

#### WEST COAST REGIONAL COUNCIL

To: Resource Management Committee

From: South Westland Freshwater Management Unit Group

Date: 25 February 2022

Subject: Recommendations from the South Westland Freshwater

Management Unit (SWFMU) Group

## **Executive Summary**

The National Policy Statement for Freshwater Management (NPS-FM) 2020 requires regional councils to identify Freshwater Management Units (FMUs) for freshwater management and accounting purposes. The West Coast Regional Council (WCRC or the Council) identified four FMUs, namely 'Kawatiri', 'Grey', 'Hokitika' and 'South Westland'; and established community representative groups for each FMU.

The South Westland FMU (SWFMU) Group consisted of ten members, including seven community members and one representative each for Te Rūnanga o Makaawhio, Westland District Council, and the WCRC. Given the extent of Department of Conservation (DOC) and stewardship land in the SWFMU, a representative from DOC participated as an "observer". Staff from the WCRC supported the work. A Terms of Reference established the SWFMU Group's function and purpose.

The NPS-FM requires that, "freshwater is managed through a National Objectives Framework process to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and that the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved". The SWFMU Group worked through this assessment process over three workshops, which were held on 25 February, 22 April, and 23 September 2021. The Group's recommendations for future plan provisions and work programmes to manage the land and water resources within the FMU, as put forward in this Report for consideration by the Council's Resource Management Committee (RMC), are a result of these engagements.

The SWFMU Group 'workshopped' and agreed on a long-term vision for freshwater. Consistent with the NPS-FM, the Group's long-term vision sets ambitious goals underpinned by Te Mana o te Wai. For the purposes of the NPS-FM, "Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment".

The NOF assessment process "requires regional councils to identify values for each FMU; to set environmental outcomes for each value and include them as objectives in regional plans; to identify attributes for each value and set baseline states for those attributes; to set target attribute states, environmental flows and levels, and other criteria to support the achievement of environmental outcomes; and to set limits as rules and prepare action plans (as appropriate) to achieve environmental outcomes". The NOF assessment process shaped the FMU Group's discussions and the resultant recommendations herein.

Consistent with the NPS-FM, the SWFMU Group explored and considered Māori Freshwater Values. Members then identified a range of other values associated with freshwater that were important to them and to the local community. The South Westland community is a small, close-knit community, and heavily dependent on farming and tourism for its survival.

All members of the SWFMU Group expressed grave concerns about the impacts new Freshwater Regulations will have on maintaining traditional farming practices, tourism, and lifestyle. As a priority they seek to maintain their traditional ways of life in harmony with fresh waterbodies and nature, enable development of hydro electric power generation, realise opportunities for commercial and industrial use of local waterbodies, and enhance scenic values and tourism (the Fox Glacier, for instance, is a major drawcard but is in decline and receding rapidly).

The SWFMU Group recognises that the Resource Management Act's purpose of sustainable management includes enabling the social, economic and cultural well-being of communities. The Group suggests that freshwater policy for the South Westland FMU should enable communities to provide for their economic, social and cultural wellbeing.

The SWFMU Group reported that people within their local community feel strongly about the quality and health of local water resources and would like to see more extensive and regular monitoring of waterbodies, in addition to the Haast River, which is currently the only waterbody monitored in the FMU for water quality. (NIWA monitors the Haast River for water quality).

Although the minimal monitoring in South Westland indicates that water quality is generally high, more water quality measuring is sought to provide ongoing assurance that our waterways are safe conjointly with the traditional activities carried out within the area. The SWFMU Group acknowledges the scarcity of Council resources to assist in this area. The Group therefore considered various approaches, which triggered it to propose setting up a voluntary community-led water monitoring programme with the support of the Council.

The Group also expressed concern about other areas that require attention, such as tackling aquatic pest plants and weeds. Tackling aquatic pest plants impacts on all priority outcome areas. If not addressed, there will be an imbalance between the traditional way of life, hydroelectric power generation realising opportunities for commercial and industrial use of local waterbodies, and enhancing scenic values and tourism, such as, swimming, fishing and boating. The Group developed an outline action plan to address the weed issue. The Group also reflected on other aspects of the NPS-FM, such as outstanding waterbodies, and contributed to updating the Regional Plan's list of threatened species and habitats.

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#### 1. Recommendations

The recommendations below are put forward by the SWFMU to the Regional Council's Resource Management Committee (RMC) for consideration.

## **1.1 Value(s):** Māori freshwater values

#### Recommendations

- 1.1.1 Include provisions in the Regional Land and Water Plan that ensure mahinga kai is safe to harvest and eat; that species are plentiful enough for long term harvest; and that the full range of species are present across all life stages.
- 1.1.2 Include provisions in the Regional Land and Water Plan to protect the *mauri* of freshwater; and ensure that freshwater bodies are available and able to be used for customary use, i.e., in a traditional way.
- 1.1.3 Include provisions in the Regional Land and Water Plan that ensure a cultural allocation so that Te Rūnanga o Makaawhio's freshwater management values are provided for in the allocation of water.

The value – outcome – objective – recommendation format below is consistent with the NPS-FM 2020 and the NOF assessment process.

## **1.2 Value:** Community History (Iconic Heritage)

## **Objectives:**

To solicit active engagement by central government with local communities before central government and its ministries and agencies make freshwater policy changes that significantly affect local communities.

To heighten central government awareness of traditional farming practices that maintain and enhance the traditional way of extensive river run farming in South Westland.

#### Recommendations

- **1.2.1** Advocate for Government to engage and consult with local communities in the South Westland FMU before imposing changes to national laws.
- 1.2.2 Advocate for support for South Westland FMU farmers to meet the requirements of the new regulations.
- 1.2.3 Add a policy to the Regional Land and Water Plan about local communities being able to use freshwater to provide for their social and economic wellbeing.

## **1.3 Value(s):** Ecosystem health and clean water (a compulsory value in the NPS-FM 2020)

#### **Desired Outcome:**

Traditional farming and fishing activities are maintained.

## Objective:

To develop alternative solutions for compulsory stock exclusion and have these approved by the local community and by central government.

#### Recommendations

- **1.3.1** RMC members visit the South Westland area, discuss the issues locally and propose alternative workable solutions to stock exclusion, for example, limit fencing to areas where stock are being intensively farmed and have a measurable impact on ecosystem health.
- **1.3.2** Promote and enhance riparian management areas where the runoff has natural filtration systems intercepting contaminants.
- **1.3.3** Agree to continue to advocate in submissions on freshwater regulations to exempt South Westland low intensity, low stocking, 'run of the river' farming from fencing regulations.

**Objectives:** To exclude waterways on stewardship land from the NES FW Regulations 2020; and to engage in central government's stewardship land reclassification process.

