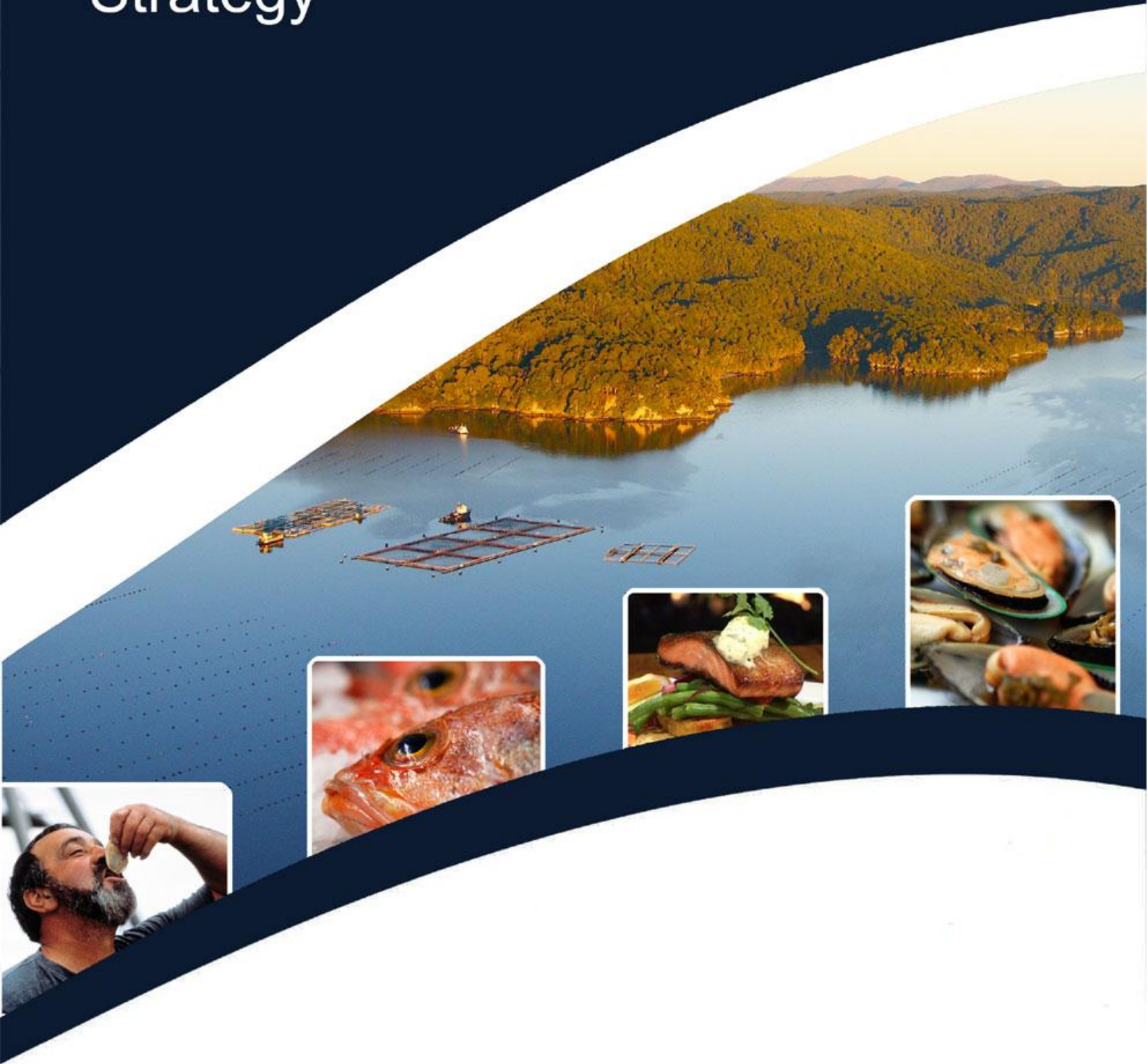


Southland Aquaculture Strategy



Foreword

Southland has a rich heritage of producing high quality food from the sea. The region's fishing industry is well established and is now complemented by an emerging aquaculture industry. Aquaculture is a "good fit" for Southland, as it requires high environmental standards and integrates well with the region's existing primary production focus and infrastructure. Properly managed, commercially successful aquaculture development has the potential to make a significant contribution to Southland's economic and social wellbeing.

However, investment in aquaculture is not straightforward – potential developers must contend with extensive consultation, regulation requirements¹ and spatial constraints, the rugged and often challenging southern environment and climate, and the needs and aspirations of myriad others who use and value our marine resources. Up-front costs can be high and returns uncertain.

This mix of opportunities and challenges has led to the preparation of a strategic, region-wide approach to aquaculture development in the form of the Southland Aquaculture Strategy. The aim is to provide high-level guidance on new aquaculture opportunities, allowing development to proceed in a planned, co-ordinated manner that integrates well with other uses and values. The Strategy gives all those with an interest in aquaculture development – whether marine or land-based – an outline of opportunities to investigate. It identifies practical ways in which some of the costs and risks of investing in aquaculture can be reduced on a region-wide basis. But, at the end of the day, investing in aquaculture is a private commercial decision and developers must weigh up all the risks and returns in comparison with other potential investments.

The Strategy has been prepared on behalf of Venture Southland with input from many people with a direct involvement or interest in establishing a sustainable, profitable aquaculture sector in Southland.

The purpose of the Southland Aquaculture Strategy is to provide all parties with an interest in aquaculture development with guidance on potential opportunities and risks, and to identify a set of practical actions to achieve the following four outcomes for aquaculture in Southland:

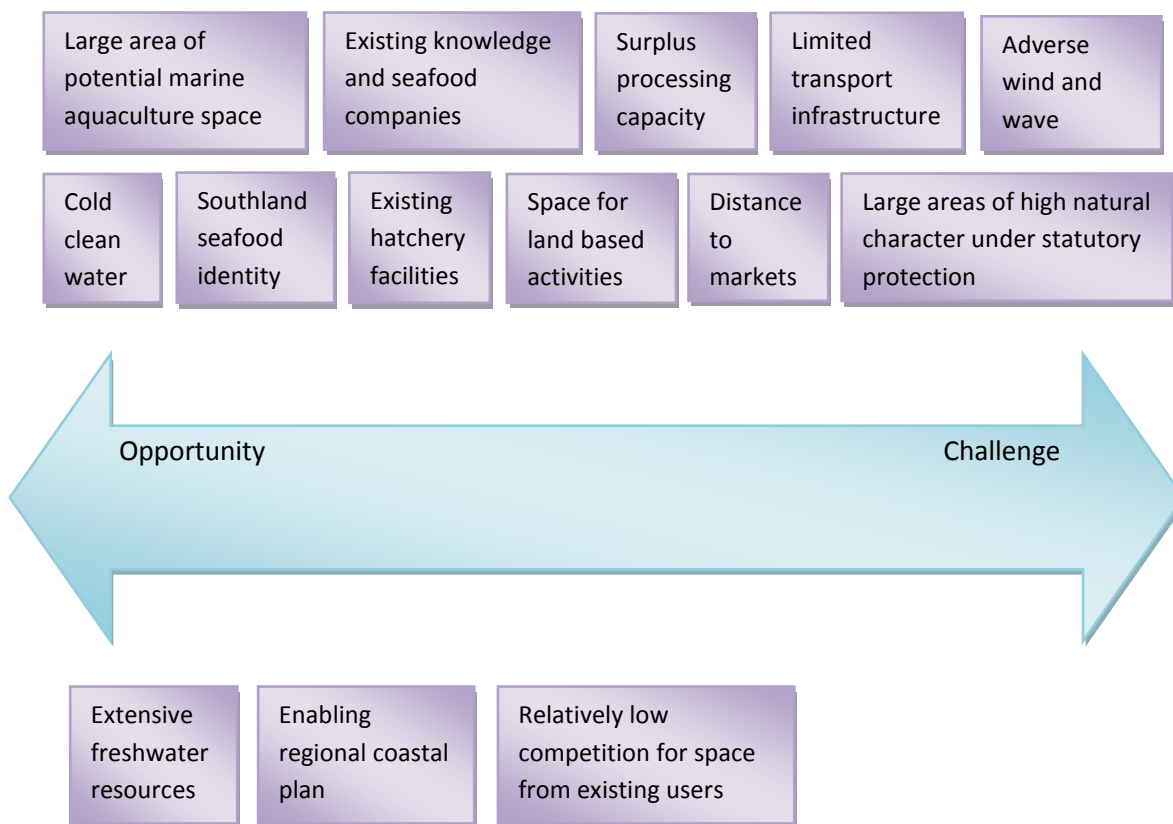
1. Optimal use of existing coastal space
2. Efficient access to new coastal space
3. Commercially successful development of new species, technology and products; and
4. Infrastructure and services that make Southland a desirable location for aquaculture.

¹ The Regional Coastal Plan adopts a flexible approach to aquaculture development in the Coastal Marine Area

Aquaculture in Southland

Southland has much to offer for aquaculture development – cold, clean water, plenty of space, and a well established seafood industry. But the region’s rugged climate and remoteness also bring challenges. **Diagram 1** identifies some of Southland’s more obvious environmental and socio-economic attributes for new aquaculture development.

Diagram 1: Southland’s attributes for aquaculture development



The southern environment

At 3,400 km, Southland’s coastline is the longest of any region in New Zealand. It extends from Fiordland in the west (Awarua Point) round the south coast to the Catlins in the east (Waiparau Head) and includes the coast of Stewart Island/Rakiura and islands nearby. Southland’s coastal waters lie in the Tasman Sea, Foveaux Strait and the Pacific Ocean. The coastal environment is diverse, with sheltered fiords, intertidal estuaries, exposed coasts and open water. Only a fraction of this space is currently used for aquaculture.

Located in the southern part of New Zealand, Southland experiences colder sea water temperatures than other regions; the average water temperature for Foveaux Strait is just 12.7° C. The region's low population and large areas of protected land ensure relatively high coastal water quality in most locations. The cold water is ideal for the farming of salmonid species, and creates an environment that is less prone to disease and subject to fewer algal bloom events than warmer regions.

The coastline is exposed to primary waves from Antarctica and the Southern Ocean. The south-facing coasts from Fiordland to the Catlins have the highest wave heights in mainland New Zealand, with mean significant wave heights of three to four metres creating engineering challenges for exposed sites.

The region's terrestrial environment is equally dramatic and varied. To the west, the almost entirely undeveloped terrain of Fiordland is dominated by mountains, fiords, glacial lakes and exceedingly high rainfall. East of the Waiau River, the Southland Plains include some of New Zealand's most fertile farmlands. The plains drain towards the south coast, where Stewart Island/Rakiura lies 30km south across Foveaux Strait.

The Southland region overflows with lakes and rivers – with almost 200 lakes and around 40 rivers providing ample opportunity for land based aquaculture. Water quality in a number of catchments is decreasing which may present a challenge for future development.² Four major river catchments extend over Southland: the Waiau, Aparima, Oreti and Maitai. The largest lakes are Lake Te Anau and Lake Manapouri in Fiordland. The Waiau catchment is important for the hydro power station at Manapouri.

The remoteness of Fiordland, Stewart Island/Rakiura and other lesser mountainous areas, together with the challenges of terrain and climate, have left large parts of Southland as wilderness areas and nearly 60% of the region is managed for conservation purposes. The two largest conservation areas are Fiordland National Park covering 1.26 million hectares and Rakiura National Park which covers 57,000 hectares of Stewart Island/Rakiura. The protection of the high natural character of these areas is of strong local, national and international interest. Although the national parks stop at the mean high water mark and mean high springs mark, respectively, the special status of the adjoining land influences management policies for the coastal waters. Lakes and rivers in National Parks are generally considered protected.

