Waitata

NZKS Application
McGuinness Institute

November 2019

Background

Qualifications

- ACA, BCom, FCA, MBA, Harvard Executive Course (Strategy), London School of Economics Executive Courses (Global Macroeconomic Challenges and Behavioral Economics)

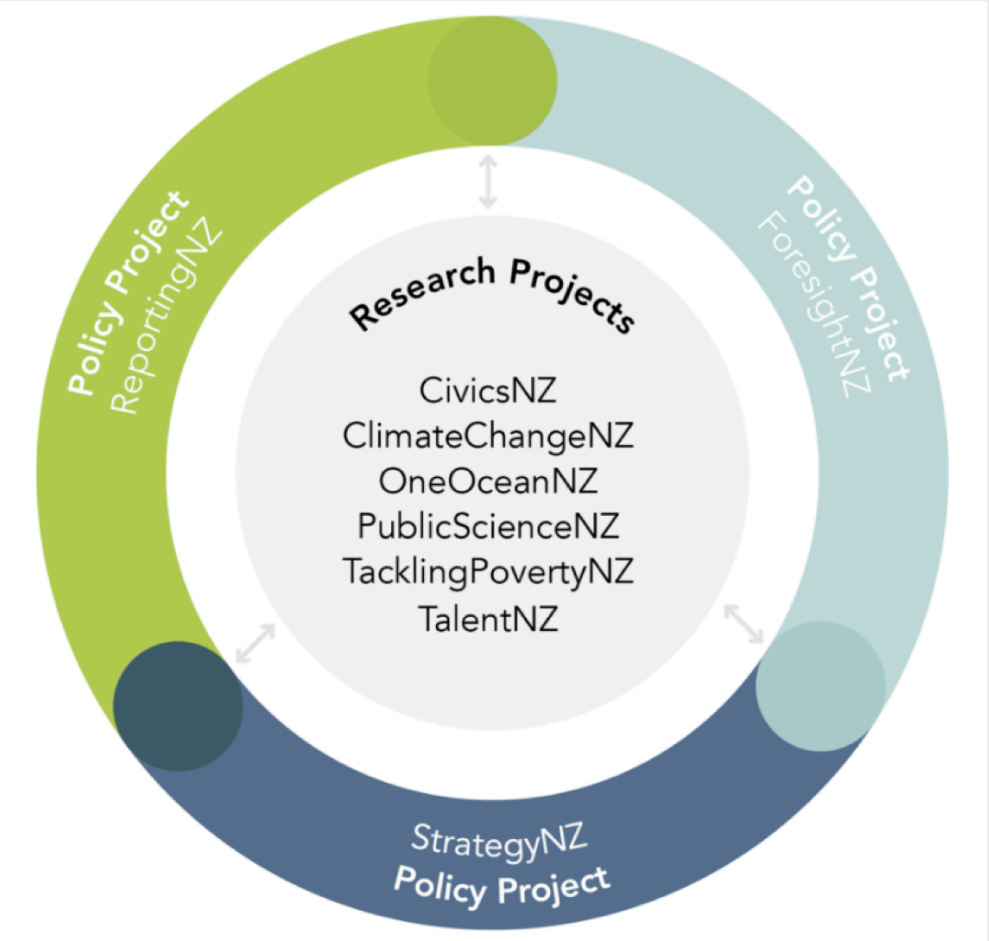
Experience

- Established McGuinness & Associates (1990–2004) Profit-orientated – Consultancy
- Established McGuinness Institute (2004–) Think tank – Philanthropy

Background

- Own a cottage on Arapaoa Island

What is the McGuinness Institute?



Non-partisan think tank exploring New Zealand's long-term future

	Autocratic	Democratic
Human-centric	Treasure chest	Public treasure
Ecosystems-centric	National treasure	Planetary treasure

Species analysis

Source: Gordon et al., 2010

Species	Number
Species recorded in New Zealand's EEZ	17,135
Species known but undescribed in collections	4,315
Species potentially existing within our marine estate	100,000

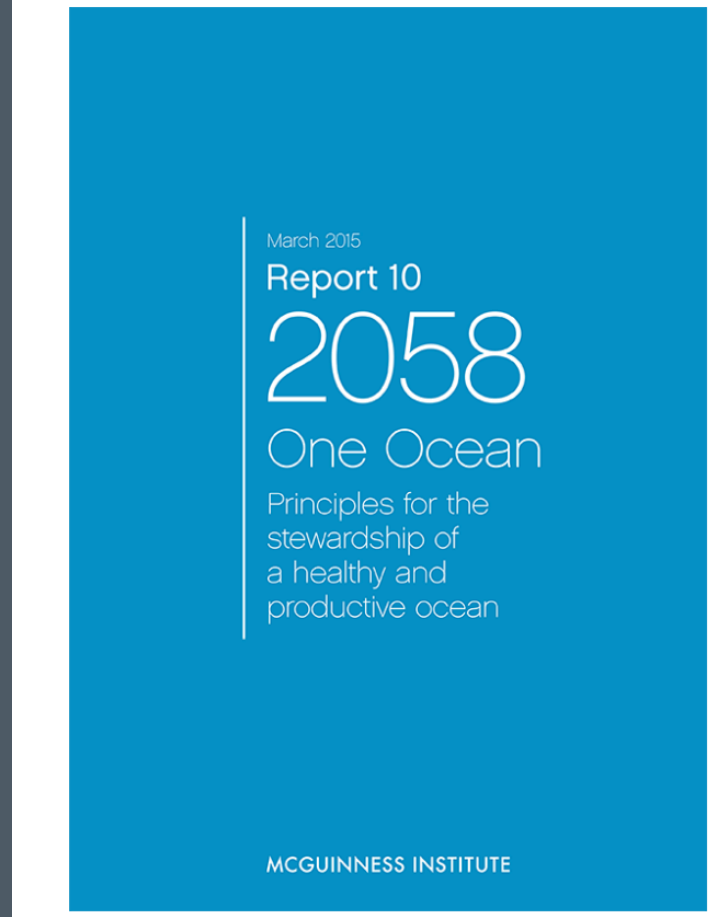
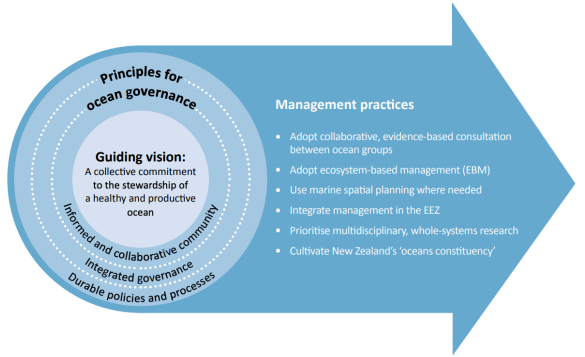


Figure 9: Framework for One Ocean: Collaborative governance within the community of ocean users, government, conservationists and the public



Discussion Paper 2019/01 – The Climate Reporting Emergency: A New Zealand case study

MCGUINNESS INSTITUTE
TE HONONGA WAKA

4.2 Analysis of the for-profit reporting regime in practice

To complete this analysis, we reviewed four specific components of the annual report: the chair or CEO report, the financial statements, the independent auditor's report and the corporate governance statement (see Figure 17). Although we indirectly discuss other parts of the annual report to support some of our analysis, our focus has been on the types of users this information was prepared for (e.g. shareholders, primary users [including shareholders] or non-primary users), the horizon that preparers use when preparing information (e.g. past, short-term future or long-term future), and the types of climate-related information preparers disclosed (i.e. financial or non-financial).

Figure 17: Four key components of an annual report

For each of the four components of the annual report, we first outline what part of the regulatory regime is applicable. This includes an overview of the relevant accounting, assurance and reporting requirements issued and/or prepared by XRB, FMA and NZX, and in some cases, sections from relevant Acts. The high-level annual report content requirements set out in s 211 of the Companies Act 1993 are of particular relevance. These institutions and instruments together form the basis of the regulatory reporting regime currently existing in New Zealand.

Next, as previously noted, we identify the audience (i.e. a description of the user as defined under the regime), the information horizon (e.g. the preparer's timeframe for identifying risks) and, lastly, whether the information tends to be financial or non-financial in nature.

Next, we look at two case studies: Z Energy and New Zealand King Salmon (NZKS). There are three reasons for this:

1. The Institute knows the background to these two companies reasonably well due to past research.
2. One company deals with energy and the other with production.
3. One company is an example of impacts on the climate (i.e. energy), while the other (salmon farming) is an example of climate change impacts on a company.

A brief summary of these are discussed directly below, and then discussed in answer to the question "What was disclosed?"

Lastly, we provide our observations of the broader implications for climate reporting. Is the report or statement adequate for the users identified under the existing regime and is it adequate for users other than those specified under the existing regime?

Through case studies we aim to provide a high-level summary illustrating how current climate reporting requirements are being interpreted and implemented in practice. The case study analysis is intentionally narrow and is therefore not a detailed analysis of the two companies' reports, nor does it aim to explore climate-related impacts on energy provision or salmon farming. Further, the Institute does not investigate other climate-related risks, such as rising sea levels or extreme weather events.

Case study 1: Z Energy 2019 annual report

Z Energy is an NZSX-listed company that distributes fuel, with branded service stations throughout New Zealand. Z Energy comprises some of the former assets of Shell New Zealand and Chevron New Zealand.

It mentions 'climate' 26 times in its 2019 annual report (Z Energy, 2019a). For the purpose of our analysis, we focused on reporting of emissions (see Figure 18) and actions the company is taking.

Z Energy's full year results announcement for the year ended 31 March 2019 states:

> The price of NZUs (New Zealand Units) has risen during the year in response to the escalation in emissions reduction requirements, environmental concerns and growing certainty around the strength and importance of the NZ ETS as the mechanism to price carbon emissions and contribute toward slowing climate change (Z Energy, 2019b, p. 20).

Z Energy provided a 'Climate Change Statement' as part of its annual report, which has been advocated by the Institute. This is discussed later in this paper as it is not part of the mandatory reporting regime.

Z Energy also developed and reported scenarios to explore the future along the lines of the Recommendations of the TCFD to "Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario" (Z Energy, 2019a, p. 46; TCFD, 2018a, p. 2).

