

**Submission on application by Meridian Energy for resource consents
for the Mokihinui River Hydroelectric Power Scheme**

To: West Coast Regional Council and Buller District Council, PO Box 66, Greymouth
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THE WEST COAST
REGIONAL COUNCIL

Application Numbers:

West Coast Regional Council:

Mokihinui River (Consents RC07150/1 – RC07150/6);

Inundation Area (Consents RC07150/7 – RC07150/8);

Staging Area (Consents RC07150/9 – RC07150/10);

Substation and Transmission (Consents RC07150/11 – RC07150/13);

Earthworks and Vegetation (Consents RC07150/14 – RC07150/19);

General Construction (Consents RC07150/20 – RC07150/23);

Access Roads, Walking Tracks and Recreational Activities (Consents RC07150/24 –
RC07150/26);

Buller District Council:

Land Use (Consents RC07/180-A – RC07/180-H)

This is a submission on an application from Meridian Energy for numerous permits and consents to construct, operate and maintain the proposed Mokihinui River Hydroelectric Power Scheme on the Mokihinui River gorge.

A. Introduction

The Royal Forest and Bird Protection Society Incorporated (“Forest and Bird”) has campaigned for 85 years for the protection of New Zealand’s native species and the habitats on which they depend. Around 38,000 New Zealanders in 55 branches nation wide belong to Forest and Bird, supporting the Society’s objectives of secure protection for native species, ecosystems, and landforms.

The constitutional purpose of Forest and Bird is to:

“To take all reasonable steps within the power of the Society for the preservation and protection of the indigenous flora and fauna and natural features of New Zealand, for the benefit of the public including future generations.”

The West Coast Branch of Forest and Bird has been in existence for a number of decades. The branch monitors resource consent applications and makes submissions on a variety

of issues that relate to the natural environment, including applications for water-related permits and other council matters. Members maintain an active interest in the natural geological and geomorphic features and indigenous biodiversity of the West Coast region.

This submission opposes the whole of the application. The reasons for this are set out below.

B. Overview of Submission

Forest and Bird opposes Meridian Energy's application for a hydro electricity scheme on the Mokihinui River for the following reasons:

The proposal is contrary to the purpose and principles (Part 2 matters) of the Resource Management Act 1991 ("RMA").

The proposal would cause negative environmental effects that cannot be avoided, remedied or mitigated.

In summary, the following adverse effects on the environment are more than minor:

- 1) Loss of the natural character of the river, including the river mouth and associated coastal environment
- 2) Significant alterations in the flow regime of the river resulting in possible adverse effects on the water habitat, including quality and temperature
- 3) Loss of hydrological connectivity
- 4) Long term negative impacts upon the river system, including upstream of the dam reservoir, within the foot print of the reservoir and downstream to the estuary and coast
- 5) Change in sediment patterns, including the loss of sediment transfer to the lower river and coast; the effect of sediment accumulation on the river gorge, and the change in capacity of the river to transfer sediment resulting in accumulation
- 6) Adverse effects on the landscape values of the catchment, including the river system and forest ecosystems
- 7) Loss of river habitat in the gorge, including for a number of threatened species
- 8) Negative effects on indigenous, threatened and endemic species
- 9) Loss of extensive forest associations in the gorge
- 10) Adverse effects on aquatic habitat downstream of the dam site
- 11) Negative effects on invertebrates
- 12) Adverse effects on aquatic ecosystems of tributaries in the gorge and lower river
- 13) Additional risks posed by the introduction of pest and weed species
- 14) Negative effects throughout the transmission line route, including effects on geodiversity, biodiversity and landscape
- 15) Loss of public access
- 16) Adverse effects on recreational and amenity values

- 17) Loss of historical and cultural associations
- 18) Increase in greenhouse gas emissions and loss of forest capacity as a carbon sink
- 19) Destruction of wilderness
- 20) Potential geological instability of the area, including seismic risk
- 21) Cumulative effects of all effects and overall loss of biodiversity
- 22) Inadequate attention to energy conservation principles
- 23) Failure to properly consider alternatives

The proposal is contrary to the objectives and policies of the West Coast Regional Policy Statement ("RPS"); the West Coast Regional Coastal, Land and Riverbed, and Water Plans; and the Buller District Plan.