#### Recommendations

- 1.3.4 Advocate for the assessment of stewardship land to include both environmental and economic values, including but not limited to assessments of conservation value and local community well-being; and that the RMC present a submission to central and local government and relevant stakeholders. (Note that approximately 35 percent of the public conservation land on the West Coast (Tai Poutini) is stewardship land, totalling 1,000,000 hectares).
- **1.3.5** Inform the Chair of the Western South Island Independent Expert Panel providing recommendations on the reclassification of stewardship land nationally on the views of the SWFMU and seek a response from the panel with respect to the recommendations herein and the reclassification of stewardship land.
- **1.3.6** Advocate for a communications plan for stewardship land, which includes engaging regularly with the Western South Island Independent Expert Panel on the assessment of stewardship land for South Westland.
- **1.3.7** Request the Western South Island Independent Expert Panel's assessment of risks and opportunities include social, economic and cultural risks and opportunities as well as environmental risks and opportunities.

## **1.4 Value**: Hydro-electric power generation

#### **Desired Outcome:**

The South Westland FMU is self-sufficient in energy supply.

## **Objectives:**

To enable self-sufficient hydro electricity generation in the South Westland FMU through a regulatory framework; and to promote hydro electricity generation in the South Westland FMU that enhances community resilience to natural hazards and economic disruptions.

#### Recommendations

- **1.4.1** Advocate for multiple smaller hydro electricity generation schemes to promote risk resilience; and that Council recognise opportunities for smaller operators because the point of generation is spread out.
- **1.4.2** Work with DOC to create a process for supporting discrete micro and small-scale hydro electricity generation schemes on water bodies within public conservation land.

## Objective:

To develop a supportive regulatory framework for providing for appropriate hydro schemes.

#### Recommendation

**1.4.3** Collaborate with other West Coast agencies to develop an economic development strategy that includes consideration of appropriate small-scale hydro generation schemes in the South Westland FMU.

**Objective:** To implement more local measures that support greater carbon neutrality.

#### Recommendation

**1.4.4** Encourage the installation of more electric vehicle charging stations, which reduce the use of fossil fuels and utilise locally produced electricity, especially hydro.

#### **1.5 Value**: Commercial and industrial use

#### **Desired Outcome:**

Freshwater resources in the South Westland FMU provide economic opportunities for people, businesses and industries.

## Objective:

That options for freshwater commercial and industrial use are provided for, where they contribute to the social, economic and cultural wellbeing of South Westland communities, and within environmental limits.

#### Recommendation

**1.5.1** Advocate for further research and face-to-face consultation between relevant economic development agencies, e.g., Development West Coast and Ngāi Tahu, and South Westland FMU communities.

## 1.6 Value: Scenic values and tourism

#### **Desired Outcome:**

The scenic values of freshwater and glaciers that are important for tourism are enhanced.

## Objective:

To prioritise the economic value of fresh water and glaciers to tourism in freshwater management planning; and to consider freshwater in tourism funding.

## Recommendations

- **1.6.1** Advocate for funding from sources such as the Freshwater Improvement Fund to meet the needs of the tourism industry in the South Westland FMU, to recognise the value contributed by the glaciers and glacier towns.
- **1.6.2** Make provisions for tourism specific activities in the regional plan.
- **1.7 Value(s)**: Drinking water supply, Animal drinking water and Human Contact (compulsory value in NPS-FM 2020)

#### **Desired Outcome:**

Water is fit for human and animal consumption and use.

Water, an essential to life, remains free and available.

#### Objective:

To maintain or improve the quality of water in South Westland FMU waterbodies, including for contact recreation at specific swimming sites and for Māori customary use.

#### Recommendations

- **1.7.1** Approve the establishment of more extensive water quality monitoring throughout the South Westland FMU. This recommendation includes approving water sampling at Lake Nisson.
- **1.7.2** Approve funds to undertake a one-year initial sampling study over a minimum of four sites, then review as to whether to continue the study.
- **1.7.3** Advocate to address the threat to water quality presented by increasing numbers of feral mammalian pests in the bush.
- 1.7.4 Encourage the Westland District Council to implement guidelines for water treatment, based on WHO guidelines for maximum acceptable values, irrespective of the size of the water supplier. (As required in the drinking water standards, the SWFMU Group believes the availability of safe drinking-water for all New Zealanders, irrespective of

where they live, is a fundamental requirement for public health; and a district council responsibility).

## **1.8 Value(s)**: Ecosystem Health (compulsory value in NPS-FM 2020)

#### **Desired Outcomes:**

All weeds in South Westland FMU waterbodies are managed effectively.

There are no new incursions of aquatic pest plants in South Westland FMU freshwater bodies.

## Objective:

To manage the spread of existing aquatic pest plants in South Westland FMU lakes and rivers effectively, and to avoid new infestations.

#### Recommendations

- **1.8.1** Evaluate research on aquatic pest species control; and look nationally and overseas for control tools and methods that suit South Westland.
- **1.8.2** Explore options for using helicopters for aerial spraying of weeds, such as lagarosiphon.
- **1.8.3** Support the organisation of a South Westland "Weed busters" weekend. (As an example, the programme may operate similarly to the successful operation carried out by Ōkārito gorse busters).
- **1.8.4** Support the development and marketing of a jet boating itinerary for lake users in South Westland that reduces the risk of spreading weeds.
- **1.8.5** Support the South Westland FMU Group to develop a community-based weed control programme in collaboration with DOC.
- **1.8.6** Map waterbodies affected by aquatic pest plant infestations throughout the South Westland FMU and identify problem areas within those waterbodies clearly.

#### Objective:

To educate the public, and boat users in particular, about the consequences of spreading aquatic pests and tell them how to avoid spreading them

#### Recommendations

- **1.8.7** Give regular biosecurity updates to boating clubs about the consequences of spreading aquatic pests and how to avoid spreading them.
- **1.8.8** Update the Council web site, print media and social media about biosecurity risks with spreading aquatic pests and how to avoid spreading them.
- **1.8.9** Seek support for national biosecurity education in media to address the spreading of aquatic pests and how to avoid spreading them.
- **1.8.10** Engage with the New Zealand Jet Boat Association about biosecurity education, and the consequences of spreading aquatic pests and how to avoid spreading them.

**Objective:** To set up ways for boaters to decontaminate their boats.

#### Recommendations

- **1.8.11** Support targeted education to boating clubs about decontaminating their boats.
- **1.8.12** Seek funding and collaborate with other agencies to provide boat cleaning stations at boat ramps.
- **1.8.13** Promote achievable methods that stop weeds spreading beyond boat launch areas.

**Objective:** To maintain a rigorous weed surveillance programme.

#### Recommendation

**1.8.14** Develop and maintain a collaborative weed surveillance programme with DOC, the local community, and other relevant organisations, including NIWA.