A resource-based economy

Southland is one of New Zealand's most sparsely populated regions. Invercargill, the region's main centre and seat of local government, makes up half of Southland's population with a population of 52,000. Concentration of settlement in small rural centres means that Southland's coastal areas are subject to less pressure from competing multiple uses than is typical in other parts of New Zealand. It also means that coastal land is less developed, providing potential for appropriate development of aquaculture facilities adjacent to the sea.

² <http://www.es.govt.nz/environment/monitoring-and-reporting/state-of-the-environment/water-2010/>

The region's economy is based on agriculture, fishing, forestry and to a lesser extent energy resources like coal and hydropower³. Along with the NZAS Aluminium Smelter at Tiwai Point, Southland has a strong primary production focus with the agriculture industry accounting for a significant proportion of the region's revenue and export receipts.

The main wild seafood products are blue cod, crayfish, paua, kina and oysters, with mixed inshore finfish stocks such as flatfish, rig, butterfish and stargazer making up the balance. The main port and processing facilities are at Bluff but fishing infrastructure is also found at smaller ports such as Riverton and Stewart Island. Eels from the region's short and long finned eel fishery are processed on the outskirts of Invercargill. All these activities have existing distribution channels to seafood markets domestically and internationally. There is potential for additional synergies between Southland's wild fisheries and new aquaculture development. Some sectors of the wild fishery are seasonal leaving surplus processing capacity out of the main season. The existing experienced work force and the strong Southland brand for high value seafood give aquaculture a head-start in the region.

Southland is at the end of the logistics chain for road transport and as a consequence transport forms a higher proportion of total business costs compared to other regions. However, Invercargill airport has an extended runway making it capable of freight links domestically, trans-Tasman and to other destinations. Fiordland and Stewart Island/Rakiura have exceedingly limited roading infrastructure, so any new aquaculture development in parts of these areas would need to rely on sea or air-based support.

Aquaculture requires a skilled workforce. Access to parallel skills in the seafood sector, a regional approach to attract skilled migrants and the credible track record in industry training that Southern Institute of Technology has each gives the region an advantage. Southland also has extensive, proven engineering and marine construction industries to assist with innovation and development of new technologies and an emerging reputation as a centre for high tech innovative industries.

New legislation, new opportunities

Clearly aquaculture development cannot happen in an unfettered way. Society has expectations of checks and balances to ensure that all development is environmentally sustainable and to manage competing interests for resources such as water or coastal space. Aquaculture is managed under a plethora of different Acts – the main ones being the Resource Management Act 1991 (RMA) and the Fisheries Act 1996. Until very recently, the legislation has created barriers to new aquaculture development in Southland and elsewhere in New Zealand. But in October 2011 new legislation came into effect, providing a more enabling regime for aquaculture.

Under the new laws, regional councils such as Environment Southland retain the primary role for regulating sustainable aquaculture development and issuing resource consents for aquaculture activities under the RMA, but the opportunities for central government involvement in council

³ http://en.wikipedia.org/wiki/Southland_Region - cite_note-slrgo-15

processes have been strengthened. Central government is also involved in assessing whether aquaculture development will result in an undue adverse effect on fishing under the Fisheries Act.

The aquaculture industry should be encouraged to take a proactive role to effect changes in the statutory planning frameworks.

In addition to the primary legislation, aquaculture development is influenced by other laws that operate in the marine environment, including conservation legislation and Treaty settlement legislation. Land-based fish farming is managed under the Freshwater Fish Farming Regulations.

Aquaculture development in Southland

The RMA provides for a hierarchy of policy and planning documents at national, regional and district level which form the framework for aquaculture development in Southland.

Anyone who is interested in marine aquaculture development should consult the Southland Regional Coastal Plan, 2008 (RCP), prepared by Environment Southland. Chapter 15 deals with marine farming and identifies areas where aquaculture may be consented and areas where it is prohibited. The prohibited areas are: the internal waters of Fiordland (Awarua Point to Puyseger Point); all marine reserves; Awarua Bay (east of Tiwai causeway); and parts of Stewart Island/Rakiura (Port Pegasus, Lords River, Port William northern end, and Paterson Inlet except for Big Glory Bay and the Salmon Farming Refuge Zone). Everywhere else in the region, aquaculture is possible provided a resource consent (coastal permit) is obtained. Aquaculture is classified as a non-complying activity in the Bluff Port Zone, and a discretionary activity in other possible locations. Consent applications are assessed on an effects-based case-by-case approach against the objectives and policies of the RCP.

Current resource consents for marine aquaculture are located in three areas.

1. **Big Glory Bay** is a small (approximately 12 km²) embayment of Paterson Inlet, Stewart Island/Rakiura. The 36 consents in the Bay collectively allow for the farming of bivalves, three salmon species, rock lobster and algae. However, current aquaculture activity in the Bay only consists of cage farming of king salmon (also known as Chinook salmon), and long line cultivation of green lipped mussels and flat oysters. Operators believe that the Bay is at carrying capacity in terms of both plankton supply for bivalves and nitrogen budget for salmon farming.
2. **Bluff Harbour** is a tidal estuary with a narrow entrance, high tidal flows, variable water clarity. Currently there are seven consented marine farm sites that collectively provide for the farming of bivalves, seaweed, rock lobster, kina, paua and sea snails. Most of the consents are currently unutilised, although trials have been undertaken for mussels and larger scale flat oyster farming.
3. **Ruapuke Island** is located on the eastern approaches to Foveaux Strait. A single paua marine farm is consented but not currently operational.

Although the region's current farm locations and range of species are relatively limited, there has been a history of aquaculture experimentation in Southland, starting in the early 1980s with the farming of various molluscs (oysters, scallops, green lipped mussels and blue mussels) and seaweeds in Big Glory Bay. In the early 1990s, marine farmers sought permission to farm seaweeds and molluscs in Bluff Harbour. There has also been interest in the farming potential of kina, cockles, paua, sea snails and lobsters. Other areas in which interest has been expressed include parts of Paterson Inlet.

Land based aquaculture in Southland developed around the use of hatcheries to produce spat either for aquaculture purposes, to enhance wild fisheries (as in paua) or for on growing to market size in the hatcheries. Hatcheries developed in Bluff and for a while on Stewart Island/Rakiura. There has also been some small scale experimental work on eel farming and other freshwater species such as koura (freshwater crayfish). Currently apart from some hatcheries in Bluff there is no commercial land-based aquaculture in Southland.

The Southland Regional Water Plan (2010) sets policies direction for the management of water within Southland, consent may be required under this plan for future land-based fish farming activities, where there may be effects water ecosystems.

Consents are required for activities such as:

- Taking and discharging water (freshwater).
- Taking coastal water from certain locations, and discharge of water to coastal waters (coastal water).

Consents may be required for

- Land-based fish farming where there is potential to effect water quality or it requires an abstraction then consent may be required under the water plan.
- Consents from relevant district council's may be required under their district plans.

Strategy Overview

The scope of this strategy focuses on aquaculture activities. Aquaculture activities include those undertaken for the purpose of the breeding, hatching, cultivating, rearing, or ongrowing of fish, aquatic life, seaweed or plants for harvest, under controlled conditions and in water, using facilities or structures.

The purpose of the Southland Aquaculture Strategy is to provide all parties with an interest in aquaculture development with guidance on potential opportunities and risks, and to identify a set of practical actions to achieve the following four outcomes for aquaculture in Southland:

1. Optimal use of existing coastal space;
2. Efficient access to new coastal space;
3. Commercially successful development of new species, technology and products; and
4. Infrastructure and services that make Southland a desirable location for aquaculture.

It is a “given” that environmental sustainability is at the heart of all aquaculture development in Southland. Not only does the RMA provide a framework for any adverse environmental effects to be avoided, remedied or mitigated, export markets and marine farmers themselves demand that aquaculture is undertaken in an environmentally sustainable manner in a clean environment.

Outcome 1 Optimal use of existing coastal space

Existing aquaculture in Big Glory Bay (Stewart Island/Rakiura) and Bluff Harbour forms the backbone of the Southland aquaculture industry and is a vital part of the region’s future. Most aquaculture consents were initially established under old marine farming legislation and have gone through several transitions as the law has changed over time. Environmental and societal pressures have also evolved during the life of these permits, as have aquaculture technologies. Some consented aquaculture space is not currently utilised and some may not be being used to its fullest value. Taking a fresh look at existing aquaculture in Southland will ensure that the space is being used as efficiently as possible and that any barriers to enhancing the value of existing aquaculture are identified and managed.

Outcome 2 Efficient access to new coastal space

Optimising the use of existing space is only part of the picture. The investigation and identification of appropriate new locations will assist in achieving significant growth and diversification of aquaculture in Southland. Access to new space will also improve the resilience of Southland’s aquaculture industry, as concentration of farms in confined areas such as Big Glory Bay and Bluff Harbour makes the sector more vulnerable to catastrophic environmental or disease

events.

Aquaculture – especially finfish farming – does not need a lot of space, but it does require space with the right qualities. However, sites with desirable attributes for aquaculture along the Southland coast are relatively limited: the region has extensive areas of high natural character in Fiordland and parts of Stewart Island/Rakiura, and in other areas exposure to the rugged southern oceanic climate creates challenges.

Obtaining access to new space through RMA plan change and/or consent processes is costly and time consuming. This means that commercially viable new development is likely to be either high volume (to get economies of scale) or high value. In either case there will be significant up-front investment cost. There are opportunities for the aquaculture industry to work with relevant organisations to identify new locations appropriate for development, to avoid costly and time consuming formal processes.

Outcome 3 **Commercially successful development of new species, technology and products**

To date, aquaculture in Southland has been based on three main species – king salmon (also known as Chinook salmon), green lipped mussels and flat oysters. But the aquaculture sector is innovative and there is significant potential for diversification and commercial development of new species, including species farmed in freshwater or land-based facilities.

Technological developments play an important role in the overall development strategy for Southland and, in relation to aquaculture, can help improve economic efficiency and remove barriers to development of new species or new areas. Similarly, innovative product development offers opportunities for increased revenue and new markets.

Outcome 4 **Infrastructure and services that make Southland a desirable location for aquaculture**

A successful aquaculture industry does not exist in isolation – it requires the support of infrastructure, such as transportation networks, port facilities and processing plants, and services such as a skilled workforce and access to research capacity.

The remainder of the Strategy sets out actions which contribute to achieving these four outcomes. Some important generic actions that support all four outcomes are described at the end of the Strategy. The actions fall into five main themes, as follows:

a. Reducing legislative and administrative barriers

Recent law changes have created a more enabling statutory environment for aquaculture, but it is still subject to a very complex set of laws and regulations, and many different

agencies are involved in approving new aquaculture development. This theme is about overcoming some of the regulatory hurdles.

b. Reducing investment risk and uncertainty

There will always be risks associated with aquaculture development – including environmental risks to be managed and commercial risks to be evaluated. The Strategy includes actions that can help reduce investment risks and costs at a region-wide level.

c. Future-proofing aquaculture development

The context in which aquaculture occurs is constantly changing – the physical and biological environment is dynamic, and society’s expectations of the performance of our food-producing sectors are also evolving, both locally and globally. This set of actions identifies some long-term trends that Southland can plan for right now.

d. Supporting integrated development of aquaculture; and

e. Building relationships to support sustainable aquaculture development

The final two sets of actions recognise that aquaculture occurs in an environment where there are other uses and values, and that successful aquaculture development needs to take account of these other uses and values in an integrated manner. In particular, the aspirations and responsibilities of Ngai Tahu, as tangata whenua of Southland, must be respected. Communication, information sharing, and relationship building are vital.

