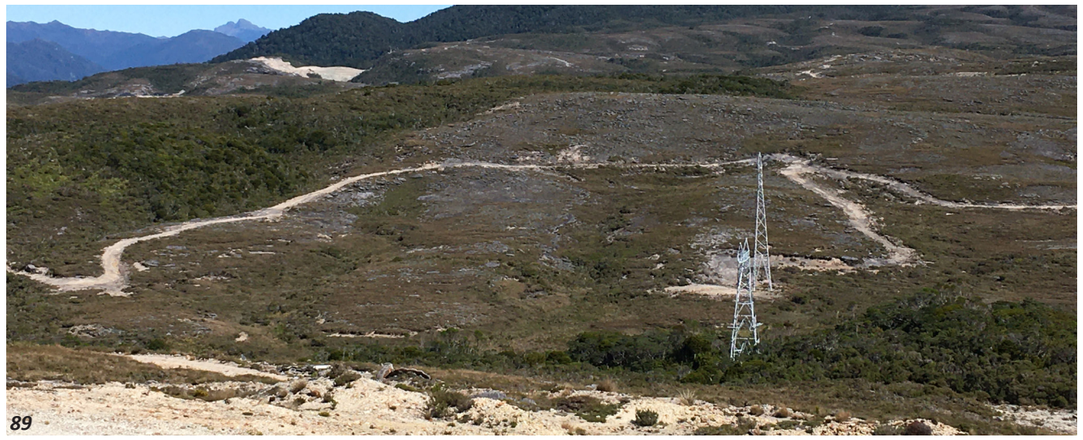
There are also very high recreational values afforded by the plateau. Easy access via the sealed road to the Denniston village leads to the carpark and the signposted and named network of tracks across the plateau (*refer Map 22, Page 56*).

Open pit mining persists on the southeast area of the plateau at the Escarpment Mine and continues the mining tradition and culture that is an important part of economic wellbeing of some of the West Coast community.

Overall, the Denniston Plateau has very high associative values relating to mining history and heritage that are widely recognised in the community (refer Denniston Rose, walks and interpretation panels) particularly with regard to the pioneering culture and technology that remain evident today and include the very high associative values relating to tourism and recreation opportunities afforded over the plateau.







Photograph 81 *: View down Denniston Incline today*

Photograph 82 *: Banbury Arches*

Photograph 83 *: Mountain biking on Denniston plateau*

Photograph 84 *: Damm Denniston Poem*

Photograph 85 *: Historical photo of Denniston settlement*

Photograph 86 *: Mountain biking on Denniston plateau*

Photograph 87 *: Mining relics*

Photograph 88 *: Historical photo of Denniston settlement*

Photograph 89 *: Landscape modifications*

[29] NZ Heritage List, Category 1 historic places are of special or outstanding historical or cultural significance or value. Category 2 historic places are of historical or cultural significance or values.
[30] Petchey, Southern Archaeology Limited, P. G. (2007). Archaeological Survey Report. Department of Conservation.

REVIEW OF LANDSCAPE REPORTS AND EVIDENCE RELATING TO DENNISTON PLATEAU

As part of the baseline landscape study a review was undertaken of the various reports, evidence and comments by other landscape architects (LAs) in relation to the effects of proposed mining on particularly the Denniston Plateau. Of relevance is that rather than a baseline study, these reports were focused on the effects of proposed mining. In some instances, these reports have been prepared individually on behalf of interested parties, private clients or councils for different purposes and therefore may contain a degree of unconscious bias.

In addition, the various LA's opinions are underpinned by slightly different methodologies. It is considered that all the LAs have wide-ranging experience within the profession and all opinions have merit. Of note is that there is now an updated and final draft of Te Tangi a te Manu Aotearoa Landscape Assessment Guidelines and this offers a comprehensive professional guide to future landscape assessment methodology.

The following is a brief precis of the findings of Mr Andrew Craig, Mr Stephen Brown, Dr Mike Steven, Mr Graham Densem and Mr Chris Glasson, all landscape architects who provided assessments or evidence with respect to Denniston Plateau.