The proposal fails to meet the provisions in relevant planning documents, including, but not limited to, the New Zealand Coastal Policy Statement, and the New Zealand Biodiversity Strategy.

Proposed mitigation is either ineffective or inadequate.

The proposal is inconsistent, deficient and fails to provide adequate information to make a proper assessment of environmental effects.

The proposal should not have been notified prior to completion of the Council's peer review. The public should have been presented with a proposal that met higher standards than the application as notified.

The positive effects on the environment in relation to energy are overstated as there are feasible alternatives to the substantial damage to the Mokihinui River environment and its value to the local, regional, national and international communities.

There is a clear indication that the scheme is in excess of the resource and life-supporting capacity of the river, its margins and surrounding environment.

Overall, the application does not promote the sustainable management of natural and physical resources and is inconsistent with the purpose and principles of the RMA.

C. Section 104D consideration

Because one of the key consents required to exercise the consent is a non-complying activity, then the Council/s must 'bundle' the consents together and require an assessment of the entire bundle of consents as 'non-complying'. This means that the consents must then be considered according to the requirements of section 104D of the RMA.

The Council/s may not grant consent if the effects of the proposal are more than minor or would otherwise be contrary to the relevant objectives and policies of the plan.

D. Assessment of Effects

(1) Natural character

The Mokihinui River has very high natural character, draining five mountain ranges totally encompassed within conservation estate including the extensive 100-acre and 1000-acre plateaux. The Mokihinui borders Kahurangi National Park for a significant portion of its catchment. The waters draining from these ranges gather together at the Mokihinui Forks (in the Mokihinui Forks Ecological Area) and make a determined charge for the sea through the earthquake shattered gorge. Only once the river emerges from the gorge is it bordered by anything other than conservation land. The waters are therefore almost entirely unaffected by human interference and are therefore in a pristine state. The only signs of human impact on the river are cultural heritage relics relating to activity in the late 1800s, e.g. remains of the Iron Bridge swept away in the earthquake-triggered slips and associated damming of the river in 1929.

Below the gorge the river is bordered by several farms, but significant amounts of indigenous vegetation remain, retaining a high natural character of the river and its margins.

Because of this isolation, the river continues to perform its functions as an ecosystem with very minimal disturbance – the only disturbance relating to some small scale activities within the river significantly below the river gorge. The river provides continuity of instream habitat, associated habitat functions relating to the margins, and several geomorphological functions, including the transfer of sediment and coastal replenishment.

The coastal margin retains high natural character. Like other West Coast rivers, the river mouth provides an interface of dynamic geomorphic activity between the river and the sea. This provides important habitats, a shifting coastline, and ongoing sediment deposition and loss through flooding and wave action.

The natural character of the river, tributaries, coast and their margins will be affected by the proposal. These changes are not avoided or remedied and cannot be mitigated.

(2) Alterations to flow regime

The Mokihinui hydro proposal seriously alters the flow regime of the river. The free flowing nature of the river is transferred into a still stratified deep lake; and the river below the dam is subject to frequent fluctuations in flow. The effects of the altered flow regime will cause considerable effects upon aquatic habitat.

(3) Loss of hydrological connectivity

This proposal places a first order dam on the river, immediately affecting the hydrological connectivity of the river and the habitat that this provides. The dam structure interrupts the flow of water and imposes an artificial feature that creates significant problems for migrating species, including longfinned eels. Proposals for a catch and carry system to assist with migration will result in a significant decline in the

species habitat and density. The dam structure also poses a significant artificial feature in a watercourse prized for recreation – halting connection within the water body for human travellers on the river.

(4) Long term negative effects on the river ecosystem

Although hydro is viewed as a renewable resource, its effect upon the environment is not truly renewable. The irreversible damage caused by the dam to the river system is very significant. The dam structure will cause a cumulative effect of long term decline on instream species, those on the riparian margins, and the ability of the river system to perform its functions, especially the carriage of sediment and coastal replenishment. Eventually it will result in the infilling of the reservoir and the inescapable permanent destruction of this environment.