Outcome 1:

Optimal Use of Existing Coastal Space

Existing marine farmers require a combination of flexibility and certainty in order to enhance the value of their aquaculture investments and provide the best return to Southland. Flexibility is important to accommodate shifts to new technologies and high-value species and to enable fine-tuning to respond to new risks and opportunities. Certainty is important when it comes to re-consenting of existing farms, security of inputs such as ongoing access to spat, and environmental parameters such as water quality.

Reducing legislative and administrative barriers

The Southland Regional Coastal Plan provides for reasonable flexibility in the use of existing farms. It enables new species to be grown as a discretionary activity and does not prescribe or constrain particular technologies. However, the existing configuration of farms in Big Glory Bay may not be optimal, and the Fisheries Act and Maori Commercial Aquaculture Claims Settlement Act is not sufficiently flexible as to allow a re-alignment of farm sites⁴. Marine farmers have identified re-consenting (i.e., obtaining new consents for existing farms when their consents expire) as one of the main regulatory barriers to enhancing economic value. The law provides that an existing farmer is “first in the queue” when it comes to re-consenting, but the renewal process is costly and the uncertainty means that marine farms can lose asset value when the consents are about to expire.

Action 1.1 Work with appropriate regional and national organisations to achieve law changes to increase certainty and reduce costs for re-consenting

Law changes to reduce the costs of re-consenting were initially included in the amendments to aquaculture legislation in 2011, but were deferred for consideration in the wider RMA review. This provides an opportunity for interested parties to become involved in the law change, with the aim of achieving a more secure legislative environment for consent renewal.

Action 1.2 At a regional level, further increase certainty and reduce costs for re-consenting by:

- **As the opportunity arises, explicitly recognising new areas of aquaculture development in the regional coastal plan; and encouraging collaborative environmental monitoring where possible by consent holders in an area**

Identification of specific zones where aquaculture is considered to be an appropriate activity can make re-consenting more straightforward because the plan provides a mandate for aquaculture in those areas. Collaborative environmental monitoring by consent holders, such as is now occurring in Big Glory Bay, means that environmental information is collected efficiently and can help reduce the cost of re-consenting.

⁴ The RCP does allow for the reconfiguration of marine farms in Big Glory Bay, however there are other legislative requirements that need to be met if marine farms are going to shift to new locations. For example the UAE test under the Fisheries Act.

Action 1.3 Investigate options for re-configuring the location of current aquaculture consents within Big Glory Bay

The current configuration of Big Glory Bay farms may not be ideal for the mix of species farmed in the area. Without increasing the total consented area, it may be possible to increase the productivity and resilience of the farms and reduce environmental effects by relocating salmon farms that require deeper water and stronger current towards the mouth of the bay, with shellfish farms occupying sites further in. Any such re-arrangement would require the support of all consent holders through a facilitated process of negotiation and agreement. If agreed, industry can then work with Environment Southland to explore options to identify the most efficient mechanism for giving effect to appropriate re-location of consents within the Bay.

Reducing investment risk and uncertainty

Actions 1.1 and 1.2 seek to improve certainty as an aquaculture consent nears its expiry date. There are also some non-regulatory actions that can be taken to reduce the resulting investment risk. A further identified risk for aquaculture investment in Southland is the region's reliance on a single source of mussel spat (from Kaitaia). Transfer of spat to Southland from other areas such as Marlborough is prohibited by consent conditions originally intended to prevent the spread of Undaria. Although Undaria is now established in Southland's main aquaculture locations, the consent conditions persist because Undaria is a "pest" in the regional pest management strategy and an "unwanted organism" under the Biosecurity Act. Consideration could be given to investigating utilisation of pest and unwanted organism in the aquaculture industry development.

Action 1.4 Work with national and regional banking institutions to enhance the use of aquaculture consents as security for lending

The security of resource consents as a basis for investment and bank lending can be enhanced if banks are better informed about the attributes of consents. A package of measures can be developed, including briefing material and presentations to the New Zealand Bankers Association and Southland banks to help build the relationship between lenders and the Southland aquaculture sector, with the aim of improving the investment environment for aquaculture.

Action 1.5 Ensure that the upcoming review of the Southland Regional Pest Management Strategy enables a more flexible framework for the transfer of spat; and Review consent conditions on coastal permits for aquaculture to provide for diversity in sources of spat, while managing any relevant biosecurity risks

The regional pest management strategy is due for review. This provides an opportunity to better define and manage risks associated with Undaria in Southland. This action can be complemented by working with MAF Biosecurity to review the "unwanted organism" status of Undaria under the Biosecurity Act.

Generic actions 5.1 to 5.13 are also crucial for reducing investment risk and uncertainty for existing aquaculture development.

Outcome 2: Efficient Access to New Coastal Space

“New space” refers to coastal space outside existing resource consents for aquaculture activities. New space can be in areas either where the Regional Coastal Plan specifies that aquaculture is a discretionary or non-complying activity or where the Regional coastal plan prohibits aquaculture. Not all potential new space is equal – different types of aquaculture development require different environments. Constraints such as regulatory prohibitions, biodiversity values, the status of adjoining land, and other competing uses mean that the risks of obtaining access to new space will vary in different parts of the region.

Reducing legislative and administrative barriers

Environment Southland’s Regional Coastal Plan (RCP) provides an enabling and secure basis for aquaculture development. It adopts a zoning approach, allowing aquaculture as a discretionary activity in most areas (subject to controls) and prohibiting it in areas of high natural character and significant marine ecosystems. Southland is the only region which has coastal occupation charges specified in its RCP. Although marine farmers may not always appreciate it, the charging regime is a plus for the region because it creates certainty and legitimacy for aquaculture developers as well as providing a modest funding source for coastal planning. Although the Southland RCP provides a good starting point, there are some changes that could be investigated in order to reduce investment risks and ensure efficient access to new space for aquaculture development.

Action 2.1 **Make explicit provision in the Regional Coastal Plan for experimental aquaculture**

Experimental aquaculture involves novel species or technologies. Because it is small scale and short-term, experimental aquaculture doesn’t always provide a commercial return. However, under the RMA an application to undertake experimental aquaculture is treated the same way as a full-scale aquaculture development. Providing several small areas in the RCP where experimental aquaculture can be undertaken using a more streamlined consenting process will reduce barriers to innovation and provide a carefully controlled “testing ground” that can later lead to viable commercial-scale development.

Action 2.2 **Clarify Regional Coastal Plan provisions for allocation of space in any newly-opened aquaculture areas**

Uncertainty about allocation of new aquaculture space can act as a barrier to investment. Companies are reluctant to invest in a private plan change or contribute information to council plan change processes if it is unclear how new space will be allocated. This risk can be reduced through council policies, reflected in any subsequent plan changes, about allocation of aquaculture space. For example, weighted attribute tendering may provide a good balance between economically efficient allocations and specified desirable attributes of competing development proposals

Action 2.3 Retain regional control of planning options, while adopting the most efficient plan change mechanism to establish new areas for aquaculture

In order to proceed efficiently, plan changes to provide additional areas for aquaculture need to be developed with local engagement and support. The law now provides for a range of options for progressing plan changes – including private plan changes, council-initiated plan changes and Ministerial plan changes made by regulation. Retaining control over these processes within Southland will enhance local community consultation and facilitate a regional consensus. Once local dialogue about any plan changes has been undertaken, then the most efficient route for progressing that plan change can be chosen. This may include working with central government using the new RMA planning tools.

Reducing investment risk and uncertainty

Diagram 2 identifies some of the potential sites for new aquaculture development in Southland and places them on a spectrum from “Likely” to “Unlikely”. This ranking is indicative only and is intended to provide some preliminary guidance for the development of new space. The Diagram is based on an assessment of the attributes of the area and its potential suitability for different types of aquaculture as well as the risks associated with obtaining access to the site. Areas where aquaculture is currently a discretionary or non-complying activity are highlighted in green, and areas where aquaculture is currently prohibited are highlighted in orange. Any aquaculture development in the orange areas will first require a change to the Regional Coastal Plan.

While some of these areas may be pursued by individual aquaculture developers, others hold benefit from a pre-development region-wide approach. This will be both more efficient and will help to ensure that new aquaculture development is effectively integrated with other uses and values.

Action 2.4 Invest at a regional level in constraints mapping and environmental baseline monitoring in areas of significant potential for aquaculture development

Lack of baseline information on environmental attributes and existing uses and values creates a significant cost barrier for aquaculture consent and plan change applications. The cost can be reduced by adopting a region-wide approach to filling information gaps in areas with potential for development such as Bluff Harbour and Paterson Inlet.

Action 2.5 Establish a multi-sector spatial planning process to identify new aquaculture space in Paterson Inlet

Paterson Inlet has significant potential for aquaculture development. In particular, the area immediately outside the current Big Glory Bay farming zone has deeper water and good current, making it suitable for finfish farming and other parts of the Inlet are suitable for bivalve aquaculture. The clear and sheltered waters of the Inlet also make it desirable for other uses (tourism, fishing and potential new uses). The Inlet has high natural character, high biodiversity values and is largely surrounded by National Park. It hosts a marine reserve and a mataitai reserve. The optimal mix of these activities (which are all managed under different legislation) will be achieved only through a comprehensive, multi-sector approach that respects the aspirations of all who use and value Paterson Inlet. A similar approach has been successfully adopted by the Guardians of Fiordland. The aim is to develop an integrated spatial plan encompassing additional aquaculture areas alongside other established and new uses and values.

