

BEFORE SOUTHLAND REGIONAL COUNCIL

UNDER The Resource Management Act 1991

IN THE MATTER OF Applications by Jim Maass-Barrett and Zane
Smith for 16 ha of new mussel farms in Big
Glory Bay, Stewart Island

Sanford Limited
BY Submitter

STATEMENT OF EVIDENCE BY TED CULLEY

12 SEPTEMBER 2019

INTRODUCTION

1. My full name is Edward John Culley (Ted).

BACKGROUND

2. I am the General Manager Aquaculture for Sanford Limited ("**Sanford**") based at Havelock. I am responsible for managing all Sanford's aquaculture operations across New Zealand and have held senior management positions within the company's seafood and aquaculture operations for the past 25 years. I have spent my entire post-graduation working life in the food production industry.
3. In my aquaculture management role at Sanford I have overseen the development of the 3,600¹ tonne per annum salmon farming operations in Big Glory Bay, Stewart Island, as well as approximately 2025 hectares of water space, primarily growing Greenshell mussels in Big Glory Bay – Stewart Island, Coromandel, the Firth of Thames, Golden Bay, Marlborough and Canterbury. I have been a very active in Sanford's transition from frozen to fresh seafood and the launch of our Big Glory Bay premium brand in 2017.
4. I am a director of Aquaculture New Zealand, which is the sector representative body of fish farmers and processors. I am also an industry representative on the MPI National Direction team reviewing the aquaculture amendments intended to support the re-consenting of the bulk of marine farming resource consents across New Zealand in 2024.
5. I am a member of the Marlborough Working Group, which is a Marlborough Council initiative where community stakeholders have come together to work on the aquaculture provisions in the Marlborough Environment Plan.
6. I am a director of SpatNZ, which is the first commercial Greenshell mussel hatchery in New Zealand.

¹ 2018 GWT harvested

7. I have an in-depth knowledge of all aspects the aquaculture industry, both in New Zealand and internationally. I am very familiar with Big Glory Bay, Stewart Island.
8. I am authorised by Sanford to give evidence on its behalf. I have read the information about applicant's proposal and was involved in the decision for Sanford to submit against it.

SCOPE OF EVIDENCE

9. The purpose of my evidence is to:
 - 9.1 Set out some background about Sanford and its operations.
 - 9.2 Summarise Sanford's operations in Big Glory Bay and their importance to the company.
 - 9.3 Provide an overview of our concerns regarding these applications, with further details to be provided by other witnesses.
 - 9.4 Address matters raised in the applicant's evidence.
 - 9.5 Address matters raised in the section 42A report.
 - 9.6 My summary and conclusions

SANFORD CORPORATE PROFILE

Overview

10. Sanford is New Zealand's oldest publicly listed company. The company was listed in 1904 and is New Zealand's only publicly owned seafood company involved in harvesting, farming, processing, value add and sales across wild catch and farming. Sanford's aquaculture group is involved in both Chinook (King) salmon and Greenshell mussels with hatcheries, farms and processing capability in both species.

Salmon business

11. Sanford has three salmon hatcheries which support our farms that are located inside Big Glory Bay. We have a salmon processing plant in Bluff. There are more than 100 full time people employed across our salmon business including on the

farm, in processing and sales. Sanford has been farming Chinook salmon in Big Glory Bay since 1993, when it acquired Big Glory Bay Seafoods. Sanford has no other salmon farm sites in New Zealand or overseas and is the only salmon farm operator in Big Glory Bay.

12. Sanford spends approximately \$180,000 a year on local Island services such as the shop, hotel, water taxi. The Sanford salmon business contributes more than 20% in value to the wider Sanford group.