(5) Change in sediment patterns

The alteration to sediment transfer is very significant and is given insufficient weight and attention in the proposal. The effects on sedimentation are not sufficiently understood, suffice to say that it is obvious that the river system carries a high level of sediment and that the effects of a dam on the river system will significantly alter these sedimentation patterns. It is anticipated that the dam will eventually fill with sediment, that the coast will be severely depleted of sediment – and that any remedial works to the coast will not then protect the natural character of the coast or estuary, or any of the associated margins. The in-filling of the dam reservoir will cause negative impacts upstream of the proposed reservoir top end – having a negative effect on the Mokihinui Forks Ecological Area, the landslip lake of Lake Perrine (currently nearly infilled itself), and may potentially cause issues with the build up of a huge delta that will effect the capacity of the river to flow – even through the reservoir.

(6) Adverse effects on landscape and natural features

The Mokihinui River gorge and other features affected by the proposed hydro development, hold outstanding natural landscapes. The inundation of the gorge will destroy these landscapes. This cannot be avoided, remedied or mitigated.

(7) Loss of habitat of indigenous flora and fauna

The Mokihinui River and the conservation land to be inundated by the proposed hydro scheme are significant habitats for indigenous flora and fauna, including for threatened species. The habitat is recognised in the reports commissioned by Meridian, as well as noted in Schedule 1A of the West Coast Regional Water Plan.

Although these are recognised, the reports commissioned by Meridian downplay the significance of the habitats and the effects on these species by using artificially high barriers to assessing significance. Their reports also display a lack of attention to detail in determining the full range of effect on species. None of the terrestrial ecology reports adequately dealt with the full range of terrestrial species that may be affected, e.g. invertebrates.

Several key species would lose significant habitat were this proposal to proceed. Around twenty endangered species live either in the river or in the gorge. Species like longfinned eel and blue duck (whio) would be seriously affected by this proposal. The river provides an important enclave for these species – notable for its absence of weeds and pests (including the threat of commercial eel fishing because of the nature of the gorge). The importance of this enclave is minimised in Meridian's reports. Although few weed and pest species are noted, the reports go on to conclude that the threatened species aren't safe here anyway because of the threats from introduced pests. This cannot be concluded from the information within the reports.

Furthermore, the transmission line route traverses areas of very high ecological value, including the Radcliffe Ecological Area and other recommended areas for protection on the coal plateaux. Many of these sites are of high value for *Powelliphanta* species, and the transmission lines, access roads, and construction of the sites would have a serious impact on these species.

The transmission line route also has very important vegetation sequences and plants throughout its length. These would be seriously affected by the proposal.

(8) Negative effects on indigenous, threatened and endemic species

This issue is linked to the one above, but relates not only to the loss of habitat, but other negative effects on important species, including killing of wildlife, loss of connectivity important for pathways, degradation in the ability of species to sustain current populations, and implications for specialist hybridised species (e.g. *Powelliphanta*).

Some of the species that may be affected are:

- Longfinned eel (tuna)
- Blue duck (whio)
- Shortjaw kokopu
- Six threatened taxa of *Powelliphanta* (5 subspecies of *P. lignaria* and *P. patrickensis*)
- Giant kokopu
- Lamprey
- Long-tailed bat
- Great spotted kiwi
- Black shag
- Bush falcon (karearea)
- Western weka
- Kereru
- SI kaka
- Kea
- Kakariki
- SI rifleman
- SI fernbird
- Other native freshwater fish species

[Note the species in this list are all threatened according to the Hitchmough classification, but other species are identified as affected, and other species may also be present but have not yet been identified]

We would like to make particular mention of the species that will be drowned by the inundation of the reservoir (including the various *Powelliphanta* subspecies present in the gorge; and other invertebrates that have not been identified by Meridian). Adult blue duck (whio) cannot be successfully relocated and there is a high likelihood that they will die. Other species will be crushed in the widening of roads and bulldozing associated with the construction site and transmission lines.

(9) Loss of forest associations in the gorge

The assessment of terrestrial flora is inadequate to properly assess significance. Although the reports give an outline of some of the forest associations, there is scant attention paid to the sequences and connectivity. There is also failure to recognise that forest types identified within statutory planning documents (e.g. RPS) will be significantly affected through inundation. West Coast forests are incredibly diverse in plant varieties and density. There can be no off-setting or adequate mitigation to replace the loss of the old growth forest associated with the dam.