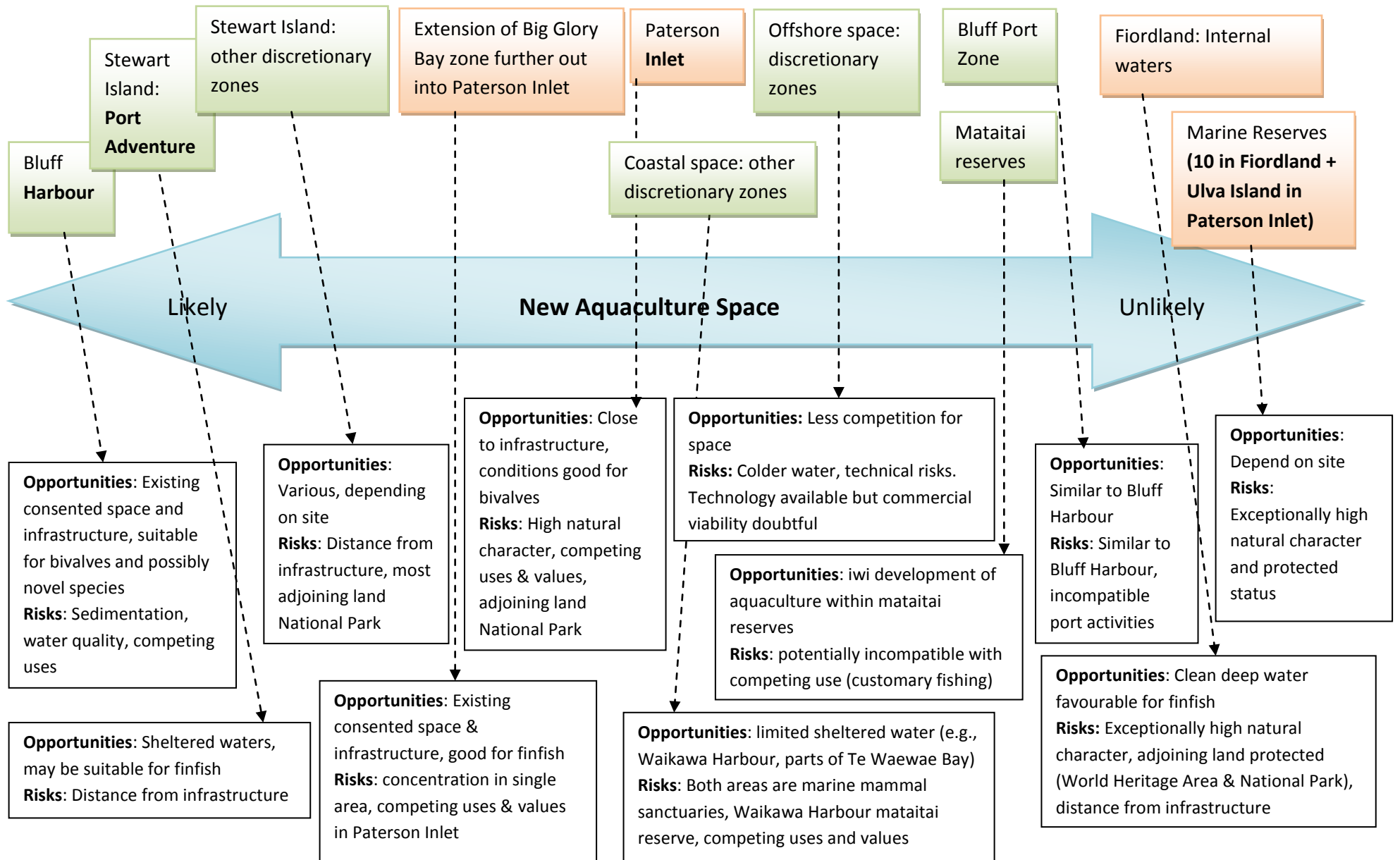
Action 2.6

Facilitate early dialogue and negotiated agreements with quota owners

Under recent law changes, assessment of undue adverse effects on fishing occurs at the end of the process for approving new aquaculture development. However, there is opportunity for early discussions with affected quota owners and for negotiated agreements to be reached. Addressing fishing-related impacts early in the process can increase certainty for the aquaculture developer, and simplify both the RMA consent process and any subsequent assessment of undue adverse effects on fishing under the Fisheries Act. Negotiated solutions can provide a more efficient path for aquaculture development as they are subject to less litigation and help develop constructive relationships among marine users. Environment Regulatory bodies can provide appropriate information and contacts to facilitate the dialogue.

Generic actions 5.1 to 5.13 are also crucial for reducing investment risk and uncertainty for new aquaculture development.

Diagram 2: Spectrum of opportunities for development of new aquaculture space



Outcome 3:

New species, technologies and products

This outcome focuses on innovation as an important driver of commercially successful aquaculture development.

“**New species**” are those that have the potential to be successfully developed commercially in Southland. Although there is a lot of discussion of potential new species, it is generally accepted that New Zealand’s aquaculture industry is not overlooking any major commercialisation opportunities. New species must have an environmental, value or productivity advantage to displace existing farmed species and they must be more cost effective than wild fisheries. Development of new farmed species is typically an uncertain, high cost and high risk venture. The primary barriers are economic, particularly the ability to demonstrate significant comparative returns on the large investments required and the identification of market opportunities before significant investment into species development occurs.

However there are some actions that can be investigated in order to reduce investment risks and enhance opportunities for aquaculture development. **Diagram 3** provides a preliminary assessment of the potential of selected new aquaculture species in Southland. The diagram is indicative only and intended to provide a framework and some preliminary guidance for the development of new species.

The development of **new technologies** can help remove barriers to economically efficient aquaculture growth through improvements in engineering, processing and farm husbandry. Innovative technologies, such as farm structures with low visual impact, can reduce the environmental footprint of aquaculture and open up new areas for development. Expansion of aquaculture into offshore coastal waters or land-based ventures will not be possible without the development of new, commercially feasible technologies. In particular, the absence of cost effective circulatory systems and cascade technology have been a perceived barrier to the development of land based aquaculture.

New products are also part of the mix of opportunities for maximising the value of aquaculture. Derivative products from aquaculture can increase the economic return of farming activities and reduce costs of disposal of waste and provision of landfill facilities. Examples include: the extraction of pharmaceutical and nutraceutical compounds from finfish and shellfish produce and waste; mineralogical products from shell by-product and extraction of compounds with emulsifying and stabilising properties from seaweeds such as alginates. There is also potential to create wealth by development of value added products.

Reducing legislative and administrative barriers

The development of some new aquaculture species, such as exotic species and species managed under the Quota Management System, face additional regulatory barriers.

Action 3.1 Work with like-minded organisations to remove barriers to land and marine based farming of Salmonid species

Salmonid species include char, trout and salmon. Sea cage farming of king salmon occurs in Southland and other places in the South Island. Other species of salmon (Atlantic and Sockeye) have been introduced historically into New Zealand. Residual stocks remain but they are considered to be genetically weak and unsuited for commercial development. New genetic stock needs to be sourced.

Rainbow trout is a key production species in Australia and well suited to marine cage farming in Southland. Trout have been introduced to New Zealand and hatcheries are already established for the recreational fishery. Currently trout farming is prohibited by law in New Zealand, but the rationale for retaining the ban is weak and there is opportunity for it to be reviewed.

Action 3.2 Work with like-minded organisations to remove barriers to sustainable seaweed harvest and farming in Southland

The Southland coast supports a diverse array of seaweed species. The high water quality means that seaweed products are likely to be of premium quality. The commercial wild harvest of several species of potential interest for development is prohibited under the Fisheries Act. This restricts the experimental development of products and markets as a precursor to the development of marine farming on an appropriate scale.

Undaria is an introduced seaweed species that has become established in Southland. It is classified as an “unwanted organism” under the Biosecurity Act and there are stringent conditions placed on its farming and harvest. Currently Southland is not an area where marine farming of Undaria is allowed.

Action 3.3 Participate in the upcoming review of the Freshwater Fish Farming Regulations

All land-based aquaculture, whether of freshwater or marine species, is managed under these regulations. The regulations are outdated and create unnecessary regulatory barriers to land-based aquaculture. A review is planned for 2012, and this provides an opportunity to establish a more enabling environment for land-based aquaculture.

Action 3.4 Engage with quota owners to enable the farming of quota management species where there are barriers to accessing juveniles

Commercial access to many wild fisheries is controlled through the quota management system. Quota owners have an exclusive right to the commercial use of these fish stocks. Access to juveniles for aquaculture purposes can be achieved through dialogue leading to negotiated solutions between quota owners and aquaculture interests.

Reducing investment risk and uncertainty

This set of actions is designed to address the fact that new development often requires major investment with deferred and uncertain returns, creating significant barriers to innovations in species, technologies and products.

Action 3.5 Assist aquaculture developers to access funding for development and uptake of new species and technologies by:

- **providing guidance on public and private funding sources;**

- **working with the banking sector to increase understanding of aquaculture investment conditions; and**
- **facilitating the development of networks across complementary industry sectors**

As aquaculture is an emerging industry there is limited expertise within New Zealand investment institutions to assess applications for funding, and developers may require overseas investment partners. These barriers can be reduced by providing guidance on funding sources and working more closely with the banking sector (see also Action 1.4). Establishing linkages and networks of complementary industry sectors – such as engineering expertise and high tech enterprises – in the region and beyond can also facilitate the development and uptake of new technologies.

Action 3.6 Participate in national priority setting for public good funded aquaculture research so that investment is made into species, technologies and products of relevance to Southland; and

Develop networks and linkages to research and development expertise to provide a platform for innovation

The government invests in aquaculture research through public good science and other funding streams. The MAF aquaculture unit provides strategic input into the preferred direction of aquaculture research to the government. It is important that Southland has input to the setting of research priorities in order to increase the relevance of public good research for the region.

Direct linkages and good dialogue between science providers, tertiary education institutes, aquaculture interests and regional authorities can help build research capacity for the region and improve the relevance of science delivered.

Action 3.7 Monitor developments and performance of new technologies for aquaculture in open water and offshore space

A challenge for aquaculture development in Southland is commercially viable engineering solutions for aquaculture in open waters with high wave heights. Open water aquaculture consents have been granted in other parts of New Zealand but as yet no farming infrastructure is in place. The sharing of information between regions is an efficient way of avoiding duplicated effort and enhancing investment certainty.

Action 3.8 Facilitate regional partnerships to optimise use of waste products

Waste product from aquaculture is organic in nature. The strong primary production focus of the region suggests that there may be opportunities to examine the processing of waste material into new products such as fertilizer, feed or additives. In contrast there may be opportunities to examine the use of waste from other primary producers for aquaculture, for example the development of fishmeal alternatives (see Action 5.12).

Generic actions 5.1 to 5.13 are also important for reducing investment risk and uncertainty in the development of new species, technologies and products.

Diagram 3: Indicative assessment of possible new aquaculture species for Southland

Species	Conversion rate			Proven technology			Demand outlook			Regulatory barriers			Suited to Southland			Value			
	High	med	low	yes	trial	no	strong	med	unknown	strong	some	none	good	limited	poor	high	med	low	unknown
Atlantic salmon	✓			✓			✓				✓		✓			✓			
Sockeye salmon	✓			✓			✓				✓		✓			✓			
Ocean trout	✓			✓			✓			✓			✓			✓			
Kingfish	✓			✓			✓					✓			✓	✓	✓		
Snapper		✓		✓			✓					✓			✓	✓	✓		
Groper		✓				✓	✓					✓		✓		✓			
Perch		✓		✓			✓					✓	✓				✓		
Glass eels				✓			✓			✓			✓			✓			
Butterfish		✓				✓		✓			✓		✓				✓		
Flatfish		✓		✓				✓				✓	✓				✓		
Blue mussels	✓			✓			✓					✓	✓						✓
Scallops		✓		✓			✓					✓		✓			✓		
Rock lobster			✓		✓		✓			✓			✓			✓			
Paua			✓	✓			✓					✓	✓			✓			
Kina			?		✓				✓		✓		✓						✓
Sea cucumber			?		✓				✓		✓		✓						?
Undaria	✓			✓					✓	✓			✓						✓
Bladder kelp	✓			✓					✓		✓		✓						✓
Porphyra	✓			✓					✓		✓		✓						✓

Outcome 4: Infrastructure and services

Aquaculture requires a skilled labour force and the support of land based and coastal infrastructure. Infrastructure requirements include appropriate port or coastal facilities for the servicing of farms, processing facilities (space, clean water and reliable power supply) and efficient transport of product to processing and markets. Aquaculture also needs to be protected from the impacts of inappropriate infrastructure development such as waste water discharges and land based runoff.

If infrastructure and labour supply cannot keep pace with aquaculture development then they will create constraints and economic disincentives for further investment. However, the assumption in this Strategy is that a successful aquaculture sector will create a demand for improved services and infrastructure, particularly once a critical mass is established between aquaculture and Southland's other food-producing sectors.