Figure 18: Z Energy's greenhouse gas emissions
Source: (Z Energy, 2019a, p. 39)

Greenhouse gas emissions	FY19	Calendar year 2017 (base year)
Scope 1 – Z offices and retail sites	3,637	2,307
Scope 2 – Z offices and retail sites	4,785	4,345
Scope 3 – Z offices and retail sites	4,485	3,339
Scope 3 – New Zealand supply chain	37,990	40,031
Scope 3 – Share of refinery	553,892	636,868
Scope 3 – Rest of supply	902,315	807,542
Scope 3 – Z product emissions from our customers	11,640,509	9,468,277
Total emissions	13,149,613	10,881,909

Case study 2: NZKS 2018 annual report

New Zealand King Salmon (NZKS) is a NZSX-listed company that farms salmon in the Marlborough Sounds. The company's business model is being impacted by rising water temperatures. It mentions 'climate' twice in its annual report. For the purpose of our analysis, we focused on salmon mortalities (in terms of NZKS's reporting and management strategies) and the expiration of existing consents for salmon farm sites (particularly in terms of proposed relocation of existing farms to higher-flow, lower-temperature sites).

NZKS background

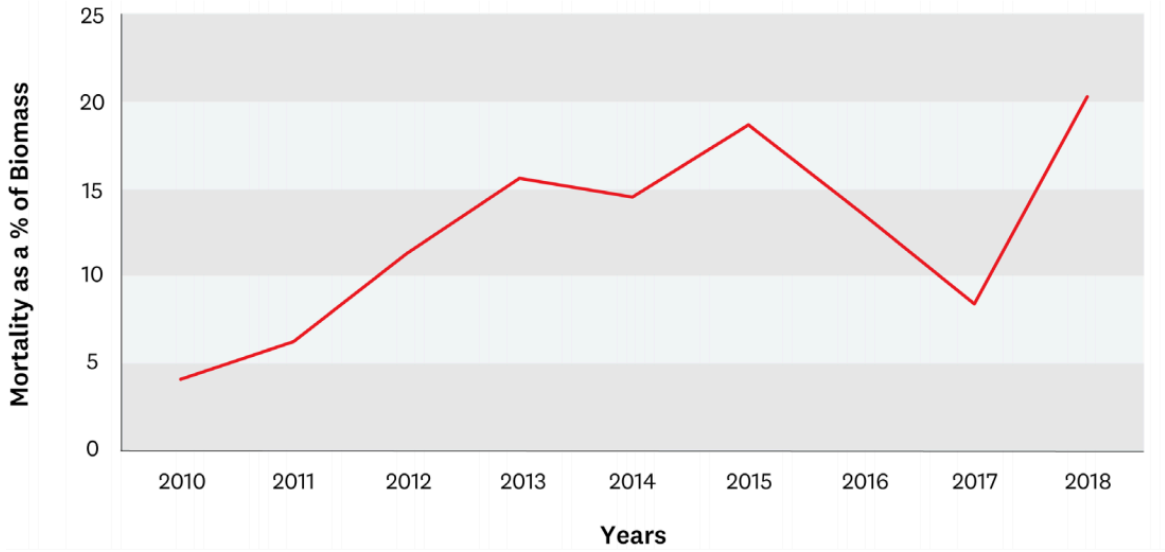
- A 2013 Board of Inquiry (BOI) decision approved four farms (which decreased to three due to legal challenges over environmental impacts) all in high-flow, low-temperature areas (McGuinness Institute, 2017, p. 20).
- The site consents for six of NZKS's existing low-flow, high-temperature farms expire shortly: Ruakaka expires in 2021 and Crail Bay (two farms), Forsyth, Waihinau and Otanerau in expire in 2024 (McGuinness Institute, 2017, p. 3).
- NZKS acknowledges climate change as one of four "major sustainable development issues for New Zealand" in its 2018 annual report *Big Ideas Start Here* (NZKS, 2018a, p. 18).

Chapter 4 of *Discussion Paper 2019/01 – The Climate Reporting Emergency: A New Zealand case study* looks at two NZX-listed companies in detail: Z Energy and NZKS (see these graphs on pages 35 and 36).

Figure 18: Z Energy's greenhouse gas emissions
Source: (Z Energy, 2019a, p. 39)

Greenhouse gas emissions	FY19	Calendar year 2017 (base year)
Scope 1 – Z offices and retail sites	**3,837**	3,907
Scope 2 – Z offices and retail sites	**4,195**	4,045
Scope 3 – Z offices and retail sites	**4,495**	3,339
Scope 3 – New Zealand supply chain	**37,910**	40,031
Scope 3 – Share of refinery	**555,892**	634,848
Scope 3 – Rest of supply	**902,215**	807,542
Scope 3 – Z product emissions from our customers	**11,640,509**	9,488,277
Total emissions	**13,149,051**	10,981,989

Figure 19: NZKS's premature mortality as a percentage of biomass
Source: (NZKS, 2016a, p. 20; NZKS, 2017, p. 11; NZKS, 2018a, p. 13)



(2017)

(2019)

From the Preface of *Climate-related financial disclosures*:

> 'In its report Low-emissions Economy (August 2018), the Productivity Commission recommended the introduction of a mandatory (comply-or-explain) climate-related financial disclosure system. This recommendation was underpinned by two ideas. First, disclosures are a powerful mechanism to focus reporting entities on the impacts of climate change on their own activities. Second, disclosure enables investors to make decisions that accurately reflect the climate risk of those choices.
>
> Some New Zealand companies have taken the lead by disclosing climate change information. However, a report published by the McGuinness Institute indicates that the great majority of large companies do not provide any information, disclose only small amounts of information or are reporting in an ad hoc way.' (MfE & MBIE, October 2019, p. 5)

Note: The RMA also has a key role in tackling climate change and it is likely to be around assessing risks, measuring carbon and and applying an internal carbon price.

Why NZKS?

Because climate change is impacting them so significantly

BOI Decision 2013 – Evidence of the judgment considering the four proposed farms collectively

Assessment

[1252] After careful consideration of all the balancing factors, we conclude that the siting of four proposed farms in this Reach would not be appropriate. The assimilative capacity of the receiving waters and the potential cumulative effects on the foraging areas of the King Shag are uncertain. The cumulative effects of the Kaitira and Tapipi on the natural character, landscape and seascape qualities of the entrance to the Sounds would be high. Further, Tapipi lies in the path of a traditional waka route – a taonga to Ngati Koata. It would also be in the vicinity of recorded sites of significance to Maori.

[1253] To grant all of the zones would not give **effect to the statutory provisions in respect of natural character, landscape, Maori, or ecological matters. The overall cumulative effects would be high.** [Bold added]

[1254] We accordingly grant the request with respect to Waitata and Richmond, but decline the request with respect to Kaitira and Tapipi.

BOI Decision 2013 – Evidence of the judgement considering the farms 'individually and collectively'

[267] We are conscious that the economic impact has been modeled on all nine farms being approved and thus, the likelihood of a processing plant being built at Picton to take the overload from the present Nelson processing plant. We are satisfied that the economic impact from all nine farms being approved, would be considerable, although it is not possible to put a figure on it. Dr Kaye-Blake's suggestion would, in our view, be somewhere close.

[268] Each of the farms individually would have economic benefit at a local, regional, and to a much lesser extent, a national level. We accordingly find that in exercising our judgment, each of the farms, both individually and collectively, would be of economic benefit.

New information since the BOI Decision 2013: Climate change effects

[418] Dr MacKenzie acknowledged that climate change and increasing sea temperatures could have an effect on the phytoplankton ecology of the Sounds but these would be unpredictable and any projections would be simply speculation.
While warming may provide conditions more conducive to HABs it could also result in a reduction in oceanic inputs of nutrient making the Sounds less productive.

Discussion and Findings
[430] Mr Knight has quite correctly modelled the cumulative effects of the existing farms, this proposal and other consented salmon farms. However we note that little information has been presented on the inputs, and more importantly, the trends in nitrogen from the land. We must also keep in mind the possibility of more subtle and long term effects due to climate change. We agree with Dr MacKenzie that we do not have enough information to predict whether this would be positive or negative with respect to nutrient inputs.

NZ Coastal Policy Statement 2010

...

Policy 3: Precautionary approach

1. Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.
2. In particular, adopt a precautionary approach to use and management of coastal resources potentially vulnerable to effects from climate change, so that:
    a. avoidable social and economic loss and harm to communities does not occur;
    b. natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and
    c. the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.

...

New information on effects since BOI Decision 2013: Mortality effects

[479] Mr Diggles explained that fish welfare issues occur at stocking densities above 25kg/m^3 and King Salmon operate their farms at or below that mark throughout the entire life cycle. The experts were agreed that existing disease agents were unlikely to become a problem, at an individual farm level, given the current stocking densities. While the farms within each management area are likely to be connected, at a whole of Sounds scale the three farm management areas would have a low epidemiological connection given the large buffer zones between them.

Discussion and Findings

[483] The use of three separate management areas and the ability to switch to a biosecure mode is good practice.

If the application represents NZKS's response to climate change, we believe the 'effects of climate change' should be set out in the application.

(f) The McGuinness Institute Paper circulated prior to the hearing highlights what it describes as the Climate Reporting Emergency which New Zealand is facing. It is right to recognise and report on the risks which businesses, the economy, society and the environment face. This application represents NZ King Salmon responding to climate change. Specifically in the context of this case, that involves moving to single-year class farming from the multi-year class farming it has undertaken until now. I will explain what is meant by those terms below.

RMA 1991: Section 7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(b) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(e) *[Repealed]*

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(h) the protection of the habitat of trout and salmon:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

(Red added for emphasis)

RMA 1991: Section 3 Meaning of effect

In this Act, unless the context otherwise requires, the term **effect** includes—

(a) any positive or adverse effect; and

(b) any temporary or permanent effect; and

(c) any past, present, or future effect; and

(d) any cumulative effect which arises over time or in combination with other effects—

regardless of the scale, intensity, duration, or frequency of the effect, and also includes—

(e) any potential effect of high probability; and

(f) any potential effect of low probability which has a high potential impact.