The relevant planning documents, although mentioning the conservation estate, tend to focus on the protection of flora and fauna on private land. The planning documents therefore are not necessarily adequate to use as a guide to assess the full effects of significance on conservation land. [Note: this is relevant for other concerns, and not just restricted to forest associations]

(10) Adverse effects on downstream aquatic habitat

The flow regime proposed by Meridian, although maintaining average, minimum and maximum flows, will result in significant changes to flow variability. The potential effects of twice-daily flow fluctuations through hydro-peaking will have a significant impact on the downstream habitat. The varial zone (the margins of the river affected by the rising and lowering of water) are important aspects of the river for instream aquatic species. Rapid wetting and drying, and continual changes in the varial zone will seriously impact upon habitat, and reduce the available habitat for species significantly. It may also result in a loss of species within the downstream river. The river currently provides habitat for a high density of native fish species.

(11) Negative effects on invertebrates

The reports from Meridian show that the negative effects on invertebrates are significant. Invertebrates are an important food source for the dense fish populations that live in the Mokihinui River and for terrestrial species, e.g. long-tailed bat.

(12) Adverse effects on aquatic ecosystems of tributaries

The lower regions of tributaries in the gorge would be inundated by the dam. Numerous creeks and streams contribute to the Mokihinui river through the gorge. One significant water course is the Rough and Tumble Creek, a pristine waterway of very high natural

value and outstanding landscape, that also provides important habitat. It is known that blue duck (whio) reside in Rough and Tumble. It is also suspected that Rough & Tumble may provide refugee habitat from the main stem of the river if it is affected by flooding from the tributaries upstream of the Mokihinui Forks.

The connectivity between the streams in the lower river would be affected by the proposal due to the hydro-peaking fluctuation in flows. This would have an effect on spawning habitat.

(13) Introduction of pest and weed species

The construction of the dam would open up the possibility of invasion of pest and weed species. Any construction work done in the vicinity would require 'cleared earth' which would create space and corridors for weed species to invade the gorge. Currently the gorge has high values for its low, if any, presence of weed species. Although spraying could be done to reduce the impact of any weed species, this is a serious degradation of the local environment.

Other invasive weed species could become problematic within the river system, e.g. the stratified and anoxic lake environment could give rise to problem periphytons, e.g. phormidium (known to have taken hold in the lower Opihi River following construction of the Opuha Dam, South Canterbury).

Weeds could also proliferate on the transmission line route as a result of vegetation disturbance.

(14) Negative effects throughout transmission line route

The 28 kilometres of transmission line, as has already been noted, will have negative effects. The diversity of the route is quite dissimilar to the dam site, and the effects on wetland species, coal plateaux specialists, and plant associations are very high. In particular the line will affect the habitat of *Powelliphanta* species and traverse areas set aside to be protected as Ecological Areas under section 21 of the Conservation Act 1987. These require the areas to be managed to protect the purposes for which they are held. It will also affect high quality areas recommended for protection under the Recommended Areas for Protection identification programme.

In addition transmission lines will have a negative effect on the natural features along the transmission line route, including alongside the Charming Creek walkway, crossing over the Ngakawau gorge, and across the striking open landscapes of the coal plateaux.

(15) Loss of public access

Construction of the dam would restrict access to conservation land that is currently publicly accessible. The proposal for mitigation involving reconstruction of the walking track does not replicate the quality of public access (in terms of experience) that currently exists. The RMA provides that access should be maintained or enhanced. This proposal downgrades the public access and experience through the imposition of significant human modification to the area, and the reduction in diversity of visitor experience.

(16) Adverse effects on recreational and amenity values

The Mokihinui River, including the gorge, upstream of the dam reservoir, and downstream through to the coastal mouth, provides outstanding recreational opportunities. This includes botanising, tramping, rafting, kayaking, fishing, whitebaiting, swimming, canoeing, and passive recreation.

The amenity values, particularly in relation to the experience of wilderness, are very high. All of these activities would be affected to a significant degree.

Rafting and kayaking in the gorge would no longer be possible. Huge tracts of historical, cultural, and botanical interest would be submerged under the dam reservoir and the high wilderness connection would be lost. This cannot be replaced, avoided, remedied, or mitigated.

Downstream activities would be seriously affected by the flow fluctuation and potential downgrading of water quality.