Mussel Business

13. Sanford holds consents to farm 2025 hectares of water space; growing Greenshell mussels across New Zealand, principally in Coromandel, Nelson-Marlborough, Canterbury and Stewart Island. Sanford has one mussel processing plant in Havelock, a 50% share in a joint venture mussel farming and processing operation located in Tauranga, a joint venture farm servicing company, a mussel spat rearing hatchery (developed with the Government under the Primary Growth Partnership Programme in Nelson, and a mussel drying (nutraceutical powder) plant in Blenheim.
14. The Sanford Stewart Island mussel farms have an important role in keeping our people employed when other growing areas are in spawn. Big Glory Bay mussels also supply our processing plants when our other areas at the top of the South and the North Island cannot supply, for example in the event of a bio toxin bloom. On Stewart Island we have 14 consents to grow Greenshell mussels, and ten consents that allow Sanford to grow both mussels and Chinook (King) salmon. The Greenshell mussel farms in Big Glory Bay assist the salmon farms by filtering the water. Sanford is the only finfish aquaculture company in New Zealand that is growing multi-species aquaculture, and which has filter feeders, such as Greenshell mussels, in such close proximity to the salmon farm sites. In this respect we are world leading, and other companies such as Leroy in Norway, who are one of the biggest salmon producers in the world, have recently visited us to learn how we do it.
15. The Greenshell mussel business contributes to over 15% of the total value to the wider Sanford business. The Big Glory Bay mussel farms were acquired by Sanford at the same time as we purchased Big Glory Bay Seafoods' salmon farms. Sanford's

Greenshell mussel business accounts for over 40% of the New Zealand industry and employs over 400 staff. Sanford has invested significant funds into developing a Greenshell mussel selective breeding and hatchery programme, and identifying and building capacity in mussel nutraceuticals.

Commitment to Sustainability

16. New Zealand's aquaculture products are internationally recognised as being of premium quality, safe to eat and grown sustainably. Great food grown in clean blue seas. I would like to see all aquafarmers committed to maintaining and growing New Zealand's seafood reputation both domestically and internationally.
17. Sanford has a bold vision to be 'the best seafood company in the world'. Central to this is the company's belief that the company and all its staff have a responsibility to do their best for the ocean environments in which we operate and the communities that grant us the social licence to undertake our business. Our intention is to farm our sites for eternity.
18. In that regard, the way that Sanford conducts itself in Big Glory Bay and interacts with the communities of Stewart Island and Bluff are very much at the forefront of my mind when I think about sustainability and cooperate responsibility. It has not been an easy decision for Sanford to oppose the application of Mr Maass-Barrett and Mr Smith - we are neighbours.
19. Sustainability is the foundation of Sanford's business philosophy and is the key to our on-going success (and reputation) as a quality seafood producer and supplier. To this end, the Company focuses on six performance outcomes, which are built into our business plans and operational strategies, as shown in Figure 1 below.



Figure 1: Sanford’s Sustainability Principles

20. The sustainability and ongoing wellbeing of our business (and other farmers in Big Glory Bay) requires sufficient space, adequate current flows, and can only be considered acceptable by us and our customers and stakeholders if the natural values of Big Glory Bay are protected for current and future generations. Sustaining, in particular, the natural values of Big Glory Bay is an essential component of our social licence to operate there – a licence that we value extremely highly and feel privileged to have.
21. To this end Sanford has voluntarily entered several recognised sustainability programmes including AquacultureNZ’s A+ Certification scheme, the BAP (Best Aquaculture Practices) Certification scheme, and ISO 1400. These sorts of initiatives, and the associated auditing processes, bring a level of transparency and excellence into our industry that is much needed, especially in the lead up to 2024, when all the existing marine farm resource consents in Big Glory Bay expire and must be reapplied for.
22. Sanford is an active contributor to a large number of community / charity initiatives throughout New Zealand. It is not something we publicise, and it is our way of “giving back” to the communities that provide us with our social licence. Sanford has gifted back to the Stewart Island community more than \$500,000 over the last ten years. Some examples are summarised briefly below.