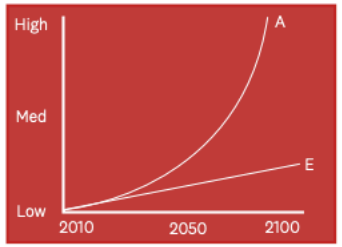
(Red added for emphasis)

The Year 2055

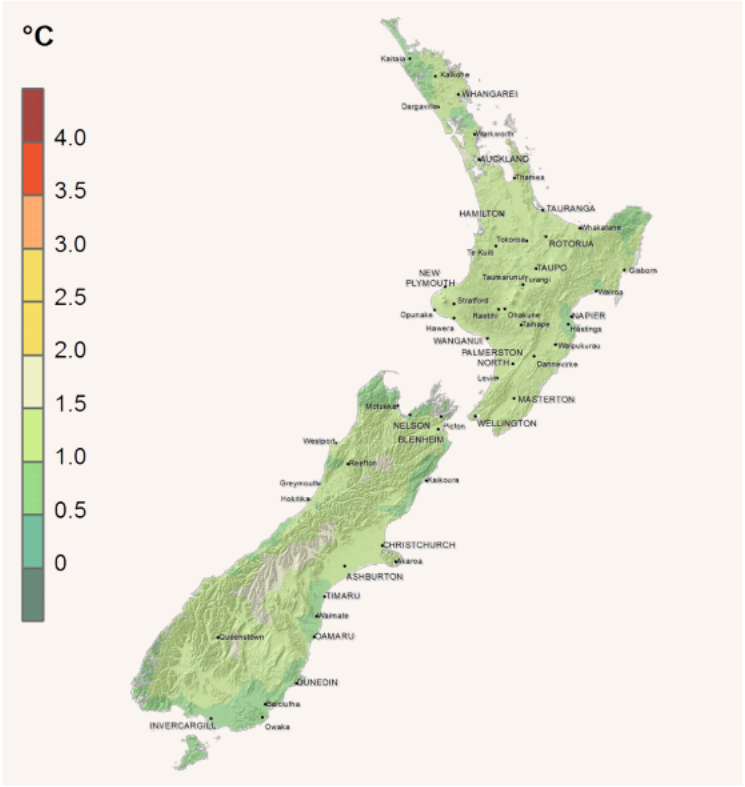
2020 + 35 years (the application) = 2055

See level of climate change effects on New Zealand in the following illustrative graphs (1995–2055 on the left, 1995–2090 on the right). These graphs formed part of an exercise for the TCFD workshops the McGuinness Institute ran in Auckland and Wellington in October this year.

Resource 1: Brief Overview of Scenario RCP 8.5

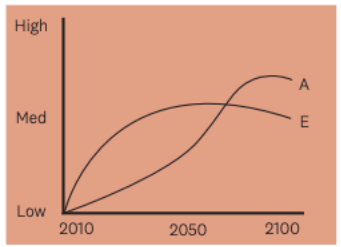
Effort to curb emissions (E)	Effort to adapt (A)	Energy generation	New technology	Transport	Representative Concentration Pathway	Temperature (average increase by the end of the 21st century relative to 1986-2005)	Sea level (average rise by the end of the 21st century relative to 1986-2005)	Extreme weather
		 Coal-fired power	N/A	 Cars, trucks	RCP 8.5	 2.6 °C–4.8 °C	 0.63 m	 Large increase

Temperature Change Between 1995 and 2055

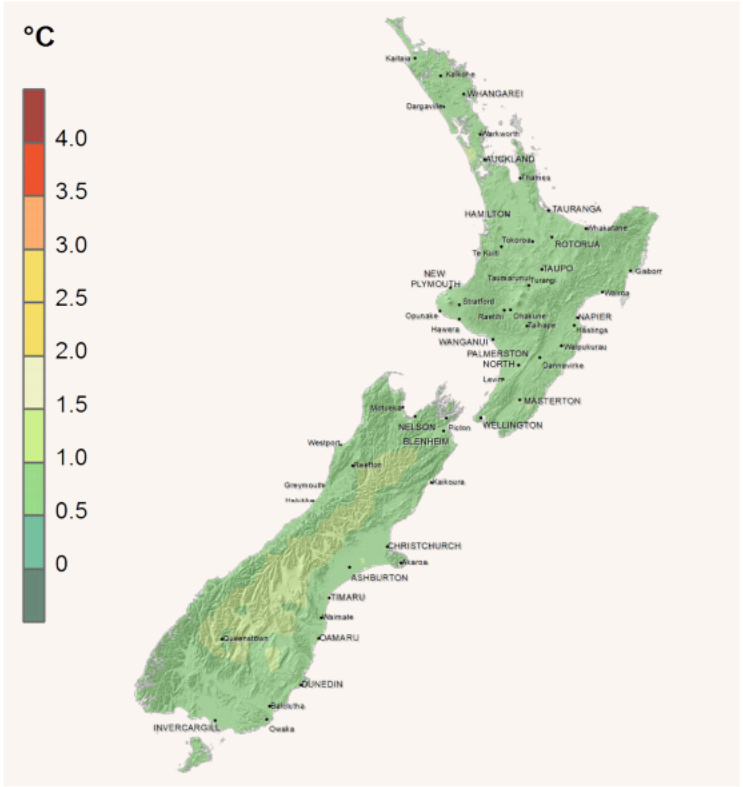


Temperature Change Between 1995 and 2090

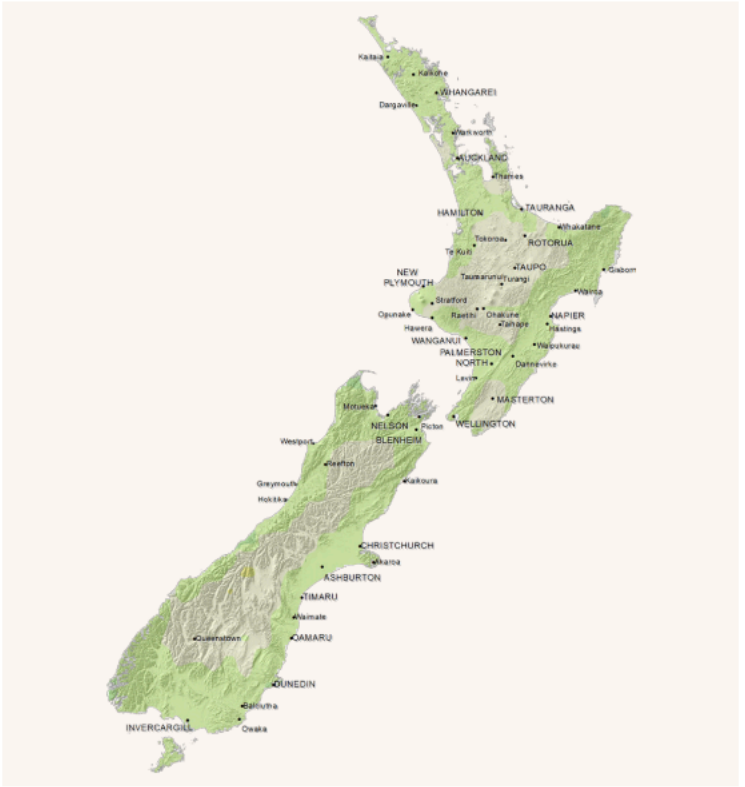
Resource 1: Brief Overview of Scenario RCP 6.0

Effort to curb emissions (E)	Effort to adapt (A)	Energy generation	New technology	Transport	Representative Concentration Pathway	Temperature (average increase by the end of the 21st century relative to 1986-2005)	Sea level (average rise by the end of the 21st century relative to 1986-2005)	Extreme weather
		 Mix	N/A	 Mix	RCP 6.0	 1.4 °C–3.1 °C	 0.48 m	 Moderate increase

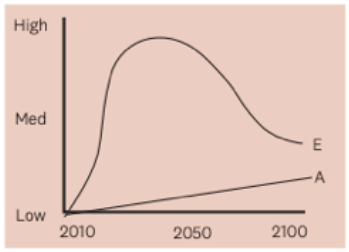
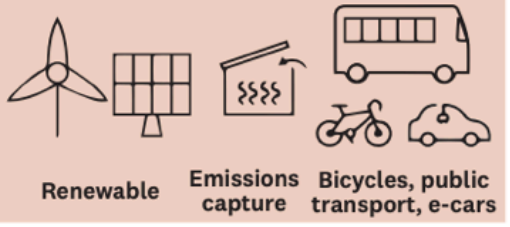
Temperature Change Between 1995 and 2055



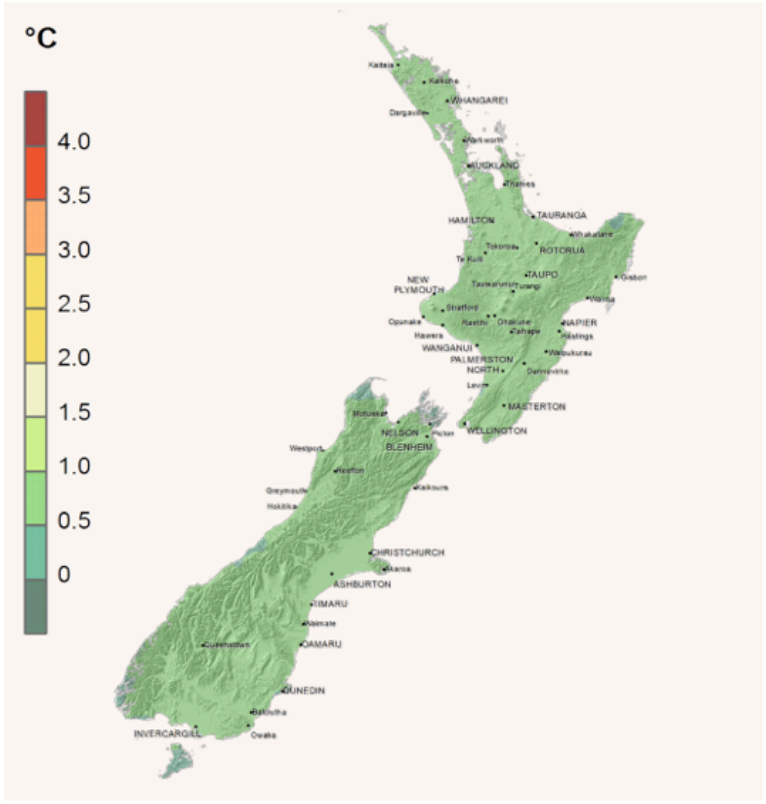
Temperature Change Between 1995 and 2090