The proposed replacement of the excitement and diversity of the gorge rapids with a flat lake surface is incredibly naïve and shows a lack of consideration for the important rafting and kayaking values currently present. Kayakers do not paddle 14 kilometres of flat lake, and it certainly couldn't be rafted as it is now. The terraced flats around Anderson's Creek, Tylers, and the old town of Seatonville (near Jones Creek) would all disappear. The opportunity to experience the depth and contours of this deeply incised and geologically interesting gorge would be seriously reduced.

The imposition of a significant structure in a hitherto wilderness area downgrades the recreational and amenity experience significantly.

Potential effects of noisy jet boats and other watercraft would diminish the experience of wilderness currently experienced in the gorge.

(17) Loss of historical and cultural associations

The Mokihinui River provides a contextual history of intense periods of activity arising from the pack route to Karamea, the gold fields, the geological history, and the long-standing track to the Mokihinui Forks.

The goldmining remnants at Andersons' Creek, Tylers, and Jones Creek/Seatonville, (amongst others) provide a connection with a time gone past and provide wonderment at the strength of human endurance in such a dynamic and challenging environment.

The pack route to Karamea, including the remnants of the Iron Bridge, provide reminders of the tenacity of early travellers. Old associated maps of the area provide context to the physical activity of walking these old routes and seeing the remnants of shack walls, hearths, and other mining relics amidst a healthy regenerating forest.

The devastation caused by the 1929 earthquake and the continued slip activity within the gorge, are reminders of milestone disasters in our nation.

The loss of this history is irreplaceable and any mitigation can only provide a partial sense of the context which currently exists. With inundation by the dam, there would be no way of experiencing the type of environment and conditions that were experienced back then. No river, no alluvial terraces, no iron bridge remnants, or hearths and goldmining equipment wheels still lying where they were once worked. Any attempts to preserve these on a higher marked track is like removing them to a museum. The context is instantly lost.

(18) Increase in greenhouse gas emissions and loss of forest capacity as a carbon sink

Meridian Energy makes significant mention of this hydro-electricity project as a renewable resource and a way of tackling climate change. The proposal does not mention the greenhouse gas emissions that would be caused by the flooding of around 300 hectares of vegetation, the subsequent decaying of the vegetation and the release of the associated gases from the reservoir (either through 'bubbling' to the surface, or through discharge at the turbines). Nor does it factor in the removal of these forests and the length of time it would take to regrow them to assist with the carbon sink.

Other sources of renewable energy (including other hydro-electricity generation proposals) do not cause greenhouse gas emissions. We believe these are relevant issues to consider under s104E of the RMA.

(19) Destruction of wilderness

The Mokihinui River provides a complete ecosystem that is largely dominated by the aspect of 'wilderness'. Although this provides very significant recreational and amenity value – it is also of intrinsic value to the ecosystem, and is an important factor in maintaining many of the natural character processes (including the transfer of sediment), significant habitats for threatened species (free from excessive human interruption), and self-maintaining systems of flushing to maintain water quality and the dynamic nature of the system.

Wilderness is a concept that is often overlooked as sustainable development is considered, yet it is wilderness that often drives at the psyche of individuals who, generally, are urban-bound. The protection of wilderness is an important concept for people to have retained in their communities (at national or local levels), as it provides for the social well-being of the community (section 5 matters). Knowledge that the Mokihinui River exists as a wilderness has meant that people from across the country and even from as far distant as Europe, have contacted our organisation to express support for this campaign. These people may never visit the wilderness of the Mokihinui Gorge, but their knowledge that it exists provides well-being. This can be likened to the Antarctic – a wilderness that few people will ever visit, but whose protection as wilderness is an internationally held value.

(20) Potential geological instability, including seismicity

The Mokihinui River system is within an area affected by the Alpine Fault, and other faults that are 'off-shoots' of the Alpine Fault. The devastation wrought by the 1929 earthquake, which dammed the river in 3 places, remains visible today. Big Slip Rapid, Lake Perrine, the shattered country of the upper gorge area, and even the huge slip that blocked the river at Welcome Bay, bear witness to the devastation caused.

We do not believe that the reports on geological instability and seismicity are sufficiently thorough in the face of the potential dangers that could ensue. Any structure must also take into account the implication of multiple earthquakes, as that is foreseeable in the lifetime of the proposed scheme.

We are also aware that there is the potential for large dams to trigger earthquakes. This has not been considered by Meridian Energy.