Action 4.1 **Work with training providers to develop and retain a skilled workforce to support aquaculture growth**

Any expansion of aquaculture will require a labour supply with appropriate skills. The collective regional aquaculture interests should be proactive in identifying their training and education requirements to guide investment in training development by training providers and Tertiary Institutions at both national and regional levels. The zero fees policy of Southland Institute of Technology could work to attract students from other regions. This action complements Aquaculture New Zealand's planned focus on developing a partnership between the aquaculture industry, universities and research institutes.

Action 4.2 **Identify and plan for new infrastructure requirements to enable aquaculture potential to be realised**

The evolving needs of aquaculture need to be identified, (and where practical, integrated with the requirements of other food-producing sectors) and explicitly recognised in regional infrastructure planning.

Action 4.3 **Investigate infrastructure synergies or other opportunities with related industries such as fishing**

Fishing is an established and significant industry in Southland. There may be opportunity to develop synergies in a number of areas such as use of spare processing capacity, co-funding of water quality testing programmes and labour force development.

Generic actions

This group of actions applies to each of the Strategy's four outcomes.

Future-proofing aquaculture development

Future-proofing aquaculture development in Southland is all about planning now for any future emerging risks or opportunities. That will ensure that Southland's aquaculture sector is resilient and is able to adapt to changing regional and global conditions.

Action 5.1 **Ensure that regional and district planning documents recognise that sustainable aquaculture needs high water quality**

Southland is fortunate that most of its coastal waters and many of its lakes are in a natural state. However, water quality in lowland rivers and streams is not as good as it could be. If water quality deteriorates further (for example as a result of land management practices in urban and rural areas) the region may lose some of its natural advantages for aquaculture development. The New Zealand Coastal Policy Statement specifies that development in the coastal environment must not make water quality unfit for aquaculture activities in areas approved for that purpose. Parties with an interest in aquaculture should therefore participate in all policy and planning processes relevant to maintaining and improving the region's water quality.

Action 5.2 **Work with Aquaculture New Zealand to adopt an environmental auditing and certification system for Southland aquaculture, building on existing industry Environmental Codes of Practice**

Consumers in export markets are increasingly demanding independent certification of environmental credentials to inform their food purchases. Certification can add a price premium, and in the longer term, may even be a requirement for access to some markets. At present, there is no single globally-recognised certifier of aquaculture products but environmental auditing and certification is a current focus for Aquaculture New Zealand, and Southland initiatives can aligned with this initiative.

Action 5.3 **Work with Ministry of Agriculture and Forestry Aquaculture Unit and Aquaculture New Zealand to promote global best practice in dealing with pests, diseases and other biosecurity risks**

New Zealand aquaculture has relatively few pests and diseases compared to other countries and Southland, because of its cooler waters, is particularly lucky in this respect. But there is no room for complacency – biosecurity risks can never be reduced to zero, and it is inevitable that pests and diseases will arrive in Southland's waters. Industry Environmental Codes of Practice help establish best practice and must continue to evolve as new risks emerge. Industry best practice can also help inform consent conditions for new aquaculture developments.

Action 5.4 **Work with Aquaculture New Zealand to build animal welfare considerations into industry best practice guidelines for finfish farming; and Participate in the Ministry of Agriculture and Forestry’s review of animal welfare strategy and legislation.**

The boundary between acceptable and unacceptable treatment of animals is always evolving and to date animal welfare issues have received little attention in New Zealand’s aquaculture sector. Overseas, it’s a different story, especially for finfish farming. Developing a best practice approach now will put the aquaculture sector on the front foot when responding to this emerging issue and will help maintain market access. The Ministry of Agriculture and Forestry is currently developing a national strategy for New Zealand’s animal welfare system and reviewing animal welfare legislation. This provides an opportunity to ensure that animal welfare issues associated with aquaculture are well catered for in policy and legislation.

Action 5.5 **Investigate opportunities for alternative fish-food protein sources in Southland**

Reliance of the finfish aquaculture sector on imported food sources, particularly food sources with a high proportion of fish meal, is a commercial risk and a potential market access risk for finfish farming. As a food-producing region, there may be opportunities in Southland to develop alternative locally-sourced fish food products and thereby reduce reliance on imported food sources.

Action 5.6 **Raise awareness of potential climate change effects in relation to aquaculture, and use a risk assessment approach to account for the impacts of predicated climate change when planning for new aquaculture development**

Predictions for Southland’s future climate suggest that it should get warmer, wetter, and stormier. Increases in average water temperature may affect the species that can be farmed and may also increase pest and disease risk. More frequent flooding may result in increased sedimentation in estuarine and coastal areas, and could make some rivers less suitable for aquaculture. An increase in the intensity of severe storms, storm surge levels and strong winds will affect swell and wave conditions, while predicted sea level rise may increase rates of coastal erosion and have implications for the location of farms. Any actions which help make Southland’s aquaculture sector more diverse and sustainable (e.g., additional areas, new species, biosecurity practice) will also make the sector more resilient to the impacts of climate change.

Supporting integrated development of aquaculture

Aquaculture development will be most successful where it is well integrated with other uses and values of the Southland region. Actions elsewhere in the Strategy also address the need for integrated development (eg., actions 2.5 and 2.6).

Action 5.7 **Involve aquaculture sector representatives in regional conservation processes including:**

- **review of the Southland/West Otago Conservation Management Strategy**
- **regional Marine Protected Area planning processes**

Policy and planning under conservation legislation can have a significant influence on

opportunities for sustainable aquaculture development. In the absence of an integrated, region-wide approach, conflicting messages are sent to developers and unnecessary costs and delays can result. The Conservation Management Strategy influences the Department of Conservation's administrative roles under conservation legislation and its advocacy in RMA processes. The current review of the Strategy provides an opportunity to present a balanced position on aquaculture development, while still meeting conservation objectives. The regional Marine Protected Areas planning process is a form of spatial planning of relevance to future aquaculture opportunities.

Building relationships to support sustainable aquaculture development

The final group of actions in the Strategy is the most crucial. Aquaculture development occurs within a regional and local community setting. Space used for aquaculture, whether on land or sea, is subject to a range of other existing uses and values. This set of actions is intended to build the relationships that will help improve understanding and public perception of aquaculture. Without understanding and support from local communities and other users of shared environments, existing aquaculture activities will struggle to maintain legitimacy, and new aquaculture development will face significant extra hurdles and costs.

Action 5.8 Establish a Regional Aquaculture Forum to act as a steering group for the implementation of the Strategy

The Forum provides a central focus for various groups with an interest in Southland aquaculture development. It is an open and inclusive mechanism for Venture Southland to facilitate the exchange of information and inform the implementation of the Strategy. With so many different agencies involved in regulating different aspects of aquaculture, the Forum also provides an important co-ordination role. Membership will include representatives of the aquaculture sector, Ngai Tahu, regional and local agencies (Venture Southland, Environment Southland, district and city councils), government agencies (Ministry of Agriculture and Forestry, Department of Conservation), providers of support services (research institutes, training providers), and other users of the marine environment (fishing, tourism, environmental organisations etc.).

Action 5.9 Ensure the early and active engagement of Ngai Tahu in all aspects of aquaculture development in Southland

Ngai Tahu will be a key player in Southland's aquaculture development. The iwi already has significant seafood industry interests and will be allocated new aquaculture assets (equivalent to 20% of all new space) as part of the settlement of Maori commercial aquaculture claims. Separately, the Ngai Tahu Settlement provides a right to purchase 10% of available authorisations for coastal space if these are offered by tender. Ngai Tahu also has extensive customary interests and responsibilities in relation to marine, freshwater and terrestrial resources in Southland. In addition to providing for Ngai Tahu involvement in the implementation of this Strategy, all potential aquaculture developers are encouraged to engage with Ngai Tahu, through Te Runanga o Ngai Tahu and the relevant local runanga, at the earliest opportunity.

Action 5.10 Ensure the early engagement with the Fiordland Marine Guardians in any aspect of aquaculture development in the Fiordland Marine Area

The Fiordland Marine Guardians is a statutory advisory body established to ensure continued community input into the management of the Fiordland marine environment

They provide strategic advice to government agencies on the current and future management framework for Fiordland's marine environment. For example they must be consulted on any changes to the Regional Coastal Plan. All potential aquaculture developers should be encouraged to engage with the Fiordland Marine Guardians at the earliest opportunity.

Action 5.11 Work with key national bodies to align regional and national policies and initiatives, and to maximise Southland's access to national support

The Aquaculture Unit in MAF is the Government's main adviser on aquaculture. The Unit is a repository of skills and resources that Southland can access in order to support the implementation of the Strategy. Aquaculture New Zealand is the aquaculture sector's representative body. It also has access to skills and resources that can assist in implementing the Southland Aquaculture Strategy.

Action 5.12 Enhance relationships between the aquaculture sector and other Southland regional food producing sectors

Southland is a food producing region, and there are opportunities for the food producing sectors to work together to identify and progress regional initiatives such as branding and market development, establishing critical mass to attract research and training providers or improved infrastructure services. Particularly in the marine environment, there are opportunities for synergies to be identified between the fishing and aquaculture sectors, and for any potential conflicts relating to the use of marine space to be resolved through discussion at an early stage.

Action 5.13 Use the release of the Southland Aquaculture Strategy as an opportunity to improve public understanding of aquaculture

There are opportunities to improve community understanding and support for the Aquaculture sector by using informed communication. The launch of this Strategy could be used as a starting point to connect to the public. Informative media based on accurate information should be developed around any current or emerging initiatives. Aquaculture New Zealand has the responsibility of developing a national Aquaculture Communications Strategy and could be a source of assistance.

Appendix 1



***Summary and analysis of the regulatory framework for
aquaculture in Southland***

A background report for the Southland Aquaculture Strategy

Prepared by Fathom for Venture Southland

20 February 2012

Overview

On 1 October 2011 new aquaculture legislation came into effect. These reforms made changes to the primary legislation governing aquaculture – i.e., the Resource Management Act 1991 (RMA), the Fisheries Act 1996, the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004 and the Māori Commercial Aquaculture Claims Settlement Act 2004. The aim of the reforms was to provide a more enabling regime for aquaculture.

Under the reforms, regional councils retain the primary role for planning for aquaculture development and issuing resource consents under the RMA, but the opportunities for central government involvement in council processes have been strengthened. Central government is also involved in assessing whether aquaculture development will result in an undue adverse effect on fishing under the Fisheries Act.

In addition to the primary legislation, aquaculture development is influenced by other laws that operate in the marine environment, including conservation legislation (for example, the Marine Mammals Protection Act 1978 and the Marine Reserves Act 1971) and settlement legislation (for example, the Marine and Coastal Area Act 2011 and the Ngai Tahu Claims Settlement Act 1998). Freshwater fish farming is managed under the Freshwater Fish Farming Regulations 1983.

The RMA provides for a hierarchy of policy and planning documents at national, regional and district level which establish the framework for aquaculture development (e.g., the New Zealand Coastal Policy Statement, the Southland Regional Coastal Plan and District Plans for Southland District, Gore District and Invercargill City). The Conservation Act also provides for a hierarchy of planning documents that affect the Department of Conservation's (DOC's) activities and advocacy with respect to aquaculture development. These include Conservation Management Strategies and other management plans (e.g., for the Fiordland and Rakiura national parks).