## 2. Background

In 2020, Central Government updated its Freshwater Package with the view to restore and protect New Zealand's rivers, lakes, streams, aquifers, and wetlands for future generations. Commonly referred to as the "Essential Freshwater" Package, the Package includes:

- A replacement National Policy Statement for Freshwater Management (NPS-FM 2020);
- New Resource Management Regulations (National Environmental Standards for Freshwater 2020), (NES-F);
- New Resource Management (Stock Exclusion) Regulations 2020; and
- Amended Regulations for the measurement and reporting of water takes (Resource Management (Measurement and Reporting of Water Takes) Amendment Regulations 2020).

The NPS-FM 2020 applies to all freshwater (including groundwater) and, to the extent they are affected by freshwater, receiving environments (which may include estuaries and the wider coastal marine area).

To ensure that the health and well-being of degraded waterbodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved, the NPS-FM 2020 provides for freshwater to be managed through a National Objectives Framework [Policy 5, NPS-FM 2020].

The NPS-FM 2020 also requires every regional council to manage fresh water and land use in an integrated and sustainable way, and to engage with communities and tangata whenua at each step of the National Objectives Framework (NOF) process. To help facilitate this process, every regional council must identify FMUs at a spatial scale over which freshwater is managed. The SWFMU ranges from south of the Waiho River to the southern regional boundary at Awarua Point (Figure 1).

The SWFMU Group's recommendations to the Council for achieving its long-term vision, and for future plan provisions and work programmes to manage the land and water resources within the SWFMU, have arisen from a process of engagement consistent with the NPS-FM. Over the period for which this Group met, its members covered a number of topics. And the Group's recommendations contain both 'prescriptive' measures, e.g., proposed rule changes to the Regional Plan; and 'non-prescriptive' measures, e.g., weed control measures.

To keep the wider community informed, regular updates of the SWFMU Group's work have been posted on the Council's website and Facebook page. An article was included in a South Westland community newsletter, and the Council's Resource Management Committee has been updated throughout the process.

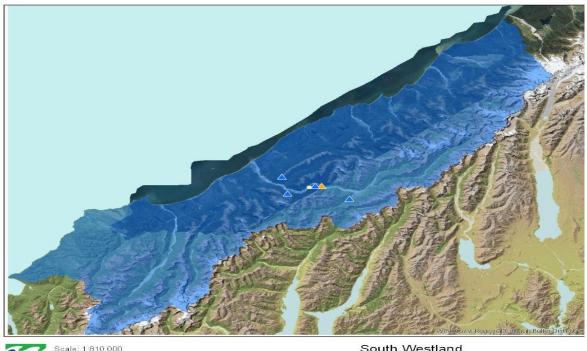
The SWFMU Group operates in partnership with Te Rūnanga o Makaawhio (the mandated representative body of Ngāti Māhaki ki Makaawhio, a hapū of Ngāti Tahu) to recognise and respect the principles of the Treaty of Waitangi and develop recommendations which consider and reflect mana whenua cultural values.

To form the SWFMU Group, Council staff held a public information session on 3 November 2020 in Fox Glacier. Following a call for public nominations from the local community, member applications were considered and brought to the Resource Management Committee for approval.

The SWFMU Group included seven community members from a wide range of backgrounds representing a broad array of professional and personal interests related to land and water management. These members were Simon Cameron, David Friend, Brenda Monk, Catherine Montague, Kirsten Sandri, Maurice Sullivan, and Rowan Sullivan. The West Coast Regional Council appointed one elected member (Councillor Stuart Challenger) to the Group. And the Westland District Council appointed one elected member (Councillor Ryan Kennedy served until November 2021 and was replaced by Councillor Ian Hartshorne on 24 January 2022). Te Rūnanga o Makaawhio appointed Rob Wilson. Rob Wilson was elected Chair. Kara Edwards, Pouarahi/CEO, Te Runanga o Makaawhio, also contributed to the Group's work.

Anya Kruszewski, a representative from the Department of Conservation (DOC) who lives in the South Westland FMU, attended the workshops in an observer capacity. Most of the SWFMU is within public conservation land, and DOC therefore has a large role to play in land and water management in the FMU. The Council engages with DOC through its engagement process on freshwater management, whereas FMU Groups are established to give local communities a voice in freshwater management.

The SWFMU Group convened in February 2021 and held its third and final workshop on 23 September 2021. WCRC staff facilitated the workshop process and supported it with capacity building on water science (Jonny Horrox), and regulatory and water policy planning (Teresa Thorp). Policy development and recommendations are incorporated in the main body of this Report; and a section on water science in the SWFMU is appended for reference (Appendix 1). A group photo is also appended (Appendix 2).





South Westland Freshwater Management Unit

Figure 1: Boundaries of the South Westland FMU (SWFMU).

Blue triangles indicate rain gauges. The orange triangle marks the location of a flow site, and the dot marks the location of a water quality monitoring site.

## 3. Te Mana o te Wai

The NPS-FM 2020 requires freshwater to be managed in a way that gives effect to Te Mana o te Wai (NPS-FM Policy 1). The NPS-FM defines Te Mana o te Wai as "a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community". Giving effect to Te Mana o te Wai reinforces the partnership with tangata whenua, and the vital importance tangata whenua place on the integrated and holistic wellbeing of water.

#### 4. Māori and Cultural Freshwater Values

The NPS-FM 2020 recognises that, should they wish, tangata whenua are to be actively involved in freshwater management, including decision making processes, and that cultural values are to be identified and provided for (Policy 2, NPS-FM 2020). The NPS-FM 2020 also provides, "Māori freshwater values means the compulsory value of mahinga kai and any other value (whether or not identified in Appendix 1A or 1B) identified for a particular FMU or part of an FMU through collaboration between tangata whenua and the relevant regional council". This section reflects on, and puts forth, recommendations for both Māori and cultural freshwater values.

In this light, the SWFMU Group invited Kara Edwards, Pouarahi/CEO of Te Rūnanga o Makaawhio [the mandated representative body of the Ngāti Māhaki hapū], to present to the Group. In her presentation, Kara pointed out that Māori relationships with water have eroded over the last 150 years. However, Ngāi Tahu has recently responded by developing a Freshwater Policy Statement, which Kara suggests the Council should consider when developing regional plans.

Ngāi Tahu's Freshwater Policy Statement, addressed to Ngāi Tahu Whānui, refers to water as "a taonga left by ancestors to provide and sustain life. It is for the present generation, as tangata tiaki, to ensure that the taonga is available for future generations in as good as, if not better quality". The Freshwater Policy Statement also specifies Ngāi Tahu's core values around water.