(21) Cumulative effects

The multitude of significant effects upon the Mokihinui River ecosystem, the surrounding environment, the communities that associate with the river, the historical associations and the heightened risks (sections 5, 6 and 7 matters), mean that the cumulative effects of this proposal are so significant that they must seriously outweigh any benefit to be gained through the promotion of hydro-electricity generation as renewable energy (section 7 matter), and a source of supply for the West Coast (section 5 matter). Conclusions must be reached that the cumulative effect of all of the Part 2 RMA matters give rise to a decision to decline the consents.

(22) Inadequate attention to energy conservation principles

Significant work could be done on addressing the failure of New Zealand consumers to adopt energy conservation principles. This requires not only community action, but government direction, and the support of the energy sector to shift the emphasis away from growth. The rate of growth in energy consumption promoted by Meridian in justifying their rationale for this dam is entirely unsustainable. It would require that schemes the size of the Mokihinui were built approximately every 6 months. The West Coast Regional Policy Statement notes the necessity for addressing energy conservation.

(23) Consideration of alternatives

The consideration of alternatives by Meridian does not seriously address a package of alternatives that could include a mixture of generation projects, energy conservation principles, and the more efficient use of current sources.

E. Planning Analysis

Aside from the statutory planning documents of the Regional Policy Statement, relevant Regional plans, and the Buller District Plan; other documents are also important.

(1) Draft West Coast Te Tai o Poutini Conservation Management Strategy ("CMS")

Hearings on this draft document have only recently concluded and the decisions have yet to be released by the Department.

We note that in the draft of this document important mention is made of the value of lowland forests, both in terms of representation on the West Coast, and also in terms of their relative importance in New Zealand (p52):

"Lowland forests

A large proportion of the total amount of lowland forest remaining in New Zealand today is protected within West Coast Te Tai o Poutini public conservation lands. In many other parts of the country there is virtually no lowland forest left to protect, especially on fertile coastal and alluvial sites.

The years of human settlement and land-clearance has resulted in the loss of about 70% of New Zealand's forest. Some specific forest types, particularly those in the lowlands, have suffered a much greater loss. In the case of kahikatea forest it is estimated that less than 2% now remains of what once existed nationally.

The West Coast Te Tai o Poutini retains most of New Zealand's unmodified and regenerating kahikatea forest and some of the best examples of dense rimu terrace forest. These forests are also significant food sources for a number of indigenous forest bird species. However, even on the West Coast Te Tai o Poutini some once common forest types, such as matai-tōtara forest, are now reduced to small and scattered remnants of their former range."

Specific mention is also made of key threatened, uncommon or endemic species in the Conservancy, including blue duck, kaka, and shortjawed kokopu, – all of which are known to be affected by the footprint of the proposed scheme.

The forest associations are mentioned (pp113-114), with the Mokihinui providing good examples of warm temperate and cooler temperate forests throughout the length of the gorge.

The CMS also notes the lack of knowledge about invertebrates on the West Coast, despite their international importance due to very high rates of endemism in this country. We have concerns that extensive invertebrate studies in the terrestrial area were not undertaken in the assessment of effects by Meridian.

Invasion of weed species in the conservancy is also given attention (p119), and it is important to note that the Mokihinui gorge area is characterised by low – very low weed densities/species. In contrast the Buller gorge has moderate/high occurrence of problematic weeds. This increases the value of the Mokihinui gorge system as one that is both long and relatively free from the problems of weed invasion.

Extensive mention is also made of the values of freshwater species. Most of the freshwater native fish species require the ability to migrate between sea and river within their life span. The whitebait fishery also has particular mention, as well as longfinned eel and shortjaw kokopu.

With regards to the Kawatiri Place (of which Mokihinui is within), the deep gorges of the Mokihinui and Buller/Kawatiri are noted as distinctive geological features in one of the most geologically complex areas of the West Coast.