1. Roles and responsibilities

- **Minister responsible for Aquaculture**
Provides Government leadership on aquaculture and has powers under the RMA to intervene in regional council planning and consenting processes in relation to aquaculture.
- **Aquaculture Unit in the Ministry of Agriculture and Forestry (MAF)**
Is the Government's main advisor on aquaculture and is responsible for developing and implementing the National Aquaculture Strategy and Action Plan.
- **Ministry of Agriculture and Forestry (formerly the Ministry of Fisheries)**
Makes "aquaculture decisions" under the Fisheries Act 1996 (i.e., assessing whether an aquaculture development will have an undue adverse effect on fishing), administers the registration system for all fish farms, and works with councils to ensure that matters related to adverse effects on fishing and fisheries resources are addressed in consent processes.
- **Minister of Conservation**
Approves regional coastal plans (including plan changes relating to aquaculture), has powers

to approve alternative RMA allocation tools in the coastal marine area, and is also responsible for decision making under conservation legislation.

- **Department of Conservation**
Provides advice to the Minister of Conservation various matters under the RMA, including whether a regional coastal plan should be approved, and is responsible for the New Zealand Coastal Policy Statement. Under the Conservation Act, the Department has a conservation advocacy role (which may be exercised in RMA consent and planning processes); responsibilities relating to fresh water fisheries management; and responsibility for granting concessions for commercial uses in the conservation estate (also note independent advisory role of **Southland Conservation Board** on various matters under conservation legislation).
- **Environment Southland** (the brand name of Southland Regional Council)
Has primary responsibility for aquaculture planning and consenting in Southland, including: allocating coastal space, administrating existing coastal permits, assessing and granting coastal permit applications for aquaculture, including assessing the impact of a proposed aquaculture activity on fishing and fisheries resources. Also responsible for activities on the beds of lakes and rivers and for biosecurity at a regional level.
- **Invercargill City Council, Southland District Council and Gore District Council**
Are responsible, through provisions in district plans, for planning and consenting for land-based aquaculture.
- **Environmental Protection Authority**
Administers consent and planning processes where an application is determined to be of national significance and is being considered by a Board of Inquiry.
- **Fiordland Marine Guardians**
Provide advice to management agencies on a range of matters relevant to aquaculture within the Fiordland Marine Area, including fisheries management, biosecurity, sustainable management, and marine preservation and protection.

Challenge	<i>Multiple agencies with responsibilities for aquaculture can create barriers for development and conflicting objectives</i>
Opportunity	<i>Strategy provides opportunity to improve co-ordination; MAF Aquaculture Unit has national-level co-ordination role and resources that Southland can tap into</i>

2. Legislation

2.1 Resource Management Act 1991

The reforms of 2011 have to a large extent “normalised” aquaculture under the RMA. The statutory prohibition on aquaculture development outside Aquaculture Management Areas (AMAs) that had been in place since 2004 has been removed and, as a result, aquaculture is now treated much the same as any other development in the coastal marine area. In other words, a developer can apply

for a resource consent for aquaculture activities anywhere in the coastal marine area, so long as aquaculture is not identified as a “prohibited activity” in the relevant regional coastal plan. The consent application is then assessed subject to the provisions of the relevant plan. Councils can still identify areas where aquaculture activities cannot occur (as Southland has done), and include provisions in their regional coastal plans to manage aquaculture. If a developer wishes to undertake aquaculture activities in an area where aquaculture is prohibited, a plan change can be applied for concurrently with a resource consent.

However, in order to ensure that demand for coastal space for aquaculture can be adequately managed in a timely manner, the RMA now enables central government to make various interventions in council planning processes. Most of these interventions can be initiated at the request of the relevant council. The Minister responsible for Aquaculture can recommend changes to regional coastal plans in relation to aquaculture management (these plan changes are implemented by regulation) and can direct that a council not receive aquaculture applications for up to one year, pending demand management provisions being put in place. The Minister of Conservation can approve alternative allocation tools in the coastal marine area (this power applies to all activities that require occupation of coastal space) and can recommend that a proposed allocation proceed or not proceed in order to preserve the Crown’s ability to give effect to Government policy (e.g., in relation to Treaty settlements).

Some changes have also been made to streamline consenting processes and enhance the characteristics of consents for aquaculture. In particular coastal permits for aquaculture now have a minimum term of 20 years (unless a shorter term is requested by the applicant or is required to manage effects). Permits lapse after three years if the consent is not used. Existing marine farm consent holders have priority over other applications when they apply for their consents to continue operating (including species changes if in the same space).

Challenge	<i>In regions with insufficient controls in their coastal plans, the reforms may create problems with uncontrolled development; alternatively some regions may have plans which unnecessarily restrict aquaculture even though statutory prohibitions have been removed (Southland, however, is relatively well placed – see discussion below)</i>
Opportunity	<i>The new planning tools provide opportunities to insert more sophisticated spatial planning mechanisms into coastal plans to deal with situations where demand is anticipated to be high. Some of these tools enable plan changes to be made more efficiently or quickly. Southland may wish to take advantage of these new approaches.</i>

2.2 Fisheries Act 1996

Every new application for aquaculture activities must undergo a “UAE assessment” (formally known as an “**aquaculture decision**”) in which MAF determines whether the activity will have an undue adverse effect on fishing. The Ministry makes this decision after a resource consent has been granted, although much of information gathering and analysis occurs concurrently with the consent process. The outcomes of the UAE assessment are as follows:

- If there is no UAE, then aquaculture activities can proceed as provided in the resource consent;
- If there is a UAE on customary fishing or recreational fishing (referred to as a “reservation”), then aquaculture cannot proceed in the area subject to the reservation;
- If there is a UAE on commercial fishing, then aquaculture cannot proceed in the area of the reservation unless either a negotiated agreement is registered with the affected quota owners (an “**aquaculture agreement**”) or the applicant compensates affected quota owners following a compulsory arbitration process. Applicants also have the option of negotiating an early “**pre-request aquaculture agreement**” with affected quota owners, thereby bypassing the need for the Ministry to carry out a UAE assessment in relation to commercial fishing.

The Fisheries Act also sets out provisions for the **fish farmer register** and for **harvestable spat** (being spat of specified species which, if found on a marine farm, can be harvested by the farmer). Harvestable spat species are listed in Schedule 8A of the Act and include the planktonic stages of kina, several mollusc species (including green lipped mussel and dredge oysters) and a number of seaweed species.

Challenge	<i>If not adequately addressed, UAE issues can delay aquaculture development through prolonged and costly litigation and dispute; The limited number of species identified as “harvestable spat” may create barriers to access to juveniles for aquaculture</i>
Opportunity	<i>Aquaculture development will proceed more smoothly where fishing issues are addressed early on in the process – i.e., where councils address fishing impacts in planning and consenting decisions and where applicants discuss fishing impacts with mandated fishing representatives. A regional preference for negotiated solutions should result in less litigation, and a stronger basis for harmonious co-development.</i>

2.3 Aquaculture Reform (Repeals and Transitional Provisions) Act 2004

This technical Act sets out how various categories of existing consents for aquaculture that were granted under previous legislative regimes are to transition into the new regime. It also sets out how applications in train and the time of the reform period are to be processed.

2.4 Maori Commercial Aquaculture Claims Settlement Act 2004

The 2004 aquaculture law reforms provided for contemporary Maori commercial aquaculture claims to be settled by allocating authorisations for 20% of AMAs to iwi. The 2011 reforms retain the basic settlement obligation (20% of “new space”) but establish a new delivery mechanism through regional agreements or, failing that, through a default option. Regional agreements will be negotiated between the Crown and iwi organisations – Ngai Tahu in the case of Southland – and may include space, cash, or anything else that is agreed to. Negotiated settlements may be based on anticipated new aquaculture development in the region over a period of time. For Southland, a regional agreement must be negotiated by 1 October 2014, or within two years after the receipt of the first aquaculture consent application after 1 October 2011, whichever is later.

In order to ensure that while the agreements are being negotiated iwi do not miss out on the best development opportunities in a region, the Minister Responsible for Aquaculture is able to pre-emptively gazette space in the coastal marine area to meet settlement obligations. Within these gazetted “aquaculture settlement areas”, authorisations will be created giving iwi the exclusive right to apply for aquaculture consents in that space. If regional agreements are not reached in the appropriate time frame, the default settlement option involves the use of authorisations in the gazetted areas or a financial equivalent.

The settlement also has an impact on regional councils’ planning for aquaculture development. If a council’s regional coastal plan or proposed plan contains rules relating to allocation of authorisations for coastal space, the Minister of Conservation may direct the council to provide 20% of the authorisations as settlement assets. This means that regional councils will need to consider the 20% allocation for the settlement during their marine spatial planning.

Challenge	<i>The settlement obligations may add cost and complexity for councils in relation to coastal planning for aquaculture; The gazettal of aquaculture settlement areas prevents non-settlement aquaculture development in those areas</i>
Opportunity	<i>Iwi are already significantly involved in aquaculture and seafood industries, so the settlement provides a strong basis for further collaborative development</i>

2.5 Marine and Coastal Area (Takutai Moana) Act 2011

This Act repeals the Foreshore and Seabed Act 2004 and restores the ability for customary rights to the marine and coastal area to be determined by the Courts. It confirms public rights of access, navigation and fishing, and recognises three new types of customary rights and interests in the coastal marine area. Two of these new types of rights have implications for aquaculture development, as follows.

A **protected customary right** is a right to carry out an activity which has been undertaken since 1840 and continues to be undertaken in accordance with tikanga (e.g., the collection of stones or launching of waka). Although commercial aquaculture is excluded from the scope of protected customary rights, aquaculture development may be affected as the protected customary rights holder must give written approval for any consent application that may have “more than minor” adverse effects on the exercise of the right. While existing aquaculture activities are exempt from this “approval power” it may affect consent applications for new aquaculture development and other industry activities (new or existing) that require a resource consent (e.g., moorings, discharge permits from processing facilities or privately owned infrastructure such as wharves).

Customary marine title is a new form of title to marine space. The applicant group must hold the area in accordance with tikanga and have exclusively used and occupied it from 1840 without substantial interruption. If granted, customary marine title may affect aquaculture development three main ways:

- Identified **wahi tapu** in the customary title area may be subject to access restrictions and prohibitions which override the general public rights of access, navigation and fishing;
- The customary marine title holder can prepare a **planning document** which is incorporated into regional coastal plans and influences the management of aquaculture and associated activities that require consents (wharves, slipways, moorings etc);
- In most cases a resource consent applicant will have to obtain permission from the title holder before the consent can commence. This is referred to as the **RMA permission right**. Certain “accommodated activities” are exempt from the permission right, including all existing aquaculture, the re-consenting of existing aquaculture, and “accommodated infrastructure” (wharf facilities etc). Activities of significance to aquaculture development which are not exempt include: new aquaculture developments, the re-consenting of existing privately owned industry infrastructure, and new privately owned industry infrastructure.

Challenge	<i>The granting of protected customary rights or customary marine title can in theory have significant implications for aquaculture development – in practice, however, the implications of any protected customary rights are likely to be relatively minor (as these activities are currently being undertaken) and the statutory threshold for customary title is high</i>
Opportunity	<i>Aquaculture developers should be encouraged to liaise at an early stage with Ngai Tahu iwi and hapu; Organisations with an interest in aquaculture development should keep a watching brief on applications under the MACA Act and involve themselves in those processes, where appropriate</i>

2.6 Ngai Tahu Claims Settlement Act 1998

The provisions of the Ngai Tahu settlement that are of most potential relevance to aquaculture development in Southland are:

- The Crown is required to consult Ngai Tahu over policy decisions relating to taonga fish species, and to recognise and provide for the association of Ngai Tahu with the taonga fish species under the Fisheries Act. The species are: sea tulip, common shrimp, giant bully, Canterbury mudfish, common smelt, torrentfish, giant kokopu, pipi, cockle, various surfclams, tuatua, and mudsnails; and
- Ngai Tahu have preferential rights to purchase 10% of available authorisations in the coastal marine area if these are offered by tender under the RMA.