Kara's presentation included an overview of perspectives from Te Rūnanga o Makaawhio and Te Rūnanga o Ngāi Tahu. She also shared a Ngāi Tahu video on Freshwater with the Group. In that video, Dr Te Marie Tau and Whaea Liz Kereru state that Te Rūnanga o Ngāi Tahu filed a Statement of Claim on Wai Māori and Freshwater before the High Court on 27 October 2020. The detail is not in the public domain at this stage and was not shared with the FMU Group. Kara did, however, share that water is a treasure (a taonga) and having the ability to exercise some authority over water management within the SWFMU is of utmost importance to mana whenua.

Amongst other, Kara confirmed that Ngāi Tahu considers national Climate Change Policy useful for managing freshwater at the local level. According to the NPS-FM, in setting limits such as environmental flows and levels, every regional council must have regard to the foreseeable impacts of climate change. And every regional council must prepare and publish predictions of changes, including the foreseeable effects of climate change, that are likely to affect water bodies and freshwater ecosystems in the region.

As to the compulsory value of 'mahinga kai', Kara explained that 'mahinga kai' is related to the land, and connected to things that clothe, feed, and provide shelter. Mahinga kai is also about connecting our ancestors and the past through cultural practice. In this regard, intergenerational transfer of knowledge is imperative. Sometimes, however, water quality issues have reduced the abundance of mahinga kai resulting in reduced harvest and a loss of intergenerational traditional knowledge and 'know-how'.

For Te Rūnanga o Makaawhio, 'Rangitiratanga' is another important value and relates to independence as provided for in the Treaty of Waitangi. Whereas Kaitiakitanga is the expression of authority.

Both Kara, and Rob Wilson (Te Rūnanga o Makaawhio's representative on the SWFMU Group and Chair of the Group), highlighted that the Jacobs River is one of the most important rivers for Te Rūnanga o Makaawhio. They also drew attention to the *ki uta ki tai* (from the mountains to the sea) philosophy being the concept used by the hapū to describe their overall approach to water management. Water and land are not separate entities. They are intrinsically interconnected and must therefore be managed using a holistic and integrated approach because what happens on the land affects what happens on water.

Ngāti Māhaki values all water. Irrespective of whether it is groundwater, coastal water, or water flowing in rivers or through drains, water embodies *mauri* (the life-giving essence).

Kara and Rob also emphasised the importance of maintaining *mauri* (the life-giving essence) of water. Water degradation impacts not only the *mauri* of the water but its *mana* (or prestige) too, as it reduces the ability for Ngāti Māhaki to collect mahinga kai and to manaaki (to welcome, show respect, share food, and provide hospitality for their visitors). Kara and Rob explained that mana whenua, as kaitiaki (trusted guardians), have inherited a responsibility to pass healthy water onto future generations.

Ngāti Māhaki consider that cultural and public health uses of water, and water's ecological values, need to be recognised and provided for before consumptive use.

Ngāti Māhaki values water because of the intrinsic role water plays:

- In creation stories;
- In identity;
- In making connections through historical accounts;
- In providing a source for navigational routes and traditional travel routes;
- As a taonga (a treasure);
- As 'wāhi tapu' (sacred places, sites and areas);
- For cultural purposes, e.g., ceremonies;
- For mahinga kai;
- In the production of goods and materials e.g., weaving and medicine; and
- In the gathering of pounamu (pounamu is not taken from areas with poor water quality).

Kara pointed out that western science uses particular measures and techniques to determine water quality. Whereas, for Ngāti Māhaki, scientific measures can only be useful for partly informing the cultural health of a waterway; they don't fully determine the cultural health of a waterway.

Kara suggested using a Cultural Health Index (CHI) as one complementary method for determining the health of our waterways. For Ngāti Māhaki, traditional knowledge (an understanding of Māori custom and tradition) is required to use this method, so only appropriate mana whenua should undertake Māori cultural health monitoring in the SWFMU.

An overview of Ngāti Māhaki's Māori Freshwater Values in the South Westland FMU is shown in the slide below.

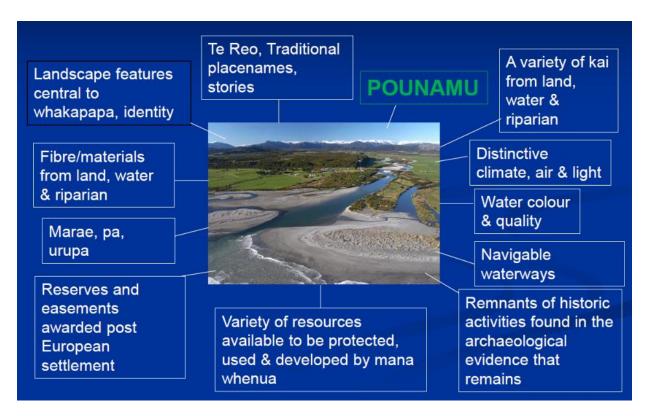


Figure 2: An overview of Māori Freshwater Values in the SWFMU

Consistent with Māori and cultural freshwater values being identified and provided for, Ngāti Māhaki put forward the following recommendations:

- Include provisions for freshwater management in the Regional Land and Water Plan that ensure mahinga kai is safe to harvest and eat; that species are plentiful enough for long term harvest; and that the full range of species are present across all life stages.
- 2. Include provisions in the Regional Land and Water Plan to protect the *mauri* of freshwater; and ensure that freshwater bodies are available and able to be used for customary use, i.e., in a traditional way.
- 3. Include provisions in the Regional Land and Water Plan that ensure a cultural allocation for the values of Te Rūnanga o Makaawhio are provided for in the allocation of water.

## **5. The National Objectives Framework Assessment Process**

The National Objectives Framework (NOF) assessment process was presented to the SWFMU Group at its first workshop. The NOF policy assessment follows a specified process to achieve the FMU's long term vision for freshwater management, consistent with Te Mana o te Wai.

After vision setting, the NPS-FM 2020 identifies the principal elements of the NOF required to achieve the long-term vision as follows:

- 1. Determine applicable values;
- 2. Set environmental outcomes for each value and include them as objectives in regional plans;
- 3. Identify attributes and flows for each value, outcome, or objective and set baseline states for those attributes:
- 4. Set target attribute states, environmental flows and levels, and other criteria to support the achievement of environmental outcomes; and
- 5. Set limits and methods, e.g., rules or action plans to achieve environmental outcomes.

The NOF process is illustrated in Figure 3 below.