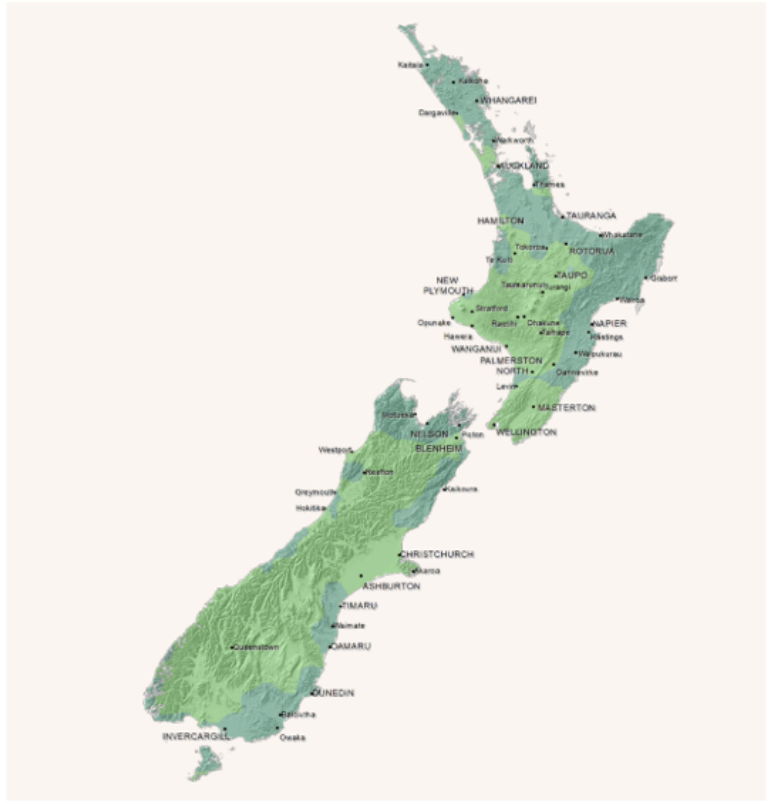
Resource 1: Brief Overview of Scenario RCP 2.6

Effort to curb emissions (E)	Effort to adapt (A)	Energy generation	New technology	Transport	Representative Concentration Pathway	Temperature (average increase by the end of the 21st century relative to 1986-2005)	Sea level (average rise by the end of the 21st century relative to 1986-2005)	Extreme weather
								
		Renewable	Emissions capture	Bicycles, public transport, e-cars		0.3 °C–1.7 °C	0.4 m	Small increase

Temperature Change Between 1995 and 2055



Temperature Change Between 1995 and 2090



What does ‘implemented’ actually mean in practice?

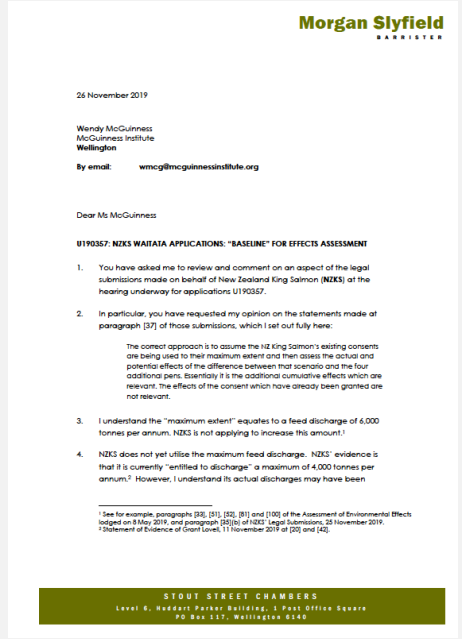
59 This variation was referred to in The Friends’ submission at paragraphs 8 to 13 and in the submissions of the McGuinness Institute at page 9. That consent application is not relevant here other than that consent is now being implemented. It is not correct to say that this application enabled a 1,000 tonne increase a year earlier than provided for by the *Board of Inquiry* (Friends from paragraph 9). The application removed a pre-condition to a feed increase that had been granted by the Board of Inquiry.

(Submission of applicant, 26 Nov 2019)

Net effects of the proposal

Effects if the status quo prevails

Effects if the new pens are approved



Morgan Slyfield
BARRISTER

26 November 2019

Wendy McGuinness
McGuinness Institute
Wellington

By email: wmcg@mcguinnessinstitute.org

Dear Ms McGuinness

U190357: NZKS WAITATA APPLICATIONS: "BASELINE" FOR EFFECTS ASSESSMENT

1. You have asked me to review and comment on an aspect of the legal submissions made on behalf of New Zealand King Salmon (NZKS) at the hearing underway for applications U190357.

2. In particular, you have requested my opinion on the statements made at paragraph [37] of those submissions, which I set out fully here:

> The correct approach is to assume the NZ King Salmon's existing consents are being used to their maximum extent and then assess the actual and potential effects of the difference between that scenario and the four additional pens. Essentially it is the additional cumulative effects which are relevant. The effects of the consent which have already been granted are not relevant.

3. I understand the "maximum extent" equates to a feed discharge of 6,000 tonnes per annum. NZKS is not applying to increase this amount.[1]

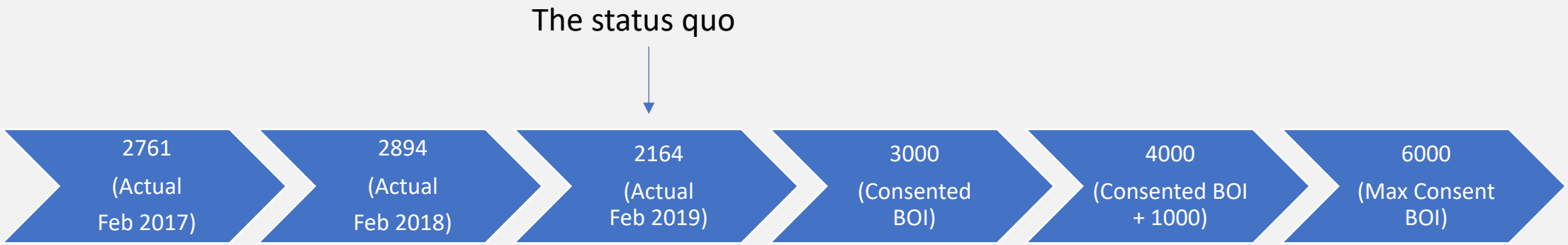
4. NZKS does not yet utilise the maximum feed discharge. NZKS' evidence is that it is currently "entitled to discharge" a maximum of 4,000 tonnes per annum.[2] However, I understand its actual discharges may have been

[1] See for example, paragraphs [33], [51], [52], [81] and [100] of the Assessment of Environmental Effects lodged on 8 May 2019, and paragraph [35](b) of NZKS' Legal Submissions, 25 November 2019.
[2] Statement of Evidence of Grant Lovell, 11 November 2019 at [20] and [42].

STOUT STREET CHAMBERS
Level 6, Haddart Parker Building, 1 Post Office Square
PO Box 117, Wellington 6140

Point of Law?:
The NZKS application states: 'Only ecological effects over and above what is currently consented are relevant to this application.' (Page 29, Para 47 of the 'Hearing Package).

Does the feed consent become irrelevant?



Average over the three years = 2606 mt

Effects if this application is approved

- Climate over next 35 years needs to be taken into account
- Does the new single (rather than multi) approach have a different impact?
- Carbon emissions (as explained later)
- Mortalities and animal welfare (and landfill)
- Water pollution (from fish faeces and excess feed)
- Shipping hazards (esp. given significant climate events)
- Staff health and safety
- Visual pollution (due to extra buoys and more pens)
- Transportation in the sounds
- Economic (e.g. impacts on tourism and/or water space charges)
- Noise (not assessed from water cooling devices)

Note: NZKS indicated in Hearing that employment would stay the same.

A few other issues raised by NZKS in their submission of 26 Nov 2019

(a) Carbon assessment

(b) Mortality per farm

(c) Full-time equivalents

(d) Overseas ownership

(e) Role of RMA and directors' duties

(a) Carbon assessment

NZKS annual report FY2019

CARBON ASSESSMENT

‘Climate change is a significant challenge for our world, and every organisation or individual has some level of carbon footprint to acknowledge.

As a starting point in understanding our own impact, we have commissioned a Life Cycle Analysis report on our own carbon footprint for our egg to plate operations. Once completed, the report will help us better understand our impact on the environment and lead to initiatives to manage and reduce these over time.’ (p. 30, FY2019 annual report)

Global Salmon Initiative: Carbon footprint

Carbon Footprint[3]

< >

A carbon footprint measures the total greenhouse gas emissions caused directly and indirectly by the production of a product.
Carbon footprint is measured in grams of carbon dioxide equivalent (g CO_2eq) per typical serving (40 g) of edible protein of the product.
Data are median values.

0.60	0.88	1.30	5.92	No Data
Farmed Salmon	Chicken	Pork	Beef	Lamb

CO_2e is calculated by multiplying the emissions of each of the six greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs and SF6) by its 100-year global warming potential (GWP).

