

Internal Correspondence

Date: 3/08/2020

Ref:

To: South Westland Operations -M Macmillan

From: Terrestrial Science –J Marshall

Subject: Karanagarua – Sugar Loaf Quarry

Context

An application for an Access Arrangement over a 181ha Mining Permit Area between the Ohinetamatea River and the Karangarua River has been received by the Department. This report identifies the terrestrial biodiversity values of the area and likely impacts of the activity.

Biodiversity Values of the application Area

Representativeness; As part of some of the largest continuous areas of indigenous forest remaining in New Zealand the area applied for (181ha) represents the country's original natural heritage (Imboden and Cook 1977). At a very localized level (hectares), the area immediately around the old quarry site on the area defined as bedrock (fig 1) is less representative of the original values, as it has been modified by past use.

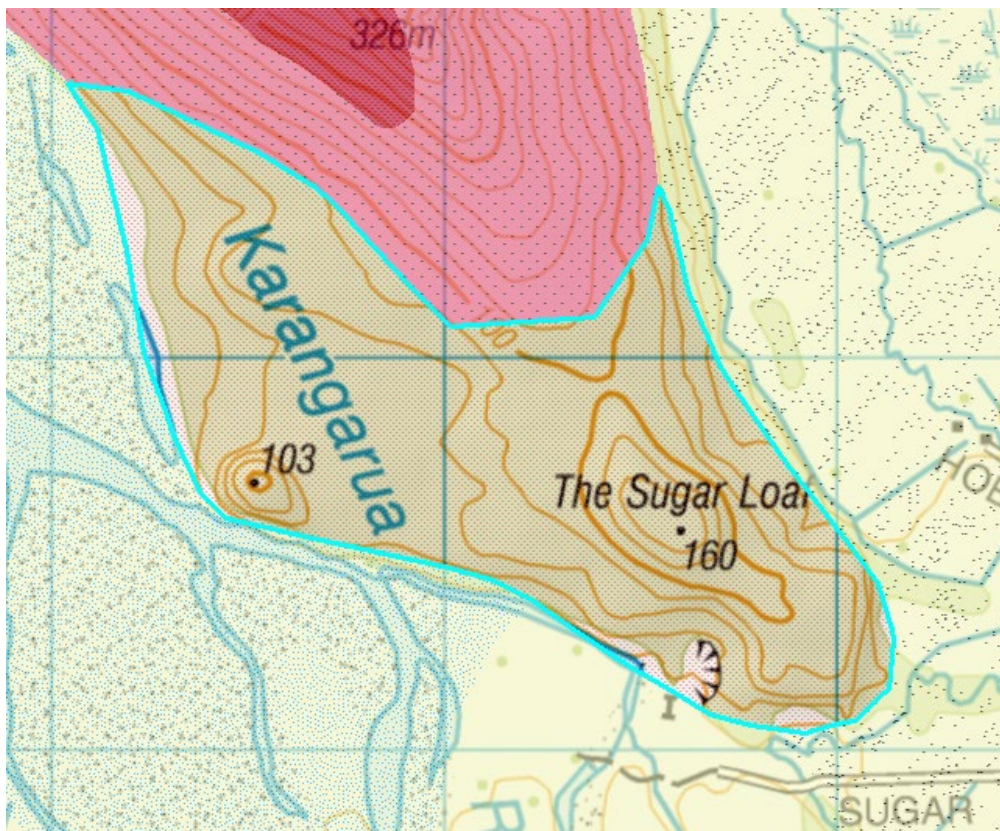


Figure 1. Blue outline - Ice-sculpted bedrock surface; Pinks – late Otiran moraine

Naturalness: The vegetation association and habitat of the 181ha are relatively natural, in that they likely support a few common exotic plant species and the ubiquitous exotic rodents, mustelids pest herbivores and Australian possums. The area immediately around the old quarry site is likely to be of lesser value as the vegetation likely contains a greater abundance of exotic plant species.

Diversity and Pattern

The 181ha is a high-quality example of potentially several of the vegetation associations expected within the Karangarua Ecological District. The vegetation of the moraine, and the vegetation of the lower, flat topography to the west of Sugarloaf are highly likely to be different, with the vegetation association on the flat terrane likely supporting large kahikatea forest; kahikatea forests are characteristic of this Ecological District. The area immediately around the old quarry site

Rarity and Special features

The lateral moraines are special features of the Ecological District. The lateral moraine to the north is a listed geopreservation site of national importance. The moraine under application has not been listed and there is a large amount of exposed (albeit vegetated) bedrock within the Ecological District. The 181ha Mining Permit area is of moderate value for rarity and special features.

Ecological Context: The 181ha is connected to a vast expanse of high-quality public conservation land to the north, west and south. The south eastern tip of the lateral moraine around the abandoned quarry is locally adjacent to modified agricultural land and roading infrastructure. The value of the connection with other conservation land is highest north west of the old quarry site, and of least value around the old quarry itself, at the junction of modified farmland.

Impacts of the activity

The activity of rock quarrying removes the natural landform and the vegetation of the site. From my understanding there is no recovering of the landform post mining, although with good planning and excellence in operational activity revegetation can be given a “leg up” through a good restoration programme which focuses on separation of any topsoil and organic material for restoration, and pest plant control. The applicant has proven experience in revegetation (M Ferguson pers. comm.).

The removal of vegetation and landform on a smaller proportion of the 181ha applied for, will result in less adverse effects on the high natural values of the area. Were the activity to proceed in a patch work fashion, the adverse effects of fragmentation would be added to the effect of vegetation disturbance and landform destruction; a strategic approach which seeks to consolidate any mining activity is likely to result in less adverse effects to the values described above.

Conclusion

The 181ha area under consideration is part of a nationally important tract of intact indigenous forest on unmodified landforms of high conservation value. The forests of South Westland are particularly significant because they contain a high proportion of lowland podocarp dominated forests, which are significant fauna habitat. The Karangarua State Forest, of which the area is part of, was classified as high value by Coker and Imboden (1982), the seminal forest classification system of the time (outstanding was the highest quality). The values have become more important over time, as modification continues elsewhere.

The values found on the application area are found elsewhere in the Ecological District and in the Ecological Region, but the area is part of a nationally significant ecological system and cannot be restored once the activity has occurred.

A smaller area of up to approximately 10 -15ha, at the very tip of the lateral moraine could be described as lower value because of its

- proximity to modified agricultural land
- proximity to roading infrastructure
- presence of old quarry site
- presence of modified vegetation (seral native and exotic).

Mining in this reduced, modified area is unlikely to significantly reduce the value of the wider area for nature conservation.