Mr Andrew Craig[31] prepared an assessment of landscape effects for the proposed Escarpment Mine application and later prepared evidence on behalf of Buller Coal Limited both at the Council Hearing and Environment Court. He rated the Denniston Plateau as of Moderate-High naturalness. He concluded that the Plateau is not an ONL due to the proliferation of man-made items but notes that some parts of the Plateau are more natural than others, mostly relating to dramatic landforms, and water courses. He makes reference to the evidence of other LAs involved in the application to date and the lack of identification as an ONL in the Buller District or the West Coast Regional plans.

Mr Craig states that the Denniston Plateau is highly legible, will be discerned as a largely natural looking landscape that will also be appreciated as a significant industrial site for the past mining activity and Denniston settlement. Mr Craig also identifies the high scenic values, with transient conditions playing a significant role in informing the landscape character and amenity of the Plateau. And although not explicitly stated as such, his comments are derived from an aesthetic appreciation, i.e.,

> *When shrouded in mist, which is a common occurrence, the plateau will feel bleak, desolate, mournful, threatening and forbidding. The presence of mining remnants may exacerbate this as well. On sunny calm days it will feel serene, peaceful and sublimely expansive.*[31]

Mr Craig's evidence also recognised the historic heritage values attributed to the plateau and that the artefacts relating to the Plateau's coal mining history are a major attraction for visitors. No mention of the recreational attributes associated with the Denniston Plateau was identified.

Mr Stephen Brown[32] prepared an Assessment of Landscape and Natural Character across the Buller District in 2010-11 on behalf of Meridian Energy Limited to determine the relative values associated with the Mokihinui River in the context of the wider District and involved identification of Buller District ONLs and high natural character values of the coastal environment, wetland, rivers, lakes and their margins. This was expanded in the 2013 West Coast Region Landscape Study identifying Coastal Outstanding Natural Features / Landscapes for the combined West Coast Region and Buller, Grey and Westland Districts, as a technical background document to the Draft Regional Coastal Plan.

Mr Brown explained his methodology and approaches for these documents as based on the Biophysical, Perceptual / Aesthetic and Associative Factors and referenced Env Court decisions relating to determining thresholds of significance. He noted the limitations of his assessment as excluding tangata whenua values and historical associations. The resulting document was reviewed by Mr G Lister and Mr J Head. Mr Brown also undertook a review of Mr Craig's assessment of landscape effects in relation to the proposed Escarpment Mine on behalf of the Buller District Council.

On request Mr Brown re-examined the ONL boundaries in proximity to the Denniston Plateau and confirmed that the Denniston Plateau was not considered to be an ONL. In his evidence for the Escarpment Mine, Mr Brown comments that the Denniston Plateau possesses very significant amenity values and conveys a strong sense of place. Mr Brown also describes the breath taking views experienced from the Plateau. He describes the plateau as unique, harsh and in some respects morbidly fascinating with a unique identity forged by the marriage of its cultural/ historic heritage and a physical setting that is both spectacular, and at times bitter and inhospitable . This description accords with Dr M Steven's idea of an austere aesthetic and also reflects the historic heritage values of the plateau that are widely agreed on.

Mr Brown interprets the Denniston Plateau as a highly significant heritage / cultural landscape and a working landscape that is still in part mined. He concludes that the Plateau is not an ONL because it is not natural enough or too modified, albeit without explicitly stating how natural character was assessed.

Dr Mike Steven[33] provided evidence in relation to the Escarpment Mine on behalf of West Coast Environmental Network Inc. He assessed the Denniston Plateau as being between moderate and moderate-high naturalness, acknowledging the cultural modifications to the landform and vegetation cover of the plateau. Dr Stevens considered the natural elements, natural patterns and natural processes to be overwhelmingly dominant and therefore the Denniston Plateau is natural enough in its current state to meet the naturalness threshold.