Carbon footprint – life cycle analysis

Based on 2019 production (7931 mt)

Input

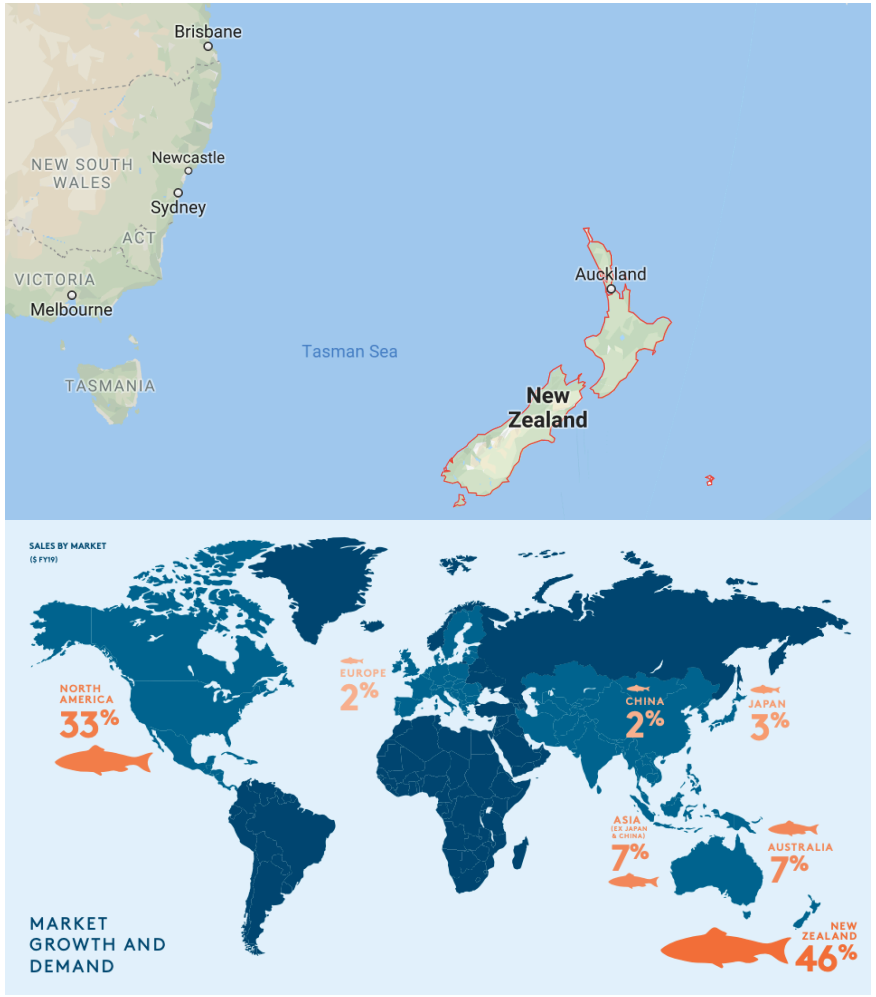
- Feed made in Chile and Australia
- Transported from Chile and Australia to NZ (14,276 mt)
- Pens purchased from overseas

Process

- Transported from Picton to tanks/farms
- Diesel run to cool water in farms
- Fish faeces, dead fish (to Blenheim landfill); live fish to Nelson

Output

- 54% overseas (often by plane) – 4284 mt
- 46% within NZ – 3848 mt



(b) Mortality per farm (in biomass mt and fish – incomplete)

HARVEST BY FARM

Year to year timing variances and harvest management programmes give rise to individual farm production variances.

	Farm	Indicative Size*	Water Conditions	Other factors	Volume Harvested FY19	Volume Harvested FY18
Queen Charlotte	Ruakaka		Low flow	Low automation, less efficient	705 MT	1140 MT
	Otanerau		Low flow	Low automation, less efficient	815 MT	890 MT
Tory Channel	Clay Point		High flow	Good automation	1,285 MT	1,250 MT
	Te Pangu		High flow	Good automation	2,275 MT	1,930 MT
	Ngamahau		High flow	Good automation	595 MT	760 MT
Pelorus Sound	Waitata		High flow	High automation, new equipment	1,265 MT	1,935 MT
	Kōpaua		High flow	High automation, new equipment	980 MT	110 MT
					7,920 MT	8,015 MT

Key: FY19 harvested volume (~900 MT G&G) Eventual production from new farms (~900 MT G&G)

Source: Investor Presentation Annual Results 2019, p. 12

* Based on FY19 harvest volumes, note that a further 11 MT was harvested from our hatcheries (3 MT for FY18).

Mortality

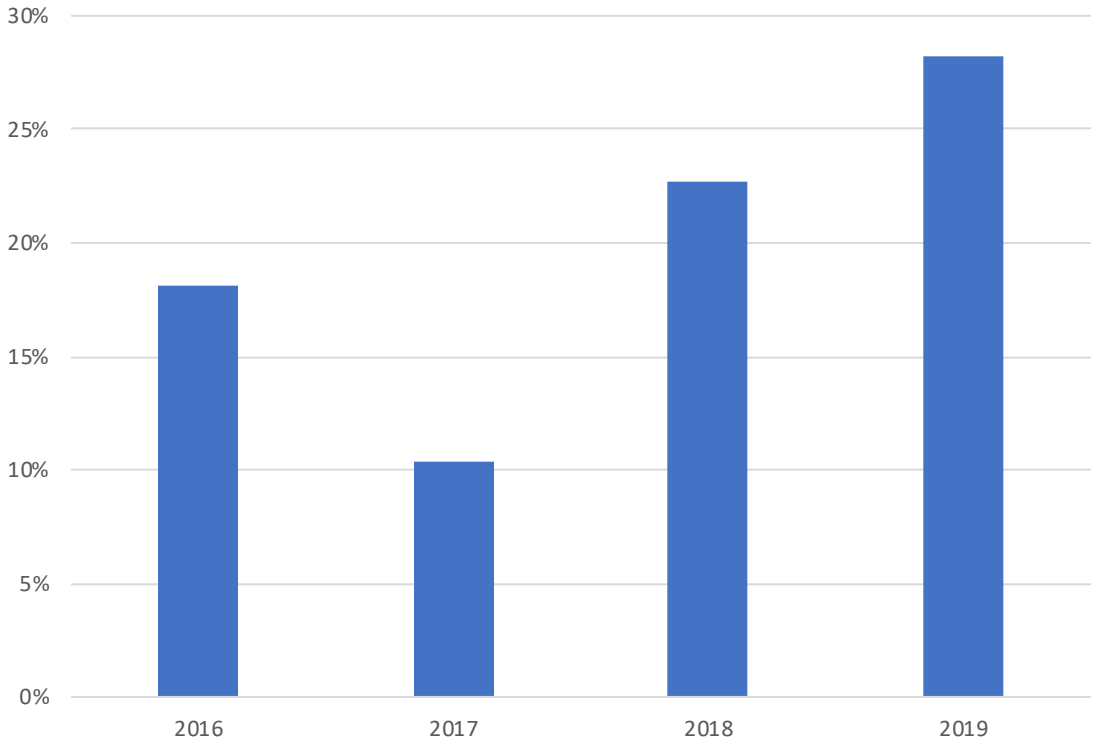
Fish Mortality at New Zealand King Salmon, New Zealand

Fish mortality is a key measure used to evaluate fish health during production. We have chosen to measure mortality using a 12 month rolling mortality rate. This measure calculates mortality for the last 12 months (January – December) as a proportion of the estimated number of fish in the sea in the last month of the year (adjusted for harvest and mortalities).

It is calculated as:

$$\text{12 months rolling mortality} = \frac{\text{(total \# of mortalities in sea last 12 months - total \# of culled fish due to illness or similar and not in harvest figures)}}{\text{(closing \# of fish in sea + total \# of mortalities in last 12 months + total \# harvested fish in last 12 months + total \# of culled fish in sea)}} \times 100$$

Mortality($) as a % of Biomass Produced($)



	King Salmon
2018	11.56%
2017	6.86%
2016	9.25%
2015	14.59%
2014	16.32%
2013	13.61%

Global Salmon Initiative

Fish Mortality at New Zealand King Salmon, New Zealand

Fish mortality is a key measure used to evaluate fish health during production. We have chosen to measure mortality using a 12 month rolling mortality rate. This measure calculates mortality for the last 12 months (January – December) as a proportion of the estimated number of fish in the sea in the last month of the year (adjusted for harvest and mortalities).

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	King Salmon
2018	11.56%
2017	6.86%
2016	9.25%
2015	14.59%
2014	16.32%
2013	13.61%

NZKS Annual Report

The table below shows key biological measures against the actual performance and the 2018 forecast detailed in the PDS:

Biological Metrics	FY2019	FY2018	
Harvest Volume [t]	7,931	8,018	▼
Feed Conversion Ratio (FCR)	1.80	1.81	▲
Mortality as a % of Biomass	23.2%	20.4%	▼
Closing Livestock Biomass [t]	5,125	5,391	▼
Feed Volume [t]	19,593	17,952	▲

The table below shows key biological measures against the actual performance and the 2018 forecast detailed in the PDS:

	2018			2017
Biological Metrics	Actual	PDS		Actual
Harvest Volume (MT)	8,018	7,518	▲	7,232
Feed Conversion Ratio (FCR)	1.81	1.76	▼	1.84
Mortality as a % of Biomass	20.4%	11.0%	▼	8.5%
Closing Livestock Biomass (MT)	5,391	6,889	▼	6,227
Feed volume (MT)	17,952	17,986	▼	18,948

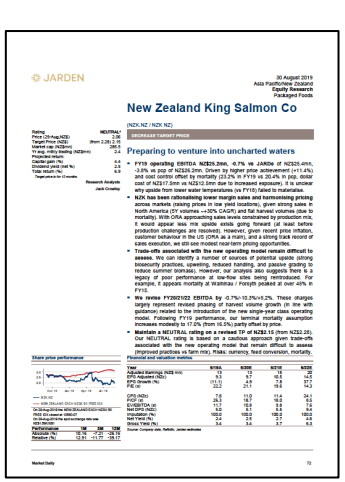
It is calculated as:

$$\text{12 months rolling mortality} = \frac{\text{(total \# of mortalities in sea last 12 months - total \# of culled fish due to illness or similar and not in harvest figures)}}{\text{(closing \# of fish in sea + total \# of mortalities in last 12 months + total \# harvested fish in last 12 months + total \# of culled fish in sea)}} \times 100$$

Excerpt from August 2012 – Statement of Rebuttal Evidence of Andrew Clark

(e) *Environmental cleanup*: Tony Weber does not explain what he means by “environmental cleanup”, or the costs he expects could be associated with any such cleanup. As I understand the science, there is very little risk of NZ King Salmon’s activities causing any significant environmental damage. This is particularly likely to be the case given the monitoring, staging, and adaptive management proposed. Additionally, NZ King Salmon has always been able to deal with major issues in the past. For example, we have had to deal with feed quality issues in early 2000s, an algal bloom event in 2009/10, and even our recent elevated mortality issue at Waihinau, using our own resources and insurance where appropriate. Further, if the quality, cooler water, and higher flow (and more efficient and productive, commercially) sites which we have sought are granted, NZ King Salmon will be better financially positioned to deal with any future issues that might arise. (p. 7)

Jarden Report


JARDEN

30 August 2019
Asia Pacific/New Zealand
Equity Research
Packaged Foods

New Zealand King Salmon Co

(NZK.NZ / NZK NZ)