# Te Mana o te Wai National objectives framework — a process undertaken to achieve the long term vision

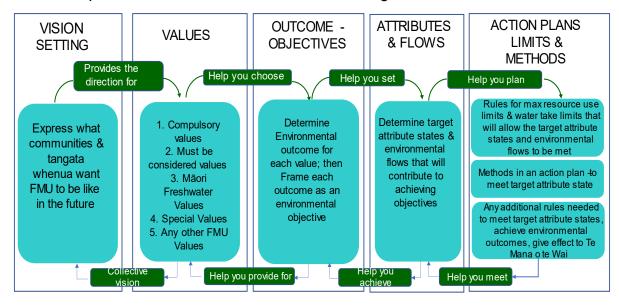


Figure 3: NPS-FM 2020 National Objectives Framework for Freshwater Management

## 5.1. Long Term Vision for Freshwater

The SWFMU Group finalised its Long-term Vision for freshwater management, comprising both an objective and underlying goals, at its third workshop, held on 23 September 2021.

## Long Term Vision for Freshwater Management in the South Westland FMU:

## Objective

The ability to continue using freshwater bodies in the South Westland FMU for drinking, stock supply, swimming, boating, access and aquaculture which are important to local communities, in harmony with freshwater ecosystems, is maintained and managed, where necessary, on a long-term sustainable basis for this generation and for future generations to come.

#### Goals

That by no later than 2050, freshwater in the South Westland Freshwater Management Unit is managed by an integrated approach, *ki uta ki tai* (from the interconnectedness of the mountains to the sea) which:

- Supports healthy, resilient freshwater ecosystems free of aquatic weeds;
- Ensures that the quality of water in South Westland's waterbodies is maintained or improved;
- Ensures drinking water is available and safe for human and stock consumption in the South Westland FMU;
- Ensures that water is suitable for Māori customary use;
- Ensures that water quality is suitable for contact recreation;
- Supports self-sufficiency for the community through hydro-electric power generation within the FMU;
- Supports the FMU being resilient to the adverse effects of climate change, natural disasters, and weather events and ensures the FMU has the capacity to respond and recover:
- Ensures that riverbed gravel extraction in the FMU is managed sustainably;
- Retains the beauty of South Westland's waterbodies; and
- Supports sustainable agriculture, whitebaiting, aquaculture, tourism, and other activities, including resource use, which underpin the South Westland FMU's economic wellbeing of its communities.

## 5.2. Values of Importance to the South Westland FMU Community

Identifying community values relevant to freshwater management throughout South Westland was essential to the workshop process. The SWFMU Group considered how the range of values as defined in the NPS-FM may apply to the FMU.

The NPS-FM 2020 values explored and discussed included:

Māori and Cultural Freshwater values (as covered in the preceding section).

#### **The Four Compulsory Values**

- 1. Ecosystem health, such as habitat and aquatic plant pest control;
- 2. Human contact, such as swimming, fishing, and recreation;
- 3. Threatened species, such as whio (blue duck); and
- 4. Mahinga kai, such as ensuring the *mauri* (essence) of the place is intact and kai is safe to harvest and eat.

#### The Nine "must be considered" Values

- 1 Natural form and character;
- 2 Drinking water supply;
- 3 Wai tapu (sacredness of the water, rituals and ceremonies performed);
- 4 Transport and Tauranga waka (waka landings);
- 5 Fishing (the FMU or part of the FMU supports fisheries of species allowed to be caught and eaten);
- 6 Hydro-electric power generation;
- 7 Animal drinking water;
- 8 Irrigation, cultivation and production of food and beverages; and
- 9 Commercial and industrial use.

As part of the NOF assessment process, the NPS-FM 2020 also makes provision for any other values (or criteria) that the FMU may wish to consider.

Figure 4 below shows the range of values put forward by the SWFMU Group in the left-hand column and, where appropriate, aligns them to relevant NPS-FM 2020 values in the right-hand column so they can be analysed and developed within the context of the NPS-FM 2020. (The values are not in order of priority, i.e., there is no hierarchy, and all are important).

[For a description of the NPS-FM 2020 values, see Appendices A1 and B1 of the NPS-FM 2020].

Values	Alignment with NPS-FMU 2020 values				
put forward by the SWFMU Group	Alignment with NFS-FMO 2020 values				
Community History	"Other" - FMU unique				
Future community viability	"Other" - FMU unique				
Hunting (animals drink water)	"Other" - FMU unique. Also incorporates integration of human contact, mahinga kai and commercial interest.				
Maintain South Westland way of life	"Other" - FMU unique				
Maintain what we have	"Other" - FMU unique				
Sustainability for communities	"Other" - FMU unique				
Sustainability for people	"Other" - FMU unique				
Today's values for future uses	"Other" - FMU unique				
Tourism and scenic values	"Other" - FMU unique				
Traditional water use	"Other" - FMU unique				
Water Use – no financial burden	"Other" - FMU unique				
Whitebait	"Other" - FMU unique				
Agriculture – High quality fresh water	Ecosystem health				
Boating – protection from pest plants and weeds	Ecosystem health				
Clean water – swimming – lakes and rivers	Ecosystem health				
Clean water – recreational use	Ecosystem health				
Water clarity	Ecosystem health				
Water Quality – drinking, swimming, boating	Ecosystem health				
Agriculture	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Agriculture - High quality beef, organic beef	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Farming	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Irrigation	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Sustainable agriculture	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Food	Mahinga Kai; Irrigation, cultivation and production of food and beverages				
Stock Water. Farming and agriculture water.	Animal Drinking Water				
Agriculture – breeding, raising and finishing	Commercial and industrial use				

Values	Alignment with NDS EMIL 2020 volume		
put forward by the SWFMU Group	Alignment with NPS-FMU 2020 values		
Aqua culture – transparency for future projects	Commercial and industrial use		
Commercial Fishing	Commercial and industrial use		
Commercial water use	Commercial and industrial use		
Opportunity to share and supply others	Commercial and industrial use		
Sustainable commercial use	Commercial and industrial use		
Tourism – Jet Boats	Commercial and industrial use		
Hydro Power	Commercial and industrial use		
Drinking Water. Clean water. Healthy living	Drinking water supply		
Fishing	Fishing		
Fishing Access	Fishing		
Boating	Human contact		
Hunting	Human contact and Mahinga Kai		
Recreation – boating, fishing, skiing	Human contact		
Recreation – children swimming and exploring	Human contact		
Recreational Boating	Human contact		
Recreational Fishing. Fly fishing	Human contact		
Swimming – clean areas	Human contact		
Hydro Power - transparency for future projects	Hydro-electric power generation		
Hydro-electric schemes	Hydro-electric power generation		
Power Generation - large volume going to the sea	Hydro-electric power generation		
Power Generation - renewable	Hydro-electric power generation		
Natural significance	Natural form and character		
Preserve natural forms and beauty	Natural form and character		
Scenic Values	Natural form and character		
Physical Access	Transport and Tauranga waka		

Figure 4: South Westland FMU Group Values

## 5.3. Priority Issues, Values, Objectives, Action Plans and Limits

Time constraints did not allow the SWFMU Group to determine an environmental outcome for each value put forward, or to frame each outcome as an environmental objective supported by targets and/or action plans to achieve those targets.