23. Sanford has long had a sponsorship relationship with the Yellow Eyed Penguin Trust and our staff participate in the annual population survey work in the wider Patterson Inlet. We also invest into terrestrial predator control, endangered species work and beach cleans up around the Bay. We have hosted a series of community events including an Aquaculture Open Day in Big Glory Bay that other aquafarmers were invited to participate in. We appreciated the opportunity to collaborate.
24. Sanford has sponsored two part time teachers at the Stewart Island Halfmoon Bay School for the last ten years under the KiwiCan project, and earlier this year announced it will gift `10 cents from every salmon' processed at Bluff to the Stewart Island and Bluff communities.

AQUACULTURE ACTIVITIES IN BIG GLORY BAY

25. In my view, Big Glory Bay is the best performing salmon farm area in New Zealand. The Bay has exceptionally high water quality and is not influenced by sediment runoff or effluent discharges. Big Glory Bay comprises approximately 1,100 hectares of sheltered water and is surrounded on three sides by national park. It is an isolated semi-enclosed bay. There are no roads and no walking tracks into the Bay. The only access is by boat.
26. There is some clear space running down the middle of the Bay, which otherwise contains a number of Greenshell mussel or salmon farms. A large number of commercial and private recreational vessels are present and operating in the Bay, as discussed by Mr Eriksson.
27. The locations of all the current resource consents authorising aquaculture activities in Big Glory Bay are shown in Figure 2.