DECREASE TARGET PRICE

Preparing to venture into uncharted waters

Research Analysts
Jack Crowley

Share price performance

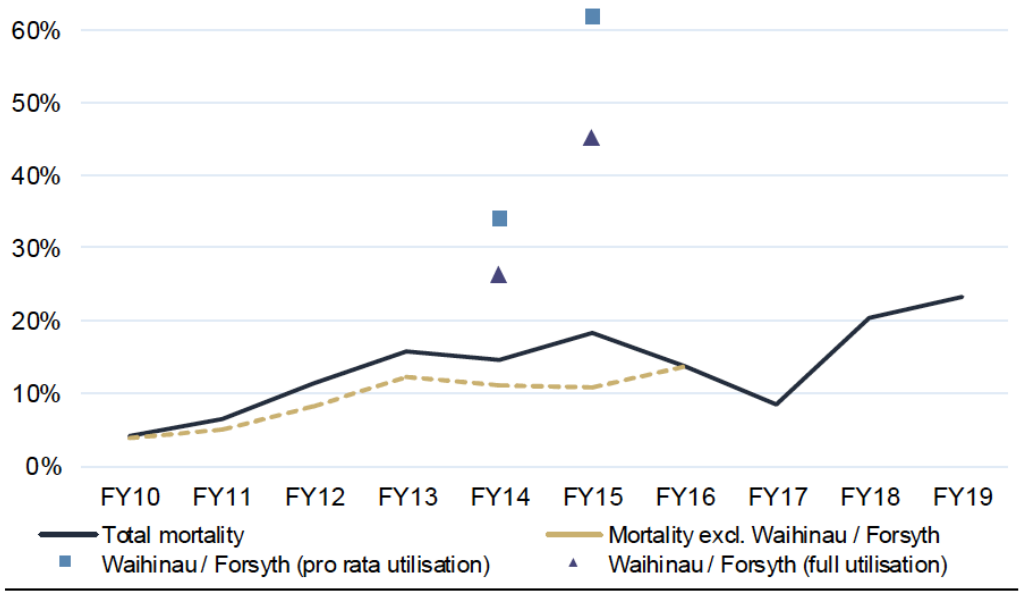
Financial and valuation metrics

Source: Company info, Refinitiv, Jarden estimates

Market Daily

70

Figure 15: Waihinau / Forsyth Mortality estimates



Source: Company data, Jarden estimates

…and mortality (possibly the most important near-to-medium term factor)

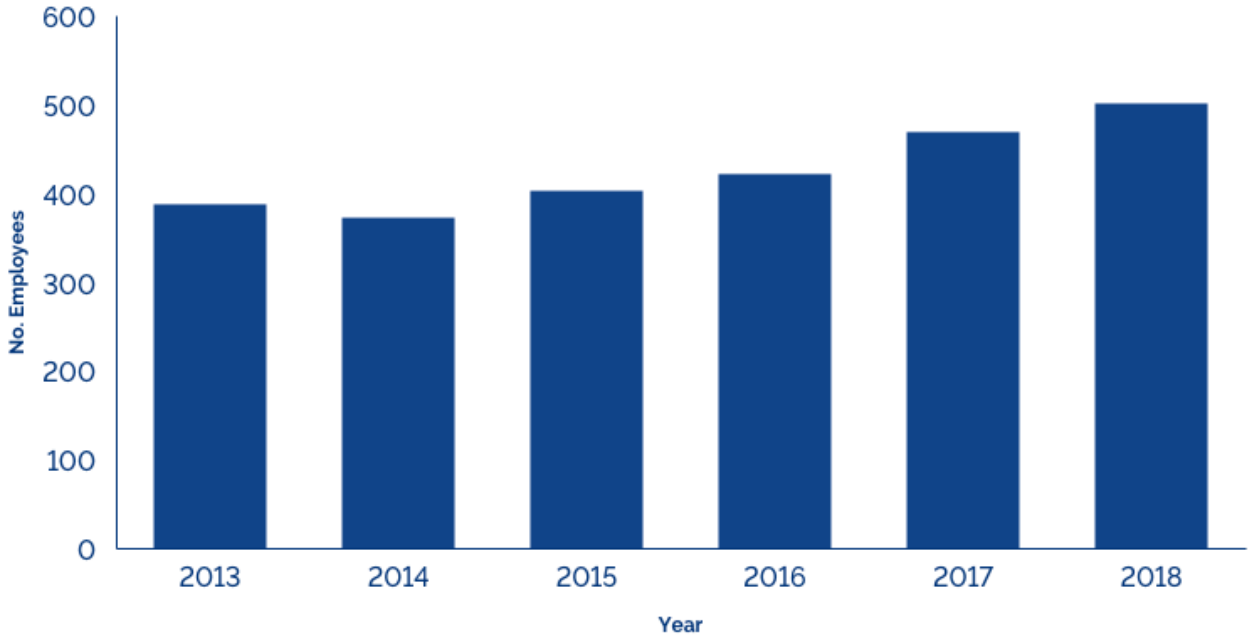
Critical to near-term fish performance will be the success of the new operating model. Trade-offs associated with the new single year class operating model remain difficult to assess (increased fixed costs as production occurs at more seafarms, risk assumed from increasing utilisation at low flow sites vs mortality implications of improved biosecurity and other initiatives). The new operating model includes the use of four low flow sites. Notably two of which Waihinau and Forsyth have not been used recently following a period of high mortality. We note in FY15 total seafarm mortality was 18.4%. Despite Waihinau / Forsyth feed discharge limits that only represented 15% of NZK's aggregate limit at the time (Figure 14), mortality excluding Waihinau / Forsyth was 10.9%. This implies mortality at Waihinau / Forsyth in excess of 45% (62% assuming the pro rata utilisation of feed limits). In our view, this warrants a cautious approach to factoring in upside from the new operating model despite a number of benefits (stronger biosecurity, upwelling, passive grading systems to reduce biomass prior to summer, and a targeted approach to reduce fish handling).

(c) Full-time equivalents

Direct Labor at New Zealand King Salmon, New Zealand

GSI member company operations cover many regions, and their employees are a diverse group in terms of both culture and their form of work. Nevertheless, all GSI member companies share a common set of core values that promote fair treatment and safe working conditions for all employees across all their operations.

Direct labor is calculated as full-time equivalent employees per calendar year.



(Graph from Global Salmon Initiative)

Excerpt from August 2012 – Statement of Rebuttal Evidence of Andrew Clark

Operation	Current Employees as of 29 Jul 2012	Additional Employees Required (approximately) once full production achieved
Hatchery	**30** permanent (full time) **2** casuals	9 (3 per site when production > 15,000 tonne)
Farms	**42** (30 shift workers, 9 day workers and 3 regional managers) **2** casuals	50-70 Marlborough
Processing	**243** (incl management)	30-60 primary processing (depends on the level of automation – most likely towards upper end) – potentially Marlborough ~220 value-added processing and Processing supervisors / management
Head Office (Nelson)	**56**	12
(Export Sales & Marketing, Finance, IT, HR & Support)		
Aquaculture Office (Picton) including net making & repairs	**36** (Picton) **2** (Nelson)	8 Marlborough
National Sales & Marketing Office (Auckland)	**19**	3
Australia	**3** (Sydney) **1** (Brisbane) **1** (Melbourne)	1
USA	**2**	5
Japan	**2**	4
Total	**441**	**Approx 375**

10 BIOLOGICAL ASSETS

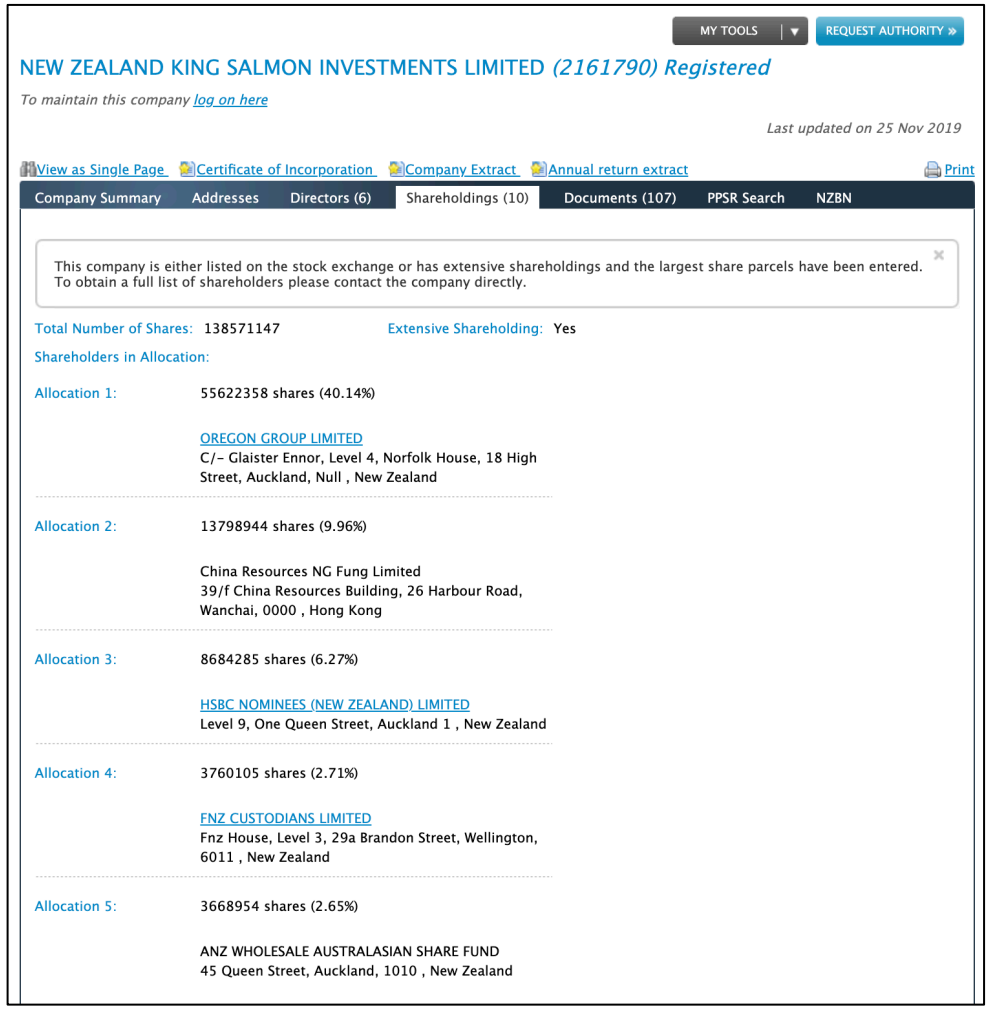
The Company farms salmon in the South Island. It has three hatcheries in the South Island and six operational marine salmon farms in the Marlborough Sounds. The fish livestock are left to grow for up to 31 months and are harvested at an average 3.5 to 4.0 kgs.