In Dr Steven's opinion the geomorphological and ecological significance of the Denniston Plateau, summarised in the West Coast CMS and referred to in natural science expert evidence, establishes the physical / natural science values as meeting the outstanding threshold. Dr Steven outlines the values associated with aesthetic attributes as being strongly influenced by the remoteness and isolation, emphasised by the sense of abandonment and desolation, the evident legibility evoking a sense of wonder and awe, the visual coherence of landform and vegetation and the drama and scale of the scenic outlook combined with transient attributes conveyed by the climate and weather. In terms of associative factors Dr Steven acknowledges that the historic heritage values are widely recognised and documented and a key factor contributing to the significance of the Denniston Plateau.

Dr Steven is critical of the methodologies and conclusions of the other LAs involved, specifically in determining the aesthetic values and whether the plateau meets the naturalness threshold required for a s6(b) landscape. Despite the different approaches and lack of evaluation by others, Dr Steven recognises that the aesthetic and associative values identified by Mr Craig and Mr Brown are consistent with his own. Mr Brown and Mr Craig and Dr Steven all reached the same conclusion classing the Denniston Plateau landscape as Moderate-High naturalness.

[31] Craig, A. W. (2011). Statement of Evidence for the Escarpment Mine.
[32] Brown, S. K. (2012). Statement of Evidence - Review of assessment of landscape effects of the Escarpment Mine by A Craig, Outline Mokihinui / Buller Study and West Coast Regional Study. Buller District Council, paras 58 and 65
[33] Steven, Dr, M. L. (2012). Statement of Evidence on the Escarpment Mine Proposal. West Coast Environmental Network Inc., Para 43

Dr Steven asserts that the level of naturalness is sufficient to meet the naturalness threshold noting that natural elements, patterns, and importantly natural processes are overwhelmingly evident and dominate the Plateau despite the presence of some modifications as a consequence of historic settlement, mining and burning. He disagrees that the Plateau could be described as a working landscape and accepts that while this could apply to the Stockton Plateau, the mines on the Denniston Plateau were historic, location specific and underground. Dr Steven understands that the Plateau is managed largely for conservation and recreational purposes. Overall, Dr Steven concludes that the high natural science, aesthetic and associative factors including the cultural dimension and recreational amenity clearly identify the Denniston Plateau as outstanding.

Dr Steven assessed the Denniston Plateau as possessing high scientific and ecological values and very significant amenity values, evoking a strong sense of place. In terms of visual amenity, he asserts these may be associated with the natural science attributes – vegetation and landforms across the plateau, and the selective experience of the landscape view and vistas in a scenic sense. Other experiential aspects of amenity are recognised by Dr Steven as a sense of wildness and exposure to a harsh and severe environment.

Mr Graham Densem[34] undertook a review of the Landscape Assessment prepared by Mr Chris Glasson for the Escarpment Mine application at the request of the Buller District Council. In doing so he conducted a brief overview of landscape values throughout the Buller District to establish a comparative baseline against which to measure the Denniston Plateau.

He concluded 'on balance' that the Denniston Plateau was a Significant Natural Landscape or Amenity Landscape under s7 of the RMA, although he noted that his review didn't include natural science values – i.e., the geology and ecology of the coal measure or a cultural assessment of coal identity and heritage. Nevertheless, Mr Densem found the values to be 'out of the ordinary' compared to Buller District generally. While he determined that the Denniston Plateau was not an ONL, there are three features which stand out as ONF – the Coastal Scarp and Mt Rochfort as landmarks and the coal identity and heritage values relating to Denniston Village / Incline area and surrounding artefacts.

Mr Densem rated the following factors for their significance in comparison to his interpretation of Mr Glassons assessment of signficance:

Natural Values - moderate except in regard to coal measures and highly natural in smaller areas of the Plateau. Mr Densem disagrees with Mr Glasson and states that the natural values of the coal measures may be unique at a national level.