In addition to the four compulsory priorities (ecosystem health, such as habitat and aquatic plant pest control; human contact, such as swimming, fishing and recreation; threatened species, such as whio (blue duck); and mahinga kai, such as ensuring the mauri (essence) of the place is intact and kai is safe to harvest and eat), the Group identified four priority issues concerning freshwater management and framed them as environmental objectives for the Regional Council to consider, these being:

- To maintain traditional farming practices and lifestyle;
- To enable the development of hydroelectric power generation within a regulatory framework:
- To enable (realise) opportunities for commercial and industrial water use; and
- To enhance scenic values and tourism.

The four priorities are described below.

# **5.3.1. Maintain Traditional Farming Practices and Lifestyle**

The SWFMU Group conveys its grave concern to the Regional Council about national freshwater regulations eroding local democracy by local decisions being taken away from communities and local government. The conditions these new stock exclusion regulations will impose on South Westland farmers who wish to continue extensive 'run of the river' farming on large river valley blocks are mostly unworkable. Fencing in a lot of areas is not practical. The cost of fencing would be prohibitive, and fences would be frequently destroyed by flooding (maybe several times a year). Fencing would restrict stock's ability to escape flooding. Extensive grazing also protects from weed infestations.

The new national regulations will potentially drive some farmers in the SWFMU away from their homes and off the land. Given the high rainfall, climate, and large nature of South Westland's rivers, the fences would be damaged by floods and stock are likely to drown if caught up in the fencing.

Most farmers lease 'run of the river' blocks from DOC, which raises issues as to whether DOC will pay for the fencing, such as artificial boundary structures or riparian planting, or whether farmers will lose the lease for these blocks.

With respect to protecting local farming interests, and 'run of the river' low intensity grazing, the SWFMU Group acknowledges that the Council has done what it can to further the community's interests by alerting the ramifications of the new freshwater policy and regulations to central government via the submission process, which is one mechanism available to the Council to voice its concerns nationally. The Council has made submissions to the Ministry for the Environment and central government on the new regulations for stock exclusion, freshwater farm plans, and intensive winter grazing.

With respect to regulating beef cattle on low slope land, for example, the SWFMU Group supports Council's request for a full and complete exemption for low intensity farmland use.

If these freshwater management issues, unique for New Zealand in South Westland, are not addressed nationally, SWFMU Group members are concerned that the flow through effect of disrupting traditional ways of farming could impact communities and small settlements negatively by those communities' losing not only jobs but also services and facilities, such as schools, health centres, and food outlets.

The SWFMU Group provided evidence that extensive (as opposed to intensive) 'run of the river' grazing has been carried out for over 100 years throughout South Westland. They evidenced that since 1989, NIWA water quality monitoring results from the Haast River have never demonstrated any significant issues with water quality. Water in the SWFMU is renowned nation-wide for being pristine. Grazing stock has helped control terrestrial weed growth. Furthermore, and as evidenced in the recent Buller severe weather and flooding incident, in the case of natural disasters to the West Coast region, the Group suggests food security and resilience to trade disruptions (making sure supply chains are functioning, stocking local supermarkets, etc.) are important considerations for the Council's decision-makers. All are conscious of the potential for an alpine fault rupture, and ready access to local food and water sources will be important should such a disruption occur.

Extensive farming also ensures the land is looked after and that farming practices are sustainable for future generations. Traditional agricultural practices and forms of "regenerative agriculture" that contribute to climate change mitigation may even be key to New Zealand's sustainability. In the face of more global pandemics and border closures, we need to be self-sufficient in human and stock drinking water, food supply and food consumption, even to the extent of considering extending horticultural practices in wet areas, and using wetlands as carbon 'sinks', which should be incorporated in freshwater and climate change accounting practices. In this regard, South Westland's traditional practices could serve as a pilot. In many areas, benefits of extensive farming occur when grazing stock trample the earth, eat the stems, and fertilise the soil naturally.

To quote the FMU Group, "If we agree that the valleys where the river runs exist, stocked with cattle historically, face no immediate threat, then until it is proven that cattle management and farming practices are detrimental to these valleys, these ecosystems should stay the same. Removing or changing anything could upset the balance of those ecosystems".

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

#### 5.3.2. Develop Hydro Electric Power Generation

Remoteness and frequent rough weather throughout the South Westland FMU means that the security of electricity supply is not good. A few small-scale hydro electricity generation schemes operate throughout the SWFMU but most communities, and many households, rely on diesel generated power as a back up. Diesel generators will be problematic in the future, the Government is moving to reduce fossil fuel power generation and it has climate change obligations to meet. The SWFMU Group recommends supporting the development of hydroelectric power generation in the FMU.

This said, opportunities to generate hydroelectricity power are currently constrained due to consenting hurdles, finance, and the majority of suitable waterways in the FMU are located in the public conservation estate.

The Group placed considerable value on being able to use freshwater in the SWFMU to generate hydroelectricity and highlighted the NPS-FM 2020 providing for hydro-electric power generation as a "must be considered" value.

The footprint and environmental effects of hydro electricity generation infrastructure is not necessarily significant as micro and small-scale 'run of river' schemes do not involve large-scale damming of river valleys, and can have minimal effects, if managed sustainably.

Central government agricultural subsidies could also be directed to the provision or construction of capital works for infrastructural services, including electricity reticulation throughout South Westland.

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

## 5.3.3. Realise Opportunities for Commercial and Industrial Use

Commercial and industrial use is another "must be considered" value in the NPS-FM. The NPS-FM provides, "The FMU or part of the FMU provides economic opportunities for people, businesses and industries. Water quality and quantity can provide for commercial and industrial activities. Attributes will need to be specific to commercial or industrial requirements".

Besides farming, tourism, and whitebaiting, there is currently little commercial and industrial use of freshwater in the SWFMU. On considering this value, the Group indicated that it is important for local communities to realise future opportunities for economic development involving water resources. Te Rūnanga o Makaawhio also have a strong interest in commercial and industrial development in the FMU.

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

## 5.3.4. Enhance Scenic Values and Tourism

The SWFMU Group placed enhancing scenic values and tourism in a category of its own with a recommendation for special consideration by the RMC in terms of freshwater management. The economic value of freshwater to tourism must be prioritised in freshwater management planning; and appropriate consideration given to tourism in freshwater funding. The economic criteria used in the Freshwater Improvement Fund, and in other funding mechanisms, to identify vulnerable catchments or water bodies needing work, needs to include the tourism industry in South Westland and notably the glaciers and glacier towns. Tourism specific actions are also required in the regional plan.