Finally, with regard to the Mokihinui catchment, the draft CMS notes (p372):

"The Mokihinui catchment is managed primarily to provide the kind of challenging remote backcountry opportunities enjoyed by experienced New Zealanders and is maintained accordingly. A marked route is provided to the Mokihinui Forks Hut. In the north branch of the river the North Mokihinui remote zone provides opportunities for self-reliant recreation (e.g. hunting and tramping) on nature's terms and consequently has few facilities or services (see Section 3.6.2.5). The Goat Creek Hut provides accommodation in the south branch of the Mokihinui. Backcountry tramping tracks give access to areas such as the Glasgow Range and up Lyell Creek. No additional tracks or huts are constructed by the Department, but the potential for a marked route linking the Mokihinui and the Lyell is recognised. Kayaking and rafting the rapids of the upper Buller and Mokihinui gorges are popular activities (see Section 3.6.5.6). Management of the Mokihinui catchment protects the opportunity for people to experience the remoteness, peace and natural quiet of the area and its natural, historical and cultural heritage values."

(2) New Zealand Coastal Policy Statement ("NZCPS")

The Mokihinui River mouth provides an estuary which is haven for wading birds and seabirds; and other estuarine life. The NZCPS provides a hierarchy for effects on the coastal environment in terms of avoidance, remediation, and then mitigation (as opposed to that under the remainder of the RMA).

The serious effects on the coast as a result of the dam are such that the NZCPS plays an important role in determining the outcome of this proposal.

Coastal erosion, deepening and possible long term loss of estuary, significant alterations and loss of habitat, are all important issues under the NZCPS. These significant effects cannot be avoided by the scheme, and therefore should be declined. A precautionary approach must be taken with any suggestions for remedial works to prevent coastal erosion. Yet there are absolutely no offers of remediation or mitigation to deal with the serious impacts upon the coast. We understand that Meridian and the Council have been in discussion with the local community about issues of protecting property from coastal erosion – but this does not address important matters under section 6(a) of the RMA.

(3) New Zealand Biodiversity Strategy

The NZ Biodiversity Strategy states a vision in which all New Zealanders contribute to sustaining the full range of indigenous biodiversity. Of four goals listed under the

strategy, the key one with relation to this proposal is Objective 3: Halt the decline in NZ's indigenous biodiversity. Its aim is to:

"Maintain and restore a full range of remaining natural habitats and ecosystems to a healthy functioning state, enhance critically scarce habitats, and sustain the more modified ecosystems in production and urban environments; and do what else is necessary to ...

Maintain and restore viable populations of all indigenous species and subspecies across their natural range and maintain their genetic diversity."

The proposal by Meridian Energy destroys vast tracts of important habitat, and depletes the natural range of some locally endemic species. The project would also result in a lowering of genetic diversity due to the implications for reducing important connectivity and habitat enclaves.

(4) Stewardship Land

As the land is held as stewardship land, the relevant sections of the Conservation Act 1987 will apply. Under section 25 of the Conservation Act it states: *"Every stewardship area shall so be managed that its natural and historic resources are protected."*

As a relevant document, the hearing committee must be assured that the natural and historic resources associated with the Mokihinui River and the area that would be affected by the proposal, are protected.

F. Statutory Framework

Overall, the proposal does not promote the sustainable management of natural and physical resources and is inconsistent with the principles of the RMA. In particular, the hydro-scheme does not:

- a) enable people to provide for their social and cultural well being to experience the values of the extensive natural river system provided by the Mokihinui River in its pristine state (s5(2));
- b) enable people to provide for their economic well being to retain benefits derived from the Mokihinui River (s5(2));
- c) sustain the potential of the Mokihinui River to meet the reasonably foreseeable needs of future generations (s5(2)(a));
- d) safeguard the life-supporting capacity of the Mokihinui river system, the small tributaries and associated ecosystems; and those ecosystems associated with the transmission line route (s5(2)(b));
- e) avoid, remedy or mitigate the adverse effects on the environment (s5(2)(c));
- f) preserve the natural character of the Mokihinui River, the coastal environment and the river and coastal margins (s6(a));
- g) protect the outstanding natural features and landscapes within the Mokihinui River, the Ngakawau gorge and the coal plateaux (s6(b));
- h) protect areas of significant indigenous vegetation (s6(c));
- i) protect the significant habitat of indigenous fauna (s6(c));
- j) maintain and enhance public access to and along the Mokihinui River (s6(d));

- k) protect the relationship Maori have with the Mokihinui River (s6(e));
- l) protect the historical heritage associated with the Mokihinui River (s6(f));
- m) have regard to the efficient use and development of natural and physical resources (s7(b));
- n) maintain or enhance the amenity values of the Mokihinui River and its associated ecosystems (s7(c));
- o) protect the intrinsic value of river and associated ecosystems (s7(d));
- p) maintain and enhance the quality of the environment(s7(f));
- q) the finite characteristics of natural and physical resources (s7(g)); or
- r) have regard to the effects of climate change (s7(i)).