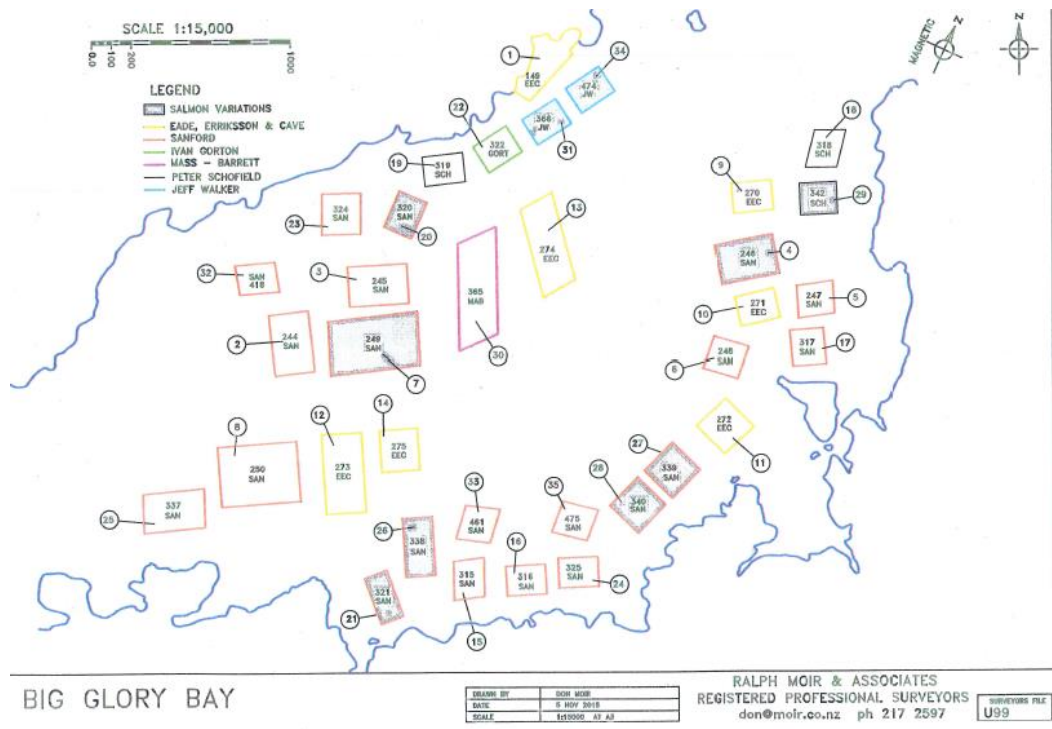


Figure 2: Resource Consents in Big Glory Bay

28. There are ten consented Chinook salmon farm consent areas in the Bay. These are shown in grey shading on Figure 2. Sanford owns or has an ownership interest in all ten salmon farm sites, which are also consented to grow Greenshell mussels and other shellfish species. These ten consents cover an area of 45.5 hectares. The Sanford salmon business employs 100 people in the salmon business – on the farm, in the Bluff processing factory and across a dedicated sales team.
29. As I will discuss in more detail later in my evidence, Sanford is in the final stages of planning a significant expansion of its salmon farming operation in Big Glory Bay, having been granted variations to its existing consents earlier this year. The salmon farm is managed according to a Big Glory Bay Farm Environment Plan that has been submitted to Environment Southland for technical certification. Production on the farm is constrained by a nitrogen cap, and a comprehensive set of environmental bottom lines which are monitored monthly. Sanford also undertakes the wider Big Glory Bay monitoring on behalf of all growers.
30. Within the Bay there are 35 consented mussel farm areas, 24 of these consents are exercised by Sanford (of which 10 can also be farmed in Chinook salmon, as

explained above). Sanford's mussel farms are edged in red in Figure 2 (above) and are unshaded. Sanford's mussel farm areas comprise a total area of 161.5 hectares (45.5 hectares of which can also be farmed in salmon). There is no restriction on Sanford as to how much of our consented farm areas can be covered in mussels at any one time.

31. All marine farming consents inside Big Glory Bay are valid until 01 January 2025 at which time Sanford will seek to re-consent. To this end I have been a member of the Government's Task Force on the National Direction on re-consenting.
32. In 2015, Sanford applied for, and was granted, consent to farm salmon on Marine Farm MFL 246 that at the time could only grow mussels. Then in 2016 we were successful in extending the size of the farm by 2.92 hectares. Importantly, these applications did not authorise the production of more salmon in Big Glory Bay – which is limited by a bay wide "nitrogen in fish food cap", but rather served to include MF 246 to the list of farm sites where salmon could be grown.
33. As part of these applications Sanford did two things – firstly, it proposed fallowing of the various salmon farm sites in Big Glory Bay (still a first for New Zealand) – a process by which the farmed areas are periodically "rested" before being farmed again – in much the same way that a sheep and beef farmer would rotate stock around paddocks. Secondly, Sanford surrendered an existing marine farm resource consent (MFL 323, AUTH203238) so that the overall footprint of marine farming space in Big Glory Bay was not increased. I have indicated the approximate location of the consent that was surrendered in the maroon box on the map below.