Legibility – high with clearly defined formative processes of sedimentary deposit, uplift and surface erosion that are clearly obvious and attractive. Mr Glasson regarded most of the Denniston Plateau as very legible (interpreted as high) but some of the Denniston Plateau as less legible (interpreted as moderate) because it is unseen from a distance. Mr Densem disagreed with Mr Glasson regarding the legibility of the Escarpment Mine site and commented that visibility is irrelevant to legibility.

Aesthetic Values - medium (taken to be moderate) with aspect of high memorability, and vividness and naturalness for specific features in particular the coastal scarp and various mining features, and various DOC reserves which create high naturalness. Mr Densems assessment was in general agreement with Mr Glasson's statement of aesthetic values.

Shared and Recognised Values – Moderately high or high because the coal formations and the mining culture of the plateau are recognised by the wider community. Also, a wide acceptance of heritage values.

Transient Values – Medium high – high relating to weather conditions, particularly mist on plateau in comparison to Mr Glasson's statement that the site has no special transient values – interpreted as medium or lower transient values.

Mr Chris Glasson[35] provided a Landscape Assessment for the Escarpment Mine application on behalf of Buller Coal Limited. AS part of his assessment Mr Glasson outlined the following values associated with the Denniston Plateau and the Escarpment Mine site.

Natural Values - overall moderate.

Legibility – high due to distinctive formation where it is seen but moderate where parts of the plateau are not seen.

Aesthetic - essentially moderate except that the specific dramatic backdrop of the plateau and mining heritage character possibly raise that to moderately high.

Shared and Recognised Values – Moderately high because the coal formations and the mining culture of the plateau are recognised by the wider community. Also, a wide acceptance of heritage values.

Transient Values – no special transient values

Mr Glasson points out that the geological formations on the Denniston Plateau are not unique but found elsewhere between Te Kuha and Stockton. Mr Glasson noted that although important geological and vegetation values exist on the Denniston Plateau the landscape is generally modified by mining and only small pockets of high natural value remain.

***Photograph 90** : Disturbed site*

***Photograph 91** : Historic culvert*

***Photograph 92** : Collapsed landform and rock fall at old mine opening*

[34] Densem, G. (2011). Landscape and visual assessment review - RC10/70. Buller District Council.
[35] Glasson, C. (2008). Landscape Assessment for the Escarpment Mine Project, Westport. Prepared for L&M Coal Ltd.

Overall, Mr Glasson's report concluded that the Denniston Plateau is a distinctive feature but not an Outstanding Landscape due to modification by industry meaning mining and settlements.

Mr James Bentley[36] provided a Landscape and natural Character Assessment for the Concessions Application for the Escarpment Mine on behalf of the Department of Conservation. Mr Bentley was asked to peer review the Addendum Landscape Assessment 2010 prepared by Mr Glasson for the application. Mr Bentley undertook an independent character assessment of the wider landscape as part of his review.

His assessment of the Denniston Plateau was that it retains moderate to high level of natural character with localised areas of low natural character around previous mine sites. Areas of high natural character appear to be associated with the deeper incised gullies such as the Whareatea River.

In determining whether the Denniston Plateau meets the threshold for an ONL Mr Bentley refers to the Pigeon Bay Factors. He considers that the Denniston Plateau holds high natural science values, overall, reasonably high aesthetic values associated with memorability enhanced by the historic heritage, moderately high legibility, moderate transient values, reasonably high for shared and recognised values associated with recreation, mining heritage and culture and very high for historical values.

Mr Bentley acknowledges difficulty in coming to a conclusion on whether the Denniston Plateau constitutes an ONF/L under Section 6(b).

Escarpment Decision

As noted in the Environment Court decision[37], Mr Craig, Mr Brown and Mr Stephen disagreed as to whether the Denniston Plateau constituted an ONL under s 6(b) RMA. The issue was whether the landscape retained sufficient 'naturalness' to quality for the first of the descriptors. Mr Brown and Mr Craig considered that the proliferation of man-made items was too great to meet the threshold of naturalness required for an ONL. Dr Steven's opinion was that there was a clear predominance of natural over cultural processes and because of that the landscape was natural enough to pass the first test for s 6(b) significance.