The Act also lists a number of “non-commercially harvested species”, but the operative regulatory provisions relating to these species were revoked in 2001 (as a result, it appears that there is no regulatory or statutory prohibition on commercial harvest). The species include freshwater mussels, southern lamprey, karengo (*Porphyra columbina* and *Ulva spp*), bull kelp, toheroa, and freshwater crayfish.

Challenge	<i>The commercial use in aquaculture of species acknowledged in the Ngai Tahu settlement requires an extra layer of consideration.</i>
Opportunity	<i>The settlement of historic Treaty claims provides a level of certainty which is currently lacking in some other regions.</i>

2.7 Conservation legislation

Conservation legislation that may influence aquaculture development in Southland includes:

- The **Marine Mammals Protection Act 1978** – provides for the protection and management of marine mammals by the Department of Conservation and for the establishment of marine mammal sanctuaries in which various controls can be imposed. Measures taken under this Act and the Wildlife Act may influence aquaculture development though DOC advocacy in response to consent applications (see below for list of marine mammal sanctuaries in Southland);
- The **Wildlife Act 1953** – provides for the protection and management of certain marine species such as seabirds and specified marine wildlife (primarily certain corals, hydrozoa, various species of sharks, skates and rays, giant grouper and spotted black grouper);
- The **Marine Reserves Act 1971** – sets aside marine reserves for the purpose of “preserving them in their natural state as the habitat of marine life for scientific study”. A marine reserve cannot be declared over a marine farm. The Act has for the last 10 years been in the process of being amended to modernise it, extend its scope and focus on biodiversity protection (see below for list of marine reserves in Southland);
- The **Conservation Act 1987** – among other matters, establishes a hierarchy of management planning documents that influence DOC’s activities in relation to its statutory conservation responsibilities. It also contains a regime for the management of freshwater fisheries. Most relevant to freshwater aquaculture development are provisions controlling the transfer or release of live aquatic life into freshwater and restrictions on the possession of certain freshwater fish (grass carp and silver carp). The Act provides that “no person shall establish, manage, or operate a fish farm for trout”. Any commercial aquaculture activities on DOC land or waters managed by DOC require a concession granted under this Act.

Challenge	<i>Conflicting regional objectives can arise, particularly if conservation and sustainable use planning and decision-making regimes are not well integrated, which creates an uncertain environment for aquaculture development; The status of certain conservation areas – e.g., marine mammal sanctuaries or marine reserves – may create spatial constraints on new aquaculture development; The statutory prohibition of trout farming is a significant barrier</i>
Opportunity	<i>The Strategy can enable Southland to better integrate matters that affect aquaculture across different planning frameworks – including through the establishment of common goals and constructive relationships</i>

2.8 Other Legislation

The **Hazardous Substances and New Organisms Act** 1996 provides the framework for importing new species into New Zealand. It is administered by the Environmental Protection Authority.

The **Biosecurity Act** 1993 provides the framework for managing the accidental introduction of unwanted organisms and the control or eradication of pests that become established in New Zealand. Various bodies have powers under the Act, primarily MAF and regional councils in relation to aquatic pests. The Act provides for national and regional pest management strategies to be developed.

The seaweed *Undaria* has been declared a pest under the Act so permission is required to harvest or farm it. Current Government policy, set out in the **Undaria Commercial Use Policy** (2010), allows farming in selected heavily infested areas only (none of which are in Southland).

The **Fiordland (Te Moana o Atawhenua) Marine Management Act** 2005 establishes the Fiordland Marine Area which extends from Awarua Point (north of Milford Sound / Piopiotahi) along the 12 nautical mile territorial sea limit (excluding the area around Solander Island) to Sand Hill Point (western edge of Te Waewae Bay). The Act recognises Fiordland's local, national, and international importance, unique marine environment, distinctive biological diversity, and outstanding landscape and cultural heritage. It establishes the Fiordland Marine Guardians, whose role is to provide advice to management agencies on fisheries management, biosecurity, sustainable management, and marine preservation and protection.

Challenge	<i>As a result of historical experience with importation and subsequent escape or release of new aquatic species, the HSNO Act establishes high thresholds for introduction of new species. This means that aquaculture development is best directed towards species which are already present in New Zealand; The status of <i>Undaria</i> under the Biosecurity Act is a barrier to use of this species for aquaculture in Southland</i>
Opportunity	<i>The Fiordland Marine Guardians provide a model for multi-sector marine planning that could be applied elsewhere in the region</i>

3. National Policy

3.1 New Zealand Coastal Policy Statement (2010)

The NZCPS is a national policy statement under the RMA. It has a direct influence on aquaculture development in several ways. Regional policy statements, regional plans and district plans must give effect to the NZCPS and councils are required to amend their planning documents to give effect to it. Consent authorities must have regard to any relevant provisions of the NZCPS.

All of the objectives and policies in the NZCPS are of some relevance to aquaculture, particularly as the NZCPS promotes an integrated approach to management of the coastal environment. **Policy 8**

applies specifically to aquaculture. It encourages a planned approach to aquaculture development (through making provision in plans for aquaculture activities in appropriate places), and recognises the need to consider high water quality and associated land-based facilities.

Policy 12 requires policy statements and plans to provide for control of activities that might release or spread harmful aquatic organisms, including contaminated structures, discharge of material from maintenance activities (e.g., for moorings or jetties) and establishment and relocation of aquaculture equipment and stock.

Other relevant policies relate to: the use of a precautionary approach; integrated management and co-ordinated control of activities; avoiding adverse effect on conservation lands or waters (e.g., marine reserves, marine mammal sanctuaries); promoting efficient use of occupied coastal space; protecting indigenous biodiversity and preservation of natural character (especially in areas of high natural character).

Challenge	<i>Some of the NZCPS policies are open to interpretation in a manner that could create a barrier for aquaculture development.</i>
Opportunity	<i>The NZCPS recognises the economic contribution of aquaculture and encourages a planned approach to aquaculture development; NZCPS provisions can also be used to promote control of activities that result in degraded water quality.</i>

3.2 Aquaculture Industry growth strategies

The previous industry representative body for aquaculture (the Aquaculture Council) developed a New Zealand Aquaculture Strategy in 2006, which has since been updated by its replacement industry body (Aquaculture New Zealand) in the Aquaculture Growth Strategy Phase II. Both strategies have the goal of a sales target of \$1 billion for the aquaculture sector by 2025.

Phase I – Pathway to 2011 2006-2010	Phase II – Dynamic Change 2011 to 2015	Phase III – Enhanced Value 2016 to 2025
<p>Building blocks A new sector organisation Strong government partnership Strong stakeholder partnerships Facilitating investment through enabling legislative framework Maori aquaculture settlement</p> <p>Underpinned by Environmental sustainability Public understanding</p> <p>Supported with Opportunities for innovation education</p>	<p>Accelerating Growth Profitability a central theme Increased focus on investment through implementation of new law Accelerating growth phase in market development Remarkable innovations Education</p> <p>Underpinned by Environmental stewardship and sustainability Partnering with Maori/iwi</p> <p>Supported with Strong sector organisation Strong stakeholder partnerships Strong government partnerships Increased public understanding</p>	<p>Continuing Momentum Continued focus on investment Sector led market innovations Sector led R&D programmes Strong Maori success Exciting developments in education Strong public perception of value World leading environmental framework</p> <p>Supported with Strong sector organisation Strong stakeholder partnerships Strong government partnerships</p>

Actions of potential relevance to Southland include:

- Aquaculture New Zealand will develop a regional capability
- The Research Strategy will focus on two Primary Growth Partnership projects on (1) Finfish development (Kingfish, Hapuka); and (2) High value derivatives
- A new component of the Strategy will be tertiary education with a focus on a partnership between Industry, Universities and Research Institutes
- For environmental performance, there will be a focus on environmental auditing and certification, building on the Environmental Codes of Practice.

Opportunity

Opportunity for Southland to align with national industry priorities and increased regional capacity in industry organisations.

3.3 National Aquaculture Strategy and Action Plan (in development)

The Government (through the MAF Aquaculture Unit) is developing a National Aquaculture Strategy and Action Plan. The strategy, when completed, will establish the Government's pathway to helping the aquaculture industry unlock the potential economic growth of the aquaculture sector, both marine and land based. It will identify the Government's objectives for the aquaculture sector and include a work programme across Government that will give effect to those objectives.

The strategy is scheduled to be published in early 2012.

Opportunity

*Regional organisations with an interest in aquaculture development should get involved in the development of the National Strategy.
The regional Aquaculture Strategy will enable Southland to be well placed to take advantage of national opportunities.*

3.4 Marine Protected Areas Policy

The Marine Protected Areas Policy, administered jointly by DOC and MAF, adopts a regional planning approach to the identification of representative areas of marine biodiversity, and their protection through either marine reserves or other regulations. MPAs may act as spatial constraints on new aquaculture development. The policy is currently on hold and under review, but Southland was set to start the planning process immediately prior to the current review. (Note that the moratorium on new marine reserves under the Fiordland Marine Management Act expires in April 2012.)

Challenge

MPA planning is a form of spatial planning, but is not well linked to other spatial planning initiatives such as regional coastal plans

Opportunity

Organisations with an interest in aquaculture development should involve themselves in any regional MPA planning processes

4. Regulations

4.1 Freshwater Fish Farming Regulations 1983

These regulations, made under the Fisheries Act, provide the framework for land-based fish farming of freshwater or marine species (all appropriate RMA consents such as discharge permits are still required). Anyone wishing to establish or operate any fish farm must have a fish farm licence issued by the MAF. Only species approved in the regulations may be farmed. The regulations also cover the sale and possession of fish, transfer of fish (for instance, from a hatchery to a farm), and disease control. The Government has announced its intention to review the regulations in 2012.

Challenge	<i>The regulations are out-dated and cumbersome, adding unnecessary costs to land-based aquaculture</i>
Opportunity	<i>The review should result in a more efficient regulatory framework for freshwater aquaculture</i>

4.2 Food safety regulations for bivalve molluscan shellfish

Bivalve molluscan shellfish (BMS) include oysters and mussels. The growth and harvest of BMS for commercial purposes on marine or land-based farms or from the wild is subject to the **Animal Products (Regulated Control Scheme—Bivalve Molluscan Shellfish) Regulations 2006** and the Animal Products (Specifications for Bivalve Molluscan Shellfish) Notice 2006. All commercially grown or harvested BMS must come from a shellfish growing area that is classified for harvest for human consumption. New farmers can establish their own or join an existing area. The programme is managed by the New Zealand Food Safety Authority (NZFSA), in cooperation with the District Health Board Public Health Units and the industry. Classified growing areas in Southland are Big Glory Bay and Foveaux Strait.

Challenge	<i>The costs of establishing new classified growing areas may create a barrier to new aquaculture development</i>
Opportunity	<i>A collaborative approach between parties looking to establish a new growing area, or join an existing area, can reduce the costs of entry</i>

5. Regional and local frameworks

5.1 Southland Regional Policy Statement

The Regional Policy Statement became operative in December 1997 and is currently being reviewed. It contains general policies relating to resource management issues in the Region, and a number of aquaculture specific policies, including:

- Policy 13.19, Provide for aquaculture in the Regional Coastal Plan (sets out a framework for the regional coastal plan)
- Policy 13.20, Remove the moratorium imposed by the Minister of Fisheries, which prohibits marine farming in the waters of Stewart Island except for Big Glory Bay. (This policy has been superseded by the zoning approach now adopted in the regional coastal plan)
- Policy 13.21, Provide for the establishment of refuge areas.