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

## 5.4. Attributes and Targets to Achieve Outcomes and Objectives

In addition to identifying criteria or setting target attribute states to achieve the environmental outcomes and objectives identified for the four key priority areas above, the Council must also set target attribute states for all of the NPS-FM 2020 compulsory values. For attributes identified in Appendix 2A or 2B of the NPS-FM 2020, these target attributes must be set in the terms specified in that Appendix, e.g., an action plan is required for managing E. coli concentrations, and so on. For other attributes, which are not prescribed, targets must be set in a way that are appropriate for that specific attribute.

The SWFMU Group supports in principle the attributes prescribed under Appendix 2A or 2B of the current NPS-FM, where they are relevant to the SWFMU community and environment, provided that they do not create an impractical or onerous burden for members of the

community. For the SWFMU Group, practicality entails, amongst other, a test of reasonableness.

## **5.5. Proposed Priority Action Plans**

## 5.5.1. Action Plan for Water Quality Monitoring Programmes

The SWFMU Group expressed concern about insufficient water quality monitoring throughout the FMU and voiced a keen interest for more monitoring to be done by the Council.

As required in the national drinking water standards, the SWFMU Group believes the availability of safe drinking water for all New Zealanders, irrespective of where they live, is a fundamental requirement for public health; and a district council responsibility.

In the absence of resources, local community members expressed an interest in developing voluntary monitoring systems. Council staff outlined the types of tests and measures that can be used in monitoring water quality. One SWFMU Group member bought a water sampling kit and sampled water in a stream the Group was interested in. The results received were assessed by the Group. To support ongoing community monitoring, at the second workshop, Jonny Horrox, WCRC Science Team Leader, demonstrated water quality monitoring techniques in a stream near the Fox Glacier Community Hall.

Based on discussions with the FMU Group, getting a better understanding of the state of water quality in the FMU would be highly beneficial for the local community. A sufficient number of samples are required to account for variations in water quality over time. For example, clarity decreases during rainfall events, and temperature goes up around mid-afternoon.

The types of issues that can be investigated include:

- Nutrient enrichment, primarily from agriculture.
- Sedimentation associated with earthworks, stock access, and natural sources. These
  can all be measured on site.
- Changes in habitat due to earthworks, stock access, and natural processes, for example, aquatic bug surveys and temperature.
- Faecal contamination from stock, birds, and humans. E. coli testing is the surrogate test for this, but in order to meet lab accreditation, samples should be delivered to the lab within 24 hrs. Latency between sampling and analysis can be extended to 48 hours max, with acknowledgement of lab criteria.

Council staff proposed a voluntary water sampling plan for the local community and suggested several sites to monitor, and outlined the sampling frequency, and what and how to measure.

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

## 5.5.2. Action Plan for Managing Aguatic Plant Pests (Weeds)

The SWFMU Group expressed strong concern about aquatic plant pests in some lakes and rivers in the SWFMU.

To understand the issues more fully and what can be done about them, Taylor Blyth, WCRC Biosecurity Officer, presented to the Group at its second workshop on aquatic plant pests and biosecurity work.

Biosecurity surveys were undertaken in 2021 to look at plant communities in many West Coast lakes. A couple of lakes in the SWFMU were assessed.

The highly invasive oxygen weed, Lagarosiphon major (referred to as Lagarosiphon), is of particular concern to the SWFMU Group. Small plant fragments attached to boats and trailers, eel fishing nets, excavation machinery, and angling or duck shooting gear can spread Lagarosiphon easily. Attempts to eradicate Lagarosiphon from areas where it has become established are resource intensive. But early detection of invasive aquatic weed species before they become widespread will give a greater chance of success in pest plant management and will reduce the overall costs involved.

The SWFMU Group members expressed grave concern about boat ramps being a high-risk area for new infestations of aquatic pest plant species. Members discussed and explored various options to tackle the problem; and various scenarios, including the risks of 'doing nothing' and not carrying out work to combat infestation. The Group also considered funding implications, some of which were conveyed back to DOC following the February workshop for DOC support by the Group's DOC observer, Anya Kruszewski.

Weed eradication methods include using herbicide sprays, but very low suspended sediment levels are required so the herbicide can be effective. Aerial spraying is an option, but its consequences need to be known first and risk managed appropriately.

The Group was particularly concerned about the spread of weeds by boats going from infested lakes to unimpacted lakes. Members recommended installing signage at boat ramps alerting 'boaties' to clean their boats, and they also suggested setting aside areas where boat users can clean their boats to avoid the spread of pest plants.

The mouth of the Hall River is a priority for the SWFMU Group as it is choked with Lagarosiphon, and the location poses a high risk for contaminating boats that could spread weeds to other unaffected areas.

The Group suggested exploring opportunities for funding and upskilling the local community to undertake specialised work e.g., through extending the current Jobs for Nature fund.

Environmental outcomes, objectives and recommendations on this matter are included at the front of this report.

## 6. Outstanding Waterbodies

The NPS-FM 2020 provides that "the significant values of outstanding water bodies are [to be] protected" (Policy 8); and "Every regional council must identify outstanding water bodies (if present) within each FMU" (Part 3.8 (3) (d)). A two-step process is required; first is to identify 'outstanding water bodies' (OWBs), and second is to protect the significant values of OWBs.

The NPS-FM defines an "outstanding water body as a water body, or part of a water body, identified in a regional policy statement, a regional plan, or a water conservation order as having one or more outstanding values".

The SWFMU Group explored which waterbodies might be nominated for assessment as OWBs and examined why they might be OWBs. The Group was encouraged to consider the compulsory, must consider, and other values in the NPS-FM when selecting water bodies for assessment of outstanding status.

There was trepidation amongst the Group around nominating OWBs when it might lead to more regulations that could restrict economic activity within the SWFMU; and, as a consequence, have a negative effect on local communities. There is already a substantial proportion of land within the SWFMU that is protected under various pieces of legislation (DOC land, for instance).

The Group felt that additional restrictive regulatory protection, and more 'red tape', under a OWB framework was not necessary as existing protection for waterbodies is sufficient, water quality is good, and threats to South Westland's waterways are negligible. The view was that the implications of creating OWBs needs to be much clearer and not disguised as an additional or artificial barrier to trade, e.g., OWBs should not be used to hinder farming practices for the South Westland farming community. Instead, a balance must be struck between national park and world heritage status and the ability of local communities to live comfortably, securely, and in harmony with nature. The Group chose not to nominate any waterbodies for consideration as outstanding.

There are many water bodies in the SWFMU that are similar. The only thing that makes one different from another is that its name is more recognised. For example, there are over 2000 glaciers in the southern Alps but most people could only name two, and they are not the biggest, longest, oldest or newest.