G. Energy

The proposal fails to take into account the current generation proposals for the West Coast and the capacity of these to fulfil the energy needs of the Coast.

First order dams on rivers are a destructive form of renewable energy generation. The Mokihinui Dam fits the criteria for a large dam (any dam with a height over 5 metres is classified as a large dam). Technology has moved away from dams on rivers to meet energy needs due to the serious environmental effects. The key negative effects of large dams on rivers are:

- flooding and fragmentation of ecosystems
- triggering of earthquakes
- release of greenhouse gas emissions
- degradation of water quality
- blockage to fish migration
- disruption to water and sediment flow
- possible safety hazard as structure ages/weakens
- reduction in downstream biodiversity
- decreased fish populations

Alternative energy packages exist that may be outside the scope of Meridian's capacity, but should be considered because the argument for generating power is not to provide for Meridian's needs, but to provide for the needs of the nation. Therefore alternatives should adequately consider the capacity of a multiplicity of solutions, including installation of solar hot water systems, capacity for net metering, energy conservation initiatives, community-based schemes, and small scale generation projects.

Consideration must be given to alternatives such as demand management and the long-term future with climate change.

H. Scheme Size

Although it is accepted that hydro-electricity generation is a renewable activity, the implications for the size of the scheme in relation to the resource must be considered. There is sufficient information both in the application and in the wider scientific

community to show that the size of this scheme is proportionately too large for the resource, including but not limited to:

- Significant negative impacts upon the river system, including natural character, river hydrology and geomorphology, sedimentation, landscape values, habitat for indigenous flora and fauna, intrinsic, recreational and amenity values
- Major fluctuations in flow downstream due to generation demand

I. Avoidance, remediation and mitigation is unattainable and inappropriate.

Although not forming part of their final resource consent application, Meridian has released a report (following an Official Information Act request) prepared by Landcare Research showing attempts to off-set biodiversity loss appear unattainable. Forest and Bird had been informed in consultation that this report would be presented as part of the resource consent application. We are disappointed that Meridian chose not to utilise the information in this report, particularly as they are a state owned enterprise, with an ultimate responsibility to the public of New Zealand.

J. Further Information Required/Inadequate Information

- Inadequate assessment of effects on biodiversity. The surveys undertaken are insufficient to fully gauge the effect on an extensive high quality river system, adjacent conservation land, coastal ecosystems, and ecosystems throughout the transmission route.
- Failure to consider the ecological effects (including biodiversity) of the coastal erosion, e.g. effects on estuarine and wading bird species
- Insufficient attention paid to loss of natural character throughout the entire footprint of the dam, including the coastal area.
- Insufficient consideration paid to alternative energy sources, including potential for an energy 'package' including a combination of solutions.
- Information about coastal effects inadequate and poorly surveyed.
- Geomorphic information is inadequate and incomplete. The conclusions reached about dams being a natural feature of the gorge is not consistent with the historical knowledge of dams in the gorge, i.e. although dammed in 3 places following the 1929 earthquake, all of the dams were breached naturally due to high river flows. Furthermore, there is literally insufficient material at the dam site in the gorge that would create a natural dam comparable in size to Meridian's proposal.
- Inadequate hydrological/sediment assessment. We are aware that this information is changing all the time and that there has been insufficient attention given to the particular effects of sedimentation.
- Insufficient analysis of impacts upon water quality, including downstream effects.
- Nil regard to the release of greenhouse gases associated with the project.
- The archaeological assessment is incomplete and omits obvious and important archaeological sites, e.g. Anderson's Creek settlement, Tyler's goldmining spot. It also fails to consider what archaeological sites may be lost through increased coastal erosion.

K. Conclusion

Forest and Bird seek that the consents are declined.

Furthermore we oppose the extension of the statutory lapsing period for all consents in this application to 10 years.

Forest and Bird wish to be heard in support of this submission.

A copy of this submission has been forwarded to the applicant.



Debs Martin
Regional Field Officer
Royal Forest and Bird Protection
Society of New Zealand (Inc)

Date 23rd April 2008