Annual harvest was 7,842 mt (gilled and gutted equivalent) (2011:7,546 mt).

Fish stock with a carrying value of $27,978,594 (2011:$32,495,330) was valued at cost less accumulated depreciation and any accumulated impairment losses. However, accumulated depreciation is not applicable for fish livestock and there is no separate requirement to depreciate the fish livestock unless the asset is past the age where it has ceased to appreciate in value. The fish livestock is harvested before it depreciates in value and any impairment losses are recognised in the income statement in the year they arise.

Current employment levels as at end of July 2012 are 441 headcount. These figures are currently lower than the NZ King Salmon report indicated, due to NZ King Salmon having in place a temporary "sinking lid" on replacement of staff who leave, in order to manage costs better due to fish availability constraints and pending availability of further waterspace; seasonal lows; and mothballing of Crail Bay.

(d) Overseas ownership



MY TOOLS | REQUEST AUTHORITY »

NEW ZEALAND KING SALMON INVESTMENTS LIMITED *(2161790) Registered*

To maintain this company log on here

Last updated on 25 Nov 2019

View as Single Page | Certificate of Incorporation | Company Extract | Annual return extract | Print

Company Summary | Addresses | Directors (6) | Shareholdings (10) | Documents (107) | PPSR Search | NZBN

This company is either listed on the stock exchange or has extensive shareholdings and the largest share parcels have been entered. To obtain a full list of shareholders please contact the company directly.

Total Number of Shares: 138571147 Extensive Shareholding: Yes

Shareholders in Allocation:

Allocation 1: 55622358 shares (40.14%)

OREGON GROUP LIMITED
C/- Glaister Ennor, Level 4, Norfolk House, 18 High Street, Auckland, Null , New Zealand

Allocation 2: 13798944 shares (9.96%)

China Resources NG Fung Limited
39/f China Resources Building, 26 Harbour Road, Wanchai, 0000 , Hong Kong

Allocation 3: 8684285 shares (6.27%)

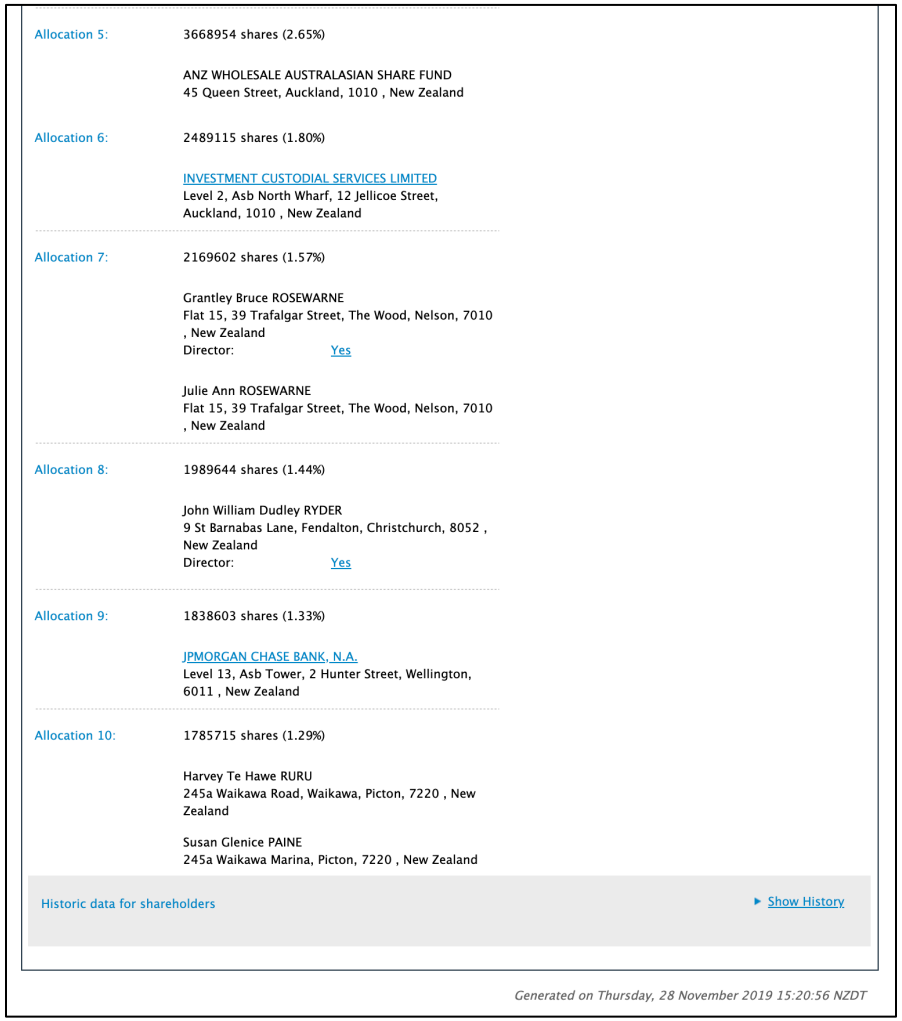
HSBC NOMINEES (NEW ZEALAND) LIMITED
Level 9, One Queen Street, Auckland 1 , New Zealand

Allocation 4: 3760105 shares (2.71%)

FNZ CUSTODIANS LIMITED
Fnz House, Level 3, 29a Brandon Street, Wellington, 6011 , New Zealand

Allocation 5: 3668954 shares (2.65%)

ANZ WHOLESALE AUSTRALASIAN SHARE FUND
45 Queen Street, Auckland, 1010 , New Zealand



Allocation 5: 3668954 shares (2.65%)

ANZ WHOLESALE AUSTRALASIAN SHARE FUND
45 Queen Street, Auckland, 1010 , New Zealand

Allocation 6: 2489115 shares (1.80%)

INVESTMENT CUSTODIAL SERVICES LIMITED
Level 2, Asb North Wharf, 12 Jellicoe Street, Auckland, 1010 , New Zealand

Allocation 7: 2169602 shares (1.57%)

Grantley Bruce ROSEWARNE
Flat 15, 39 Trafalgar Street, The Wood, Nelson, 7010 , New Zealand
Director: Yes

Julie Ann ROSEWARNE
Flat 15, 39 Trafalgar Street, The Wood, Nelson, 7010 , New Zealand

Allocation 8: 1989644 shares (1.44%)

John William Dudley RYDER
9 St Barnabas Lane, Fendalton, Christchurch, 8052 , New Zealand
Director: Yes

Allocation 9: 1838603 shares (1.33%)

JPMORGAN CHASE BANK, N.A.
Level 13, Asb Tower, 2 Hunter Street, Wellington, 6011 , New Zealand

Allocation 10: 1785715 shares (1.29%)

Harvey Te Hawe RURU
245a Waikawa Road, Waikawa, Picton, 7220 , New Zealand

Susan Glenice PAINE
245a Waikawa Marina, Picton, 7220 , New Zealand

Historic data for shareholders ▸ Show History

Generated on Thursday, 28 November 2019 15:20:56 NZDT

Submission of applicant 26 Nov 2019:

83 The McGuinness Institute raises the fact that certain of NZ King Salmon's shareholders are from overseas which leads to the statement "it is easy to understand why NZKS tends not to focus on New Zealand shareholders or, more broadly, New Zealand's interests".[80]

84 NZ King Salmon is solely focused on New Zealand's interest. Without its operations in New Zealand, it has no business. Moving beyond that, a similar submission was made to the Salmon Relocation Panel. The Panel report stated as follows:[81]

> The Panel considers the law on this point is clear. For RMA purposes questions of overseas ownership are irrelevant. It is the activities and the effects which are to be assessed."

Financial Reporting Act 2013

45 Meaning of large

(1) For the purposes of an enactment that refers to this section, an entity (other than an overseas company or a subsidiary of an overseas company) is **large** in respect of an accounting period if at least 1 of the following paragraphs applies:

(a) as at the balance date of each of the 2 preceding accounting periods, the total assets of the entity and its subsidiaries (if any) exceed $60 million:

(b) in each of the 2 preceding accounting periods, the total revenue of the entity and its subsidiaries (if any) exceeds $30 million.

(2) For the purposes of an enactment that refers to this section, an overseas company or a subsidiary of an overseas company is **large** in respect of an accounting period if at least 1 of the following paragraphs applies:

(a) as at the balance date of each of the 2 preceding accounting periods, the total assets of the entity and its subsidiaries (if any) exceed $20 million:

(b) in each of the 2 preceding accounting periods, the total revenue of the entity and its subsidiaries (if any) exceeds $10 million.

(e) Interests of the public vs interest of the company

Companies Act 1993

131 Duty of directors to act in good faith and in best interests of company

(1) Subject to this section, a director of a company, when exercising powers or performing duties, must act in good faith and in what the director believes to be the best interests of the company.

7 The premise of this opinion, as explained in Part 2 below, is that climate change presents a foreseeable risk of financial harm to many businesses. We see particular risk arising directly or indirectly out of the impacts of transitioning to a lower-carbon economy. The legal impact of this for directors and scheme managers is as follows.

7.1 First, as explained in Part 3 below, directors of New Zealand companies are generally permitted, and will in many contexts be required, to take climate change into account when making business decisions. The requirement stems principally from the directors' duty to act with reasonable care.

But the big issue in the Marlborough Sounds ecosystem is that the ecosystem is already under stress from climate change (as evidenced by the existence of this application). Exponential change is not well understood.

The uncertainty is not over the direction of change but over the types of effects and how those effects interconnect (e.g. rising water temp, water rise, increase in storms). But perhaps the biggest uncertainty is over how humans and the environment (flora and fauna) will respond (or be unable to respond).

Therefore we should be doing all we can to take some of that stress out of the system. Refusing this application is one way of 'safeguarding the life-supporting capacity of air, water, soil, and ecosystems', but more will need to be done.

(Red for emphasis)

RMA 1991: Purpose and principles

5 Purpose

(1) The purpose of this Act is to promote the *sustainable management of natural and physical resources*.

(2) In this Act, **sustainable management** means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the *life-supporting capacity of air, water, soil, and ecosystems*; and

(c) avoiding, remedying, or *mitigating any adverse effects of activities on the environment*.