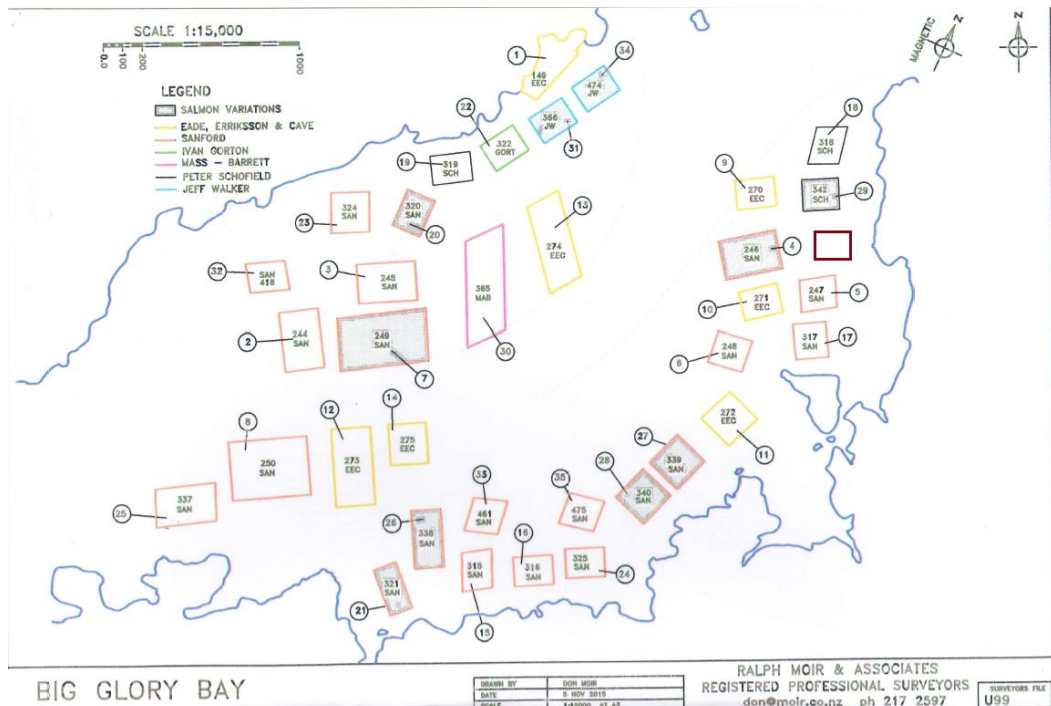


Figure 3: Resource Consents in Big Glory Bay – including approximate location of consent surrendered in 2015 (shown in maroon)

34. Most recently, Sanford has undertaken an extensive, technically rigorous process to obtain consent to increase salmon production on the existing ten salmon farm sites. This has involved increasing the “nitrogen in fish food” cap for Big Glory Bay which had not been reviewed since it was first established in the 1980s, despite significant advancement in modelling software and computer capability and the long history of environmental monitoring in the Bay. This work started in 2016 and concluded with our consent variation applications being granted earlier this year. Importantly, no “new space” was sought, just the ability to increase production from existing sites, in stages, subject to a rigorous farm management regime and monitoring of the water column and benthic environments.
35. This consented increase in nitrogen will enable Sanford to increase our salmon farm production. We plan to achieve an approximately 75% increase in pre-variation production by 2022, and plan to approximately double our salmon production levels by 2024. This involves a significant capital investment over the next five years, including the purchase of additional barges and servicing vessels and an upgrade in hatchery and processing facilities. The recent restructuring of the Bluff

processing plant to become a centre of excellence for salmon is another key milestone in the implementation of our growth strategy.

36. All the existing marine farm-related resource consents for Big Glory Bay expire in 2025, thereby enabling a holistic, integrated bay-wide reassessment of environmental effects at that time.

The Big Glory Bay Brand

37. In 2016 Sanford launched a premier “Big Glory Bay” salmon brand (see Figure 4 below). Big Glory Bay salmon is a highly sought after product and we anticipate its popularity is such that we will soon be unable to satisfy market demand. The product specifications of this brand determine some of the farming operational perimeters, the aim of the brand is to celebrate being ‘farmed in glorious isolation’.



Figure 4 Sanford’s Big Glory Bay salmon brand

38. We have invested heavily in promoting the Big Glory Bay brand, both in New Zealand and overseas. One of many similar examples is our sponsorship and trade display promotions at the ASB Tennis Classic for the last 2 years, as depicted in Figure 5.



Figure 5: Sanford Big Glory Bay sponsorship at the ASB Classic Tennis, 2018 and 2019

SANFORD'S CONCERNS WITH THE MAASS-BARRETT / SMITH APPLICATION

39. As foreshadowed, Sanford's two key concerns with the current application, are:
- 39.1 The potential for the new farms to restrict water flow in and around Big Glory Bay, and thereby restrict Sanford's ability to exercise its own consents to their potential; and
 - 39.2 Effects on safe navigation into and around Big Glory Bay.
40. I now briefly address each of these in turn, with further detail being provided by Mr Swart and Mr Eriksson.

Effects of Water circulation restrictions

41. Big Glory Bay is one of the few places in New Zealand where aquaculture occurs through the water column and both salmon and mussels are farmed. It is the only place I know that is in a semi-enclosed Bay. The bay is quite shallow (average depth of 14m), water currents are slow, and full flushing of the bay takes an extended period (about 28 days²).

² James, Hartstein and Giles "Assessment of ecological effects of expanding salmon farming in Big Glory Bay, Stewart Island – Part 2 Assessment of effects" 26 April 2018, p 7.