## 7. Threatened Species

Consistent with the NPS-FM 2020, regional councils must identify the location of freshwater habitats of threatened species within each FMU, if present. "Threatened Species" are also a compulsory value described in the NPS-FM 2020 as "the extent to which an FMU or part of an FMU that supports a population of threatened species has the critical habitats and conditions necessary to support the presence, abundance, survival, and recovery of the threatened species. All the components of ecosystem health must be managed, as well as (if appropriate) specialised habitat or conditions needed for only part of the life cycle of the threatened species".

At the regional planning level, Schedule 7A of the Council's Regional Land and Water Plan lists freshwater habitats of threatened fish and bird species, but the information requires updating. Instream Consulting Ltd, led by Greg Burrell, a freshwater Ecologist, has been contracted to update Schedule 7A of the Land and Water Plan; and Greg presented his work to the SWFMU Group via zoom link. The SWFMU Group generally supports this project.

## **Appendix 1. The Science – Current Water Quality & Resource Use**

## Water takes in South Westland

The majority of resource consents for water takes by use in South Westland in 2018 are for drinking water (Figure 5); but they accounted for a relatively small water volume when compared to that required for hydroelectric power generation.

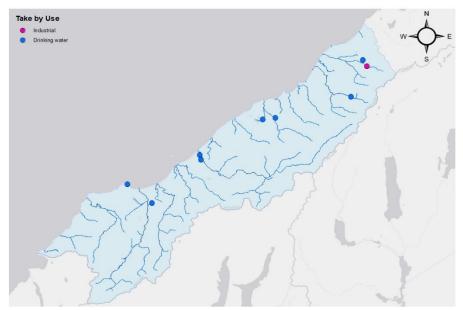


Figure 5: Consented groundwater takes by use type in the SWFMU, as at 2018

Figure 6 below shows consented groundwater takes by size in the South Westland FMU, as at 2018.

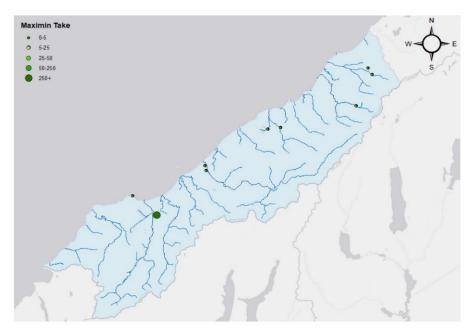


Figure 6: Consented groundwater takes by size in the SWFMU, as at 2018

The majority of consented takes in the South Westland FMU are from surface water rather than ground water (Figure 7).

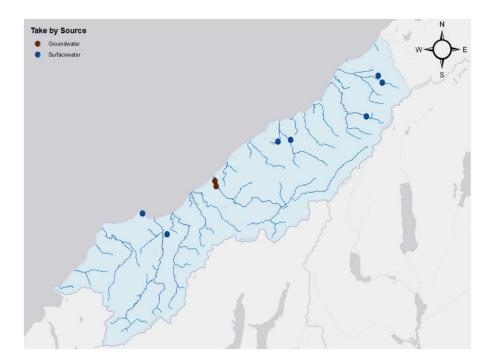


Figure 7: Consented take by source in the SWFMU, as at 2018

Overall, when compared to other FMUs on the West Coast, there are not many consented water takes in the SWFMU. This may reflect the relatively low level of land development in this FMU.

The SWFMU Group has no known issues regarding water takes, and no outcomes, objectives or recommended actions were put forward regarding them.

#### Lake and river health

There has traditionally been very little regular measurement of water quality in the SWFMU. NIWA has been testing water quality of the Haast River on a monthly basis since 1989, and its results form the most comprehensive river dataset in this FMU. Water quality in the Haast River has been high as indicated by the NPS-FM attribute scores for the Haast River (Figure 8). The macroinvertebrate score derived from the Quantitative Macroinvertebrate Community Index was the only attribute that scored below an A, possibly due to the high flows and the unstable nature of substrate in this large river.

	Nitrate-N	E. coli	Ammonia	Macroinvertebrates	Sediment	Phosphorus
Haast River	Α	Α	Α	В	A	A

Figure 8: NPS-FM attribute states for the Haast River, for the last 5 years up to 2021.

Few lakes in the SWFMU are monitored regularly. Some sampling was undertaken in 2009, and in 2021 (*in press*). Lakes Paringa and Moeraki rated well in terms of nutrient status (Figure 9). Chlorophyll (an indicator of phytoplankton biomass) was slightly elevated in Lake Paringa, and low in Moeraki.

The low levels of dissolved oxygen at the bottom of both lakes was a surprise. Neither lakes are subject to significant run-off from agriculture so natural causes seem likely for low lakebed oxygen levels. Low oxygen may be driven by a combination of factors including topography, substantial depth, natural sources of organic nitrogen and carbon, and biomass inputs from introduced plants like *Elodea canadensis* and *Lagarosiphon major*.

Levels of dissolved oxygen were below the NPS-FM bottom line, which means there is potentially a risk of nutrients being released from 'lakebed' sediments. However, no other measured attributes indicated poor lake water quality.

Lake Paringa is, however, infested by the highly invasive aquatic weed lagarosiphon. This has caused significant impact to ecological and recreational values, and poses a risk to other lakes if spread.

	Date	Ammonia	Total nitrogen	Total phosphorus	Chlorophyll	Dissolved oxygen at lake bottom
Lake Moeraki	2009	Α	Α	Α	Α	Α
Lake Moeraki	2021	Α	A	Α	A	D
Lake Paringa	2009	Α	Α	Α	В	D
Lake Paringa	2021	Α	Α	Α	В	D

Figure 9: NPS-FM attribute states for Lake Moeraki and Lake Paringa.

The historic lack of water quality monitoring throughout the SWFMU is due largely to a perceived lack of water quality issues in the area, and that the Council lacks the resources to cover this more remote part of the region. Agriculture tends to involve lower stocking rates throughout the catchment when compared to farmed areas in the north; and other than some small urban centres at Haast and Fox Glacier, settlements are typically small and sparse. There are a small number of tourist activities operating on the rivers and lakes.

Members of the SWFMU Group considered that water quality in the SWFMU should, for the most part, be good. However, the absence of adequate monitoring data leaves us unable to prove this by scientific means. These considerations are important when developing a framework for managing freshwater. The National Objectives Framework, or NOF, establishes the recognised framework for managing freshwater as per the NPSFM 2020.

# **Appendix 2. South Westland FMU Group Photo**



Anya Kruszewski; Jonny Horrox; Maurice Sullivan; Rowan Sullivan; Cllr Stuart Challenger (WCRC); Dave Friend; Catherine Montague; Teresa Thorp

Other Group members: Rob Wilson, Brenda Monk, Simon Cameron, Kirstin Sandri, Cllr Ryan Kennedy (WDC)

South Westland FMU Group Photo, 23 September 2021