Messrs Craig, Brown and Stephen all broadly agreed that the Denniston landscape was of moderate high naturalness although Mr Craig and Mr Brown attributed this level to specific stream and wetland margins. The court determined that, overall, there were just too many human interventions to ignore, despite the high amenity values, very high scientific and ecological values (remaining matters in terms of s 6(a) and (c) of the Act and therefore the Denniston Plateau was not an ONL.

Review Summary

It is evident that there has been a robust process of review resulting in a general consensus between the various LAs who have assessed the Denniston Plateau. The issue was whether the landscape retained sufficient 'naturalness' to meet the naturalness threshold for the purposes of determining the Denniston Plateau as an ONL and therefore a S6 (a) landscape under the RMA. Of the six LAs who assessed the Denniston Plateau, only Dr Steven determined the plateau to be an ONL.

The overall opinion was that the Denniston Plateau did not meet the naturalness threshold to be considered an ONL. However, in terms of determining the significance of the values to meet the outstanding threshold the LAs assessed the values associated with the plateau using a similar methodology with slightly varying results. All LAs recognised the high natural science values (which depended on expert assessments by qualified practitioners in their fields) with reference to New Zealand Geopreservation Inventory, etc; the high aesthetic / perceptual values relating to memorability and transient qualities experienced on the plateau, legibility; and very high associative or community held values relating to historic mining heritage.

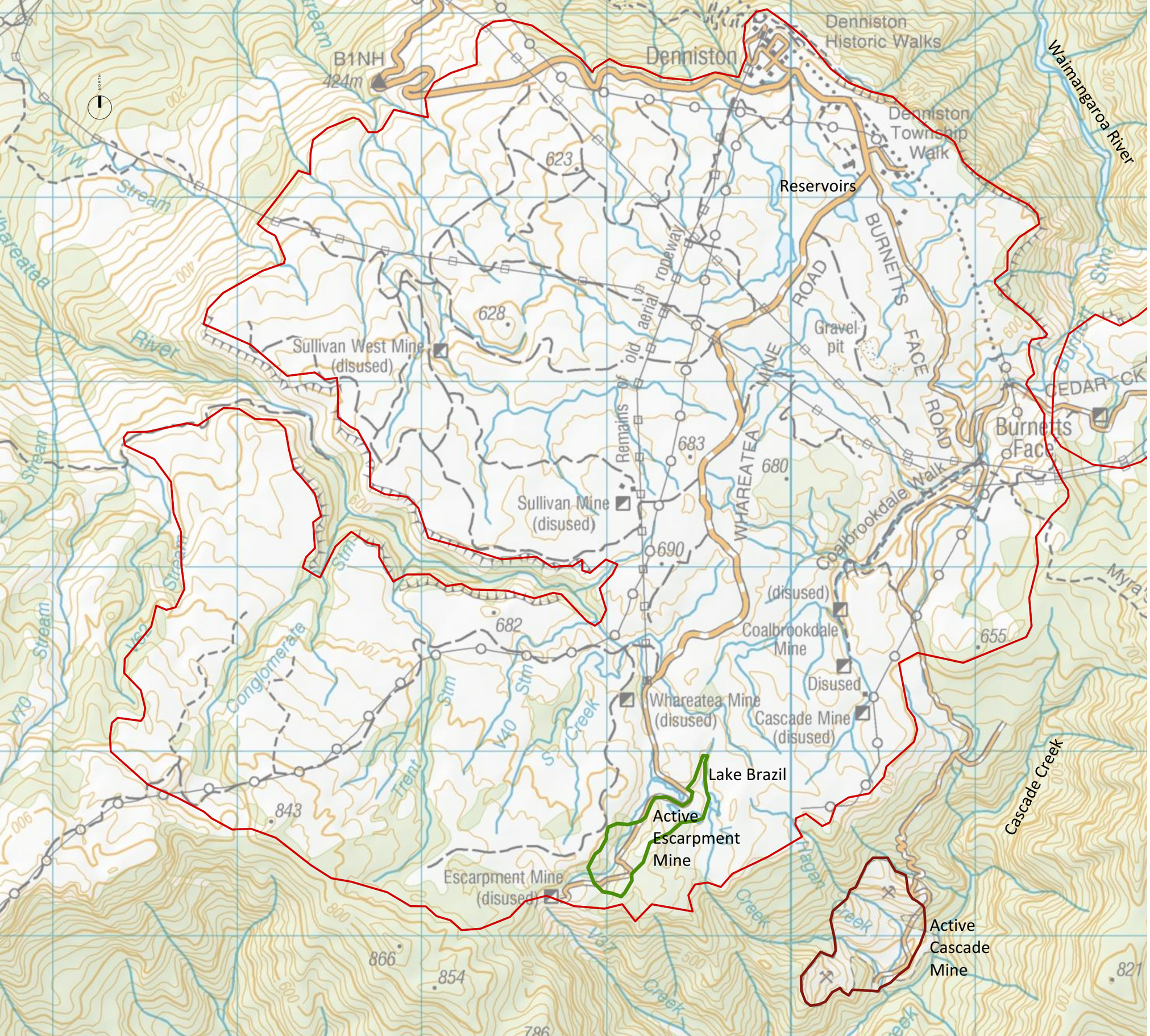
Photograph 93 : Acidic water drainage from Sullivan Mine workings