Opportunity

The current review of the RPS provides an opportunity to insert policies that support the sustainable development of aquaculture in an integrated manner in Southland.

5.2 Southland Regional Coastal Plan

The Southland regional coastal plan was approved by the Minister of Conservation and made operative in September 2008. **Chapter 15** deals with marine farming. The plan adopts a zoning approach as follows:

- Aquaculture is prohibited in:
 - Internal waters of Fiordland (Awarua Point to Puyseger Point)
 - Marine reserves
 - Awarua Bay (east of Tiwai causeway)
 - Stewart Island (Port Pegasus, Lords River, Port William northern end, Paterson Inlet except Big Glory Bay and the Salmon Farming Refuge Zone)
- Aquaculture is non-complying in the Bluff Port Zone
- Aquaculture is a discretionary activity everywhere else.

Consent applications are assessed on a merit-based case-by-case approach against the policies of the plan. Current consent holders have priority if they want to change species or technologies, and the change of species is a discretionary activity. A refuge area for salmon farms is provided if temporary relocation is required (e.g., for algal blooms). Relocation to the refuge area adjacent to Big Glory Bay is a permitted activity.

Other relevant provisions include rules relating to discharges and deposition:

- Discharge of seawater from holding tanks of live marine species is a permitted or restricted discretionary activity;
- Discharge of dead farmed marine organisms is permitted away from the shore and internal waters, otherwise discretionary;
- Discharge of waste from land-based marine species processing factories is discretionary;
- Discharge of fauna health products or feeding of nutrients is discretionary; and
- Deposition of uneaten feed and fish waste, or deposition of the farmed species or other waste products is a discretionary activity.

Various policies and rules apply in relation to occupation, structures (including removal of redundant or dilapidated structures), wharves and port facilities. The plan provides for **coastal occupation charges** for coastal permits authorising occupation of Crown land in the coastal marine area. Money received from the charging regime is used to promote the sustainable management of Southland's

coastal marine area. Marine farming is subject to coastal occupation charges of \$425 per annum (the standard charge for all commercial activities). There are some exceptions - activities related to the exercise of any Treaty rights or settlement rights; and Marine Farming Act 1971 leases and licences applied for or granted prior to 8 May 1991 (unless subsequent legislation provides for charging).

The Southland Regional Council is of the opinion that **coastal tendering** is a useful option to address competition for space between marine farming applicants (but the plan contains no specific tendering provisions).

Opportunity	<i>The Southland regional coastal plan's marine farming provisions are relatively new, making Southland well-placed with respect to recent aquaculture law reforms; The plan adopts a zoning approach, which provides certainty for applicants; The plan provides good flexibility for changing technologies or species; The coastal occupation charging regime (unique in NZ) also provides additional certainty, as this is likely to become a significant and controversial issue nationally</i>
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5.3 Other relevant regional plans

Land-based aquaculture requires resource consents for any discharges (into freshwater or coastal water) and any taking of water. Aquaculture in rivers or lakes requires consents for structures on lake or river beds. The relevant planning document is the Southland Regional Water Plan. The majority of the Plan was approved and made operative in January 2010, but parts are still being amended and consulted on. The Plan does not contain specific provisions relating to land-based fish farming.

5.4 District Plans

There are three districts in the Southland region – Invercargill City, Gore District and Southland District. District Plans are the primary document for management of land use and development within the Districts, and therefore control land-based aquaculture development. District plans also contain provisions for managing activities on the surface of lakes and rivers. In the case of all three councils, aquaculture development is controlled under the general land use planning provisions (i.e., no specific aquaculture policies exist). Invercargill and Southland are currently reviewing their plans.

5.5 Southland Regional Development Strategy

Venture Southland has prepared a Regional Strategy for Development (2006-2016). Some of the key themes relevant to aquaculture development include:

- promoting opportunities for diversification of economic activity, employment and business growth in Southland;
- the increasing importance of Southland as a quality, authentic tourist destination;
- developing and maintaining a skilled workforce;
- encouraging good and cost-effective transport networks (given the remote location); and
- promoting the positive aspects of Southland through regional branding.

Opportunity	<i>The region-wide approach to development allows alignment and synergies across strategies for various sectors (tourism, transport etc)</i>
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5.6 Mainland Southland/West Otago Conservation Management Strategy

The Conservation Management Strategy (CMS) was approved in July 1998 and is currently under review. It influences DOC's administrative roles under the Conservation Act and its advocacy in RMA processes. Those preparing regional and district plans under the Resource Management Act must have regard to any relevant CMS.

The CMS advocates a precautionary approach to the introduction of new species for marine farming and seeks a ban on farming any new species with the potential for colonising freshwater systems. For freshwater fish farming, the CMS contains guidance on concessions for taking of freshwater fish.

Challenge	<i>The CMS presents aquaculture as a threat rather than an opportunity</i>
Opportunity	<i>The current review of the CMS provides an opportunity to present a more balanced position on aquaculture development. Organisations with an interest in aquaculture should participate in the review in order to achieve an integrated regional approach</i>

6. Special measures for Fiordland

6.1 South West New Zealand World Heritage Area

The Te Wāhipounamu – South West New Zealand World Heritage Area was established in 1990. World heritage areas are designated under the World Heritage Convention because of their outstanding universal value. World heritage status does not affect the underlying protective status for which the land is held under New Zealand law, but it does place an obligation on the host nation to “take appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage”.

While the waters in the fiords are not part of the World Heritage Area (or the Fiordland National Park), the UNESCO World Heritage Committee noted that the fiords are an integral part of the National Park and it welcomed initiatives by New Zealand authorities to bring the waters of the fiords under the control of Fiordland National Park. Although at present there are legislative constraints in doing this, DOC is actively advocating to ensure there is integrated management between the management agencies responsible for the marine environment adjoining Fiordland National Park.

6.2 Fiordland National Park

Fiordland National Park is the largest in New Zealand. Its boundaries encompass all of the islands along the Fiordland coast, and all the lakes and rivers within the park boundaries, but not the waters of the fiords (the boundary follows mean high water mark).

Fiordland National Park is administered and managed by DOC under the National Parks Act 1980, the General Policy for National Parks adopted by the New Zealand Conservation Authority, the Fiordland National Park management plan and Fiordland National Park bylaws. The Park Management Plan sets out DOC's overall management intentions for 2007-2017 and is intended to guide all interested parties when considering future uses of the Park. Objectives and actions relevant to potential aquaculture development within the park include:

- Advocate to protect the values of the World Heritage Area. In particular, advocate to ensure integrated management of the marine areas adjoining this world heritage area to support the values of the area;
- Ensure that the freshwater systems within Fiordland National Park maintain their unique, intact, high-quality nature through active management and advocacy; and
- Seek the protection of inshore marine waters adjoining Fiordland National Park.

Challenge

Even though the waters of the fiords are not within the national park, DOC's management provisions for Fiordland national park and its World Heritage Area status create an extremely high barrier for aquaculture development within the internal marine waters of Fiordland.

7. Special measures for Stewart Island

7.1 Stewart Island/Rakiura Conservation Management Strategy

Stewart Island has its own CMS which sets out DOC's management approach for the period 2011-2021. The CMS recognises that marine farming provides "a leverage point for environmental protection due to its requirement for clean water and the threat posed by introduced organisms". However, it also notes that the national and international significance of some areas of Stewart Island means that any structure or development is likely to detract from important natural values. It identifies Port Pegasus and Paterson Inlet (excluding Big Glory Bay) as two particularly important areas which contain significant landscape and ecological values, are relatively large and free from structures, and border largely unmodified terrestrial landscapes.

According to the CMS, DOC will advocate that inlets within the Stewart Island/Rakiura CMS area including Paterson Inlet (excluding Big Glory Bay), Port William, Port Adventure and Port Pegasus remain free of marine farming structures and marine farming activities. The Department will advocate for a precautionary approach for proposals to introduce new species for marine and freshwater farming.

7.2 Rakiura National Park

Rakiura National Park opened in 2002. It covers about 85 percent of Stewart Island, including many offshore islands along with the Freshwater River and Upper Rakeahua River. The coastal water surrounding Stewart Island is not included in the park. The Stewart Island/Rakiura National Park Management Plan (2011-2021) does not contain any objectives or actions of specific relevance for aquaculture.

Challenge	<i>The CMS indicates that DOC will oppose aquaculture development in large areas of Stewart Island waters that are otherwise suitable for aquaculture development</i>
Opportunity	<i>There may be an opportunity to more precisely define the highly valued attributes of Stewart Island waters at a smaller spatial scale, thereby allowing scope for targeted areas for aquaculture development</i>

8. Other areas with special status

8.1 Marine reserves

Fiordland has 10 marine reserves:

- Te Awaatu Channel (The Gut, Doubtful Sound) marine reserve and Piopiotahi (Milford Sound) marine reserve were both initially proposed by the New Zealand Federation of Commercial Fishermen and formally established in 1993.
- The other eight reserves were established in 2005 as part of the management measures proposed by the Guardians of Fiordland:
 - Te Hapua (Sotherland Sound)
 - Hawea (Clio Rocks)
 - Kahukura (Gold Arm)
 - Kutu parera (Gaer Arm)
 - Taipiri roa (Elizabeth island)
 - Moana uta (Wet Jacket Arm)
 - Taumoana (Five Fingers Peninsula)
 - Te Tapuwae o Hua (Long Sound)

The Ulva Island Marine Reserve (Stewart Island) was established in 2004.

8.2 Marine mammal sanctuaries

There are two marine mammal sanctuaries in Southland, both established to protect Hector's dolphins:

- Te Waewae Bay marine mammal sanctuary (boundary is a line from Pahia Point to Sand Hill Point). The area covers approximately 35,906 hectares and covers 112.93 km of coastline;
- Catlins Coast marine mammal sanctuary (boundary extends from Three Brother's Point offshore 5 nm to a point 6.9 nm offshore to Bushy Point Beacon). The sanctuary is approximately 65,967 hectares and covers 161 km of coastline

8.3 Mataitai reserves

Mataitai reserves provide for Maori customary (non-commercial) food-gathering and recognise the special relationship between tangata whenua and places of importance for customary food gathering. There are currently six mataitai reserves in Southland, as follows:

- Waikawa Harbour/Tumu Toka mataitai
- Oreti mataitai
- Mataura river mataitai
- Pikomamaku mataitai (Stewart Island)
- Te Whaka a te Wera mataitai (Stewart Island)
- Kaihuka mataitai (Stewart Island)

Challenge	<p><i>The Marine Reserves Act does not prevent aquaculture applications from being made in areas which are marine reserves. However, aquaculture would generally be considered an incompatible use in a marine reserve and is a prohibited activity in the regional coastal plan;</i></p> <p><i>Aquaculture is not prohibited in marine mammal sanctuaries, but the status of the area as a marine mammal sanctuary is a consideration in the granting of resource consents;</i></p> <p><i>Aquaculture is not prohibited in a mataitai reserve, but if the aquaculture activity causes an undue adverse effect on customary fishing, the development will not be allowed to proceed</i></p>
Opportunity	<p><i>Some types of aquaculture development may be compatible with marine mammal sanctuaries;</i></p> <p><i>Mataitai reserves may provide an opportunity for iwi aquaculture development, integrated with customary fishing activity</i></p>

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