(Red, underline and italics added)

RMA 1991: Purpose and principles

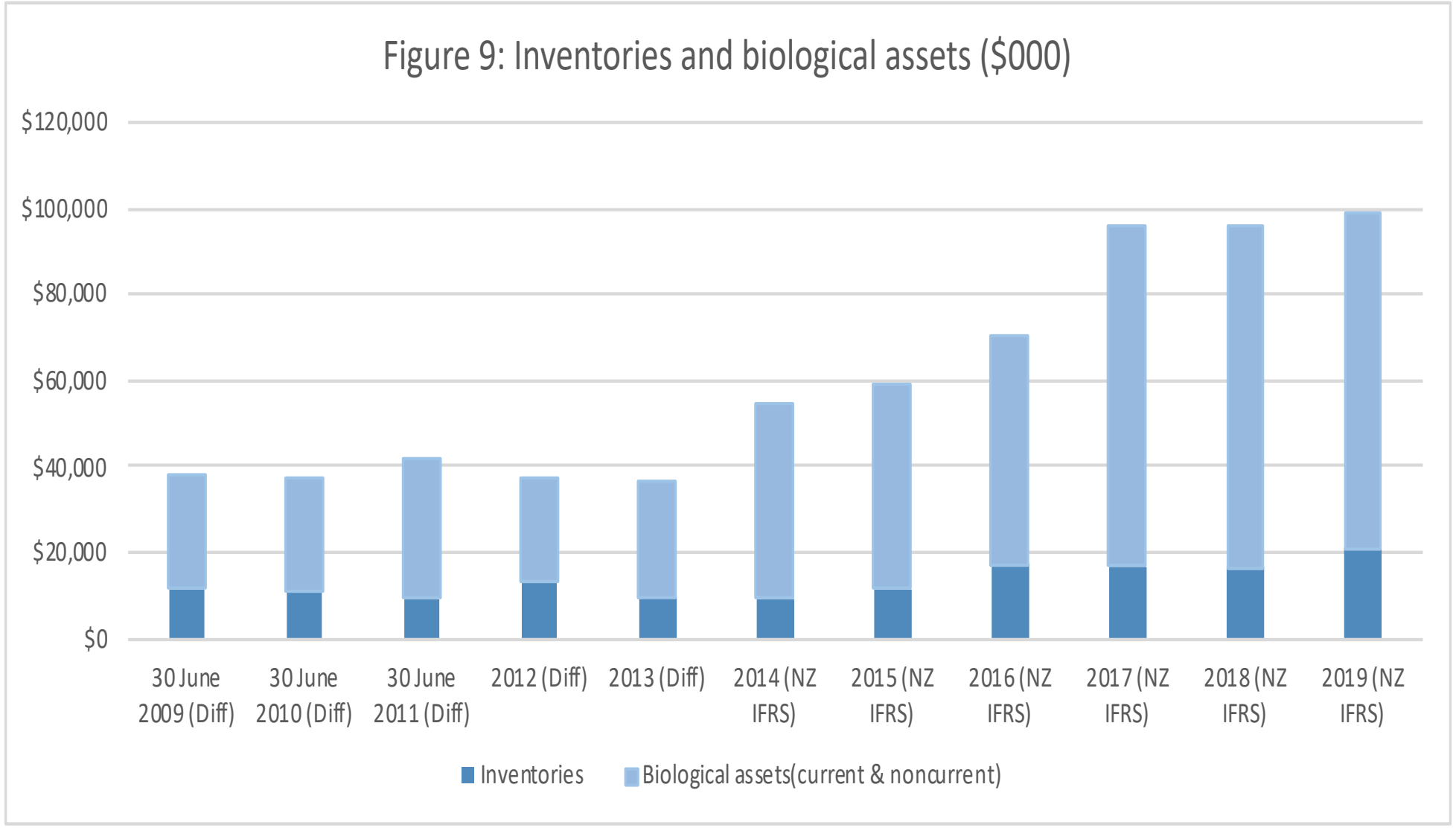
6 Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(Red added)

Updated Figure 9 originally published in *Working Paper 2017/02 Letter to the Minister on New Zealand King Salmon*



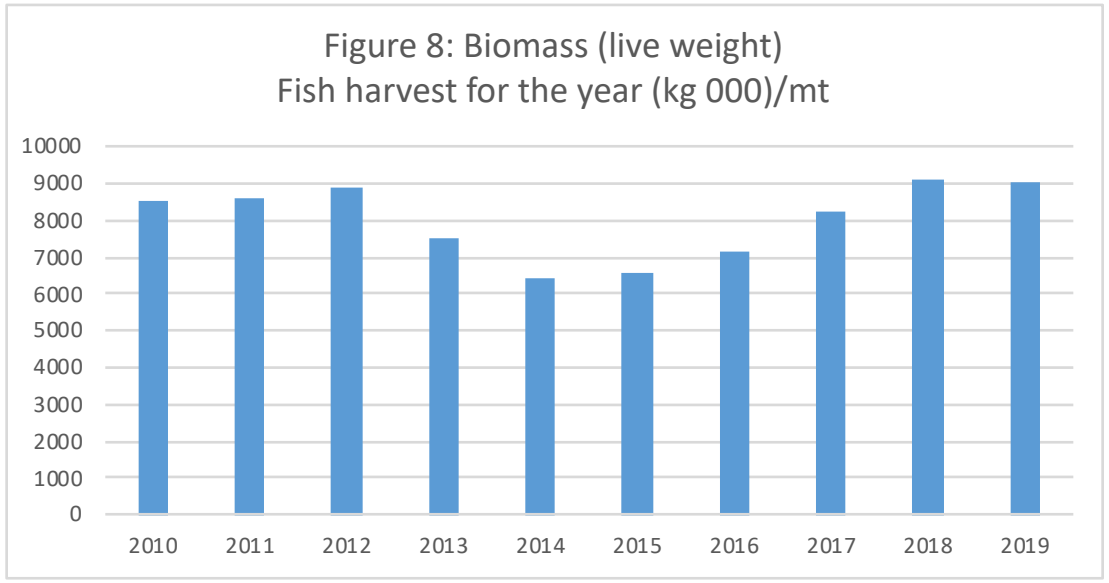


Figure 8: Biomass (live weight)
Fish harvest for the year (kg 000)/mt
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

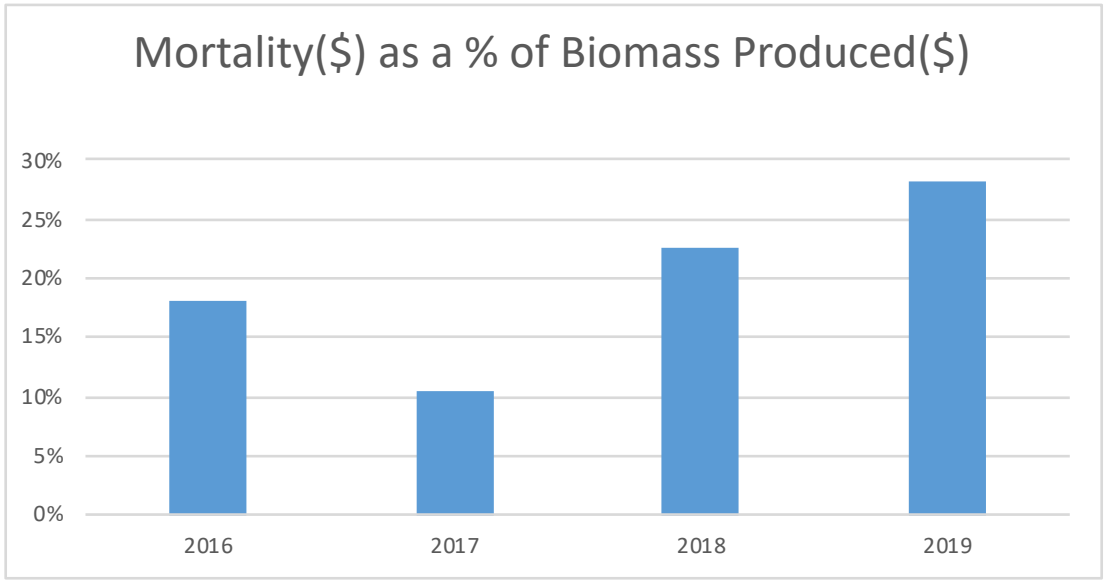

Mortality($) as a % of Biomass Produced($)
30%
25%
20%
15%
10%
5%
0%
2016
2017
2018
2019

Figure 5: Fish health events (mortalities) ($000) (sourced from Biological Notes in Financial Statements)

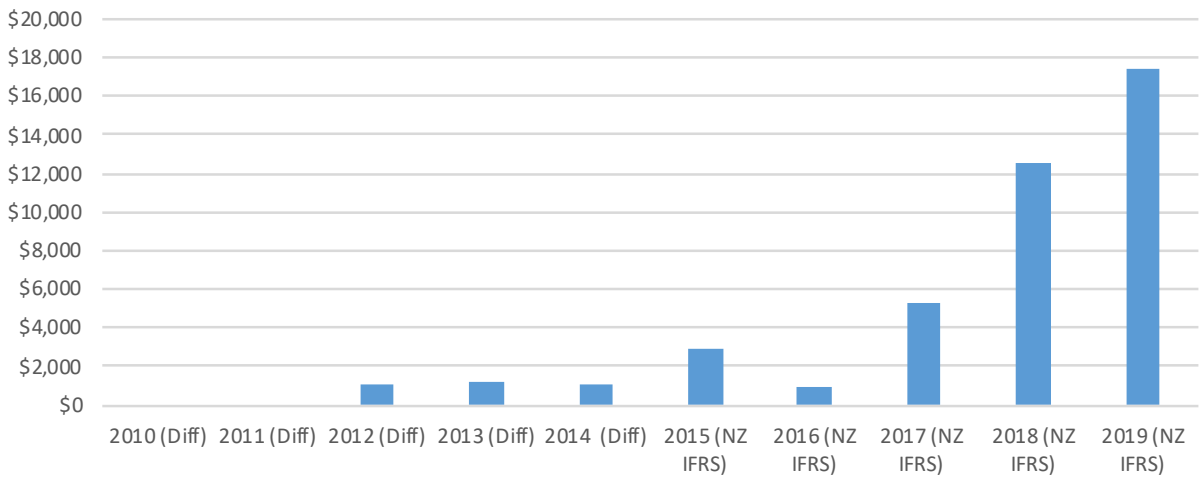


Figure 4: Net profit/loss for the year ($000)