Photograph 94 : Sullivan Mine - disturbed site

Photograph 95 : Cascade Mine

Photograph 96 : Landscape modifications to Denniston Plateau.

[36] Bentley, J. (2011). Peer Review of Landscape and Natural Character Assessment prepared by C Glasson, Escarpment Mine Project, Westport. Department of Conservation.
[37] West Coast Regional Council and Buller District Council v Buller Coal Limited, Decision No. [2013] NZEnvC 047 (Escarpment Mine), Para 44



LEGEND

ROADS AND TRACKS [1]

- State highway
- Four lanes or more
- Two lanes (includes passing lanes)
- Narrow road
- Vehicle track
- Foot track
- Closed track (see warning note below) [2]
- Poled route, track connector
- Road surface: sealed; metalled; unmetalled
- Tunnel, tunnel under road
- Bridge; two lane, one lane
- Ford
- Gate, locked gate, cattlestop
- Footbridge, cableway, walkwire [3] (Walkwire)

MISCELLANEOUS

- Residential area
- Large buildings
- Isolated building
- Homestead, stockyard (Awapuni)
- Glasshouse or greenhouse
- Church, cemetery, grave
- Training track
- Golf course, helipad
- Historic Māori pā, redoubt, monument, plaque or signpost
- Reservoir covered, reservoir uncovered, tank
- Mast, tower, wind machine or wind turbine
- Shipwreck, lighthouse, beacon
- Fence (selection only)
- Pipeline above ground
- Pipeline underground
- Disused water race
- Power line on pylons (actual positions) [3]
- Power line on poles (away from roads) [3]
- Telephone line (away from roads) [3]
- Industrial cableway
- Mine; underground, opencast
- Buried gas pipeline

RELIEF FEATURES [4]

- Index contour (100)
- Intermediate contours
- Perennial snow and ice contours
- Supplementary contour
- Depression contours
- Shallow depression, small depression or shaft
- Beaconed trig station (with trig identification code) (A1B2)
- Elevation in metres (130m, 130)
- Cliff, terrace, slip
- Rock outcrops
- Stopbank, cutting
- Embankment or causeway
- Saddle, cave
- Alpine features
  - Moraine
  - Moraine wall
  - Scree
- Waterfall, rapids
- Cold spring, hot spring
- Fumarole, geothermal bore
- Watercourse, drain
- Canal; large, small
- Stream disappearing into ground

VEGETATION FEATURES

- Native forest

DENNISTON PLATEAU

ACTIVE ESCARPMENT MINE

ACTIVE CASCADE MINE

MAP 15

DENNISTON PLATEAU TOPOGRAPHY