42. Production from Big Glory Bay mussel farms is already very slow, and it takes three-and-a-half to four years for them to grow to marketable size. This is twice as long as anywhere else in New Zealand, and is a function of where the spat is sourced (90 mile beach) and the low current speeds in Big Glory Bay, which in turn limits the amount of phytoplankton available for mussels to ingest. Further mussel farm development will only exacerbate this.
43. As part of our recent applications to increase the nitrogen in fish food cap we retained an internationally recognised expert, Dr Neil Hartstein of Aquadynamic Solutions to model the implications of increasing salmon production on water flows around Big Glory Bay. The hydrodynamic model designed by Dr Hartstein has been ground-truthed with actual information from Big Glory Bay and the wider environment, which has been collected over the last 20 years or so.
44. Based on the advice we have received from Dr Neil Hartstein (**attachment 1**), we are concerned that utilising an additional 16 hectares of water space in Big Glory Bay for mussel production may alter hydrodynamic processes in Big Glory Bay significantly, particularly water circulation patterns and phytoplankton distributions. Those changes have the potential to adversely affect the performance of existing salmon and mussel farms and will imperil the salmon farming initiatives we are in the process of implementing.
45. The applicant has provided no evidence to alleviate our concerns, despite setting these out in our submission, nor responded to our various requests to discuss them.
46. Mr Schofield echoes our concerns and also discusses this matter in his evidence. I note that another marine farmer in Big Glory Bay – Mr Gorton – has also corresponded with Sanford noting his concerns about the application. I have attached that correspondence below as **attachment 2**.

Navigation effects

47. Safe navigation, and in particular our ability to move our people, vessels, fish, mussels and other equipment safely around Big Glory Bay in all weather is of paramount concern. It is also important that we are able to undertake our farming operation, including vessel manoeuvring and the like efficiently and safely – in all

weathers and during the night. Fog in the Bay is quite common at some times of the year, adding an extra navigational challenge.

48. We are now in the final stages of the preparations to further develop the salmon farms (requiring a multi-million dollar investment), and we are particularly concerned that the Smith/Maass-Barrett applications will prevent us from exercising (and for some areas, safely accessing) our existing salmon farm consents. This would render part of our salmon farm business un-usable because we will not be able to meet our existing consent conditions.
49. The navigational concerns are elaborated on by Mr Eriksson, but in summary, Sanford considers that these current applications will not provide for safe navigation, continued use of our farms and will adversely affect the productivity of our consented marine farms.
50. The application materials, and Mr Engel's evidence, say that the application will involve "*occasional mooring of a vessel and barge within the site for set-up, harvesting and maintenance work*".³ It is not clear what this means or how regularly there will be vessels associated with the proposed farms present.

MATTERS RAISED IN THE APPLICANTS' EVIDENCE

51. Mr Maass-Barrett's evidence on page two says in relation to a growing cycle for Greenshell mussels, '*It's actually more of a 3 year or 3 year plus cycle in BGB*'. This is very much to my point at [42] above that mussels in Big Glory Bay are significantly slower growing than anywhere else in New Zealand. Insufficient information has been provided by the applicant to show what the cumulative effect of an additional 16 hectares of mussel farms (they propose 35 lines in total) will have to this growing cycle on the mussel farms that have already been consented in the Bay.
52. Mr Maass-Barrett also pulls out a quote from the main report attached to the application materials for Sanford's recent consent variation (at page 6 of his evidence), which is: "*Mussel farms act, albeit indirectly, as a mitigation measure limiting the impacts of extra loadings to the environment by consuming the algae*

³ Application, 2 May 2018, at page 3; Statement of Evidence Mr John Engel, at paragraph 8(d).

as they grow from the additional loading from the fish farm.” This quote is taken out of context – the potential effect of mussels removing nitrogen from the Bay was not incorporated into the modelling that supported Sanford’s consent variation, because Sanford took a deliberately conservative approach to its modelling and did not rely on the presence of mussels in the Bay as mitigation for its variation. Sanford’s application materials made this conservative approach clear.⁴ The conclusion that Mr Maass-Barrett makes about his application being necessary to balance the ecosystem in the bay is therefore not supported by evidence.

MATTERS RAISED IN THE SECTION 42A REPORT

53. The Officer has made minimal reference to the Sanford salmon farm business despite its significant presence inside Big Glory Bay and the important contribution it makes to both Stewart Island and the wider Southland economy. This is surprising given the recent hearing for variation of Sanford’s own marine farming consents, which was a significant process and which involved substantial discussion of this matter.
54. The Sanford resource consents for both mussel and salmon farm activity, and the recent variation that was granted to us, is part of the background environment of Big Glory Bay and should be recognised.

SUMMARY AND CONCLUSIONS

55. Sanford remains convinced that this application should be declined.

Ted Culley

12 September 2019

⁴ Sanford application for variation of marine consents, Assessment of Effects, Volume 1, Aquatic Environmental Solutions, 28 April 2018, at page 6. available online at [https://www.es.govt.nz/services/consents-and-compliance/notified-consents/Documents/2018/Sanford%20Limited/Assessment%20of%20Effects%20Volume%201%20-%20Aquatic%20Environmental%20Sciences\(Mark%20James\).pdf](https://www.es.govt.nz/services/consents-and-compliance/notified-consents/Documents/2018/Sanford%20Limited/Assessment%20of%20Effects%20Volume%201%20-%20Aquatic%20Environmental%20Sciences(Mark%20James).pdf).

Attachment 1 – Correspondence from Mr Hartstein

ADS Environmental Services Sdn. Bhd.
Lot G3/3 Ground floor Block B
Wisma Manikar, Lorong Manikar 1
Off Mile 2.5 Jalan Tuaran, Likas
88400 Kota Kinabalu, Sabah, Malaysia
Tel: 088 252 748 / 016 836 2530
Fax: 088 252 748
office@adseser.com

Dear Mr Culley

I have read both the Maass-Barrett and Smith 16ha Mussel farm application in Big Glory Bay along with a Cawthron document entitled "A review of water column aspects of a resource consent application for three shellfish farms in Big Glory Bay, Stewart Island" that you sent me.

I have examined both documents in regard to their description of the hydrodynamic implications of the proposed farms and any subsequent impact to phytoplankton dispersal within the bay. Unfortunately the application provides no evidence that they have studied the potential hydrodynamic implications of adding an additional 35 mussel long lines in Big Glory Bay.

I am surprised by this omission as I would expect that such a number of long lines will reduce current flow and seston supply both through the proposed farm and potentially several hundred meters down stream depending on the farm's orientation with current flow. A number of authors – Hartstein 2003, Plew et al 2005, Aure 2007 & Plew 2011 – have examined the hydrodynamic implications of mussel farm long lines in some detail and their work could be used as a basis to provide a review of the Maass-Barrett and Smith application.

Similarly, the Cawthron document failed to provide a review/study of the hydrodynamic implications of the proposed application without which I fail to see how they can make conclusions as to the suitability of the consent.

In short, without further study I fail to see how the application can be granted.

Should you need more information, please do not hesitate to contact me

Yours sincerely,



Dr Neil Hartstein
Project Manager
consult@adseser.com
+60 16 836 2350

Attachment 2 – Email from Mr Gorton

From: Gorton Fish [<mailto:gortonfish@xtra.co.nz>]
Sent: Saturday, 7 September 2019 12:45 p.m.
To: Alison Undorf-Lay <AUndorf-Lay@sanford.co.nz>
Subject: Big Glory Stewart Island

CAUTION: EXTERNAL

Hi Allison

I have a Marine Farm In Big Glory Bay SIT 322 and have been talking Jeff and Peter other marine farmers in the bay.

They suggested I email you.

I'm against 16 hectares of new space in the bay.

I don't think that the Council has taken into account the changes already approved by the Sanford Variation, which had considerable science backing the decision.

This is already a big change in the bay and I don't think there is enough room for another three farms.

I didn't understand what Jim was intending to do.

Thank you

Ivan Gorton

Gorton's Fisheries L.T.D