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Submission: Reject the Draft Fisheries Industry Transformation Plan

Recommendations

1. **The Minister rejects** the Draft Fisheries Industry Transformation Plan as proposed by Fisheries New Zealand and developed by Northland Inc and commercial fishing interests.
2. **The Minister directs Fisheries New Zealand** to explore the possibility of progressively buying out the inshore trawl fleet as a contribution towards enhancing abundance and biodiversity in inshore waters.
3. **The Minister supports** the Alternative Transformation Plan outlined in this submission, to encourage small-scale, low impact commercial fishing in regional communities, providing jobs, secure income and fresh fish for local supply.
4. **The Minister accepts the invitation to talk** with the submitters about the Alternative Transformation Plan as outlined in this submission.

Contents

Recommendations	1
The Submitters	3
Introduction	3
Inshore Innovation	4
The case for a new inshore fishing fleet in NZ	4
Why The Need For Public Subsidies?	5
A Truly Transformational Plan For Commercial Fishing	6
Context	7
Fisheries 2030	7
Capture Of The Regulator	9
Expectations Of Transformational Change	10
What Problem Does The ITP Seek To Address?	10
Where Did The Money Go?	10
The money has been extracted as rents and taken outside the value chain	12
The ITP is the Status Quo With Subsidies	12
Insincerity	13
Assumptions Atop Assumptions	13
ITP Will Invalidate Current Research	13
Subsidised Ship Building	14
An Alternative Transformation Plan	15
Return to abundance	15
Impose a Resource Rental.....	16
Return of small-scale fishing	16
De-Industrialise the inshore fisheries	16
Prohibit mobile bottom contact methods	16
Appendix 1	17
Transformation requires establishing resource rentals.....	17
Appendix 2	19
Iceland’s fisheries quota system	19
Fisheries benefits of small-scale fishing	23
Appendix 3	24
Pathway to Ecosystem Based Fisheries Management.....	24

The Submitters

5. The New Zealand Sport Fishing Council (**NZSFC**) appreciates the opportunity to submit on the Draft Fisheries Industry Transformation Plan developed by Northland Inc and commercial fishing interests and promoted by Fisheries New Zealand (**FNZ**). FNZ released the draft Plan on 27 April 2023, with submissions due by 11 June 2023.
6. The NZ Sport Fishing Council is a recognised national sports organisation of 50 affiliated clubs with over 36,700 members nationwide. The Council has initiated LegaSea to generate widespread awareness and support for the need to restore abundance in our inshore marine environment. Also, to broaden NZSFC involvement in marine management advocacy, research, education and alignment on behalf of our members and LegaSea supporters. legasea.co.nz.
7. The New Zealand Angling and Casting Association (**NZACA**) is the representative body for its 24 member clubs throughout the country. The Association promotes recreational fishing and the camaraderie of enjoying the activity with fellow fishers. The NZACA is committed to protecting fish stocks and representing its members' right to fish.
8. The New Zealand Underwater Association comprises three distinct user groups including Spearfishing NZ, affiliated scuba clubs throughout the country and Underwater Hockey NZ. Through our membership we are acutely aware that the depletion of inshore fish stocks has impacted on the marine environment and the wellbeing of many of our members.
9. Collectively we are '*the submitters*'. The joint submitters are committed to ensuring that sustainability measures and environmental management controls are designed and implemented to achieve the Purpose and Principles of the Fisheries Act 1996, including "maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations..." [s8(2)(a) Fisheries Act 1996].
10. Our representatives are available to discuss this submission in more detail if required. We look forward to positive outcomes from this review and would like to be kept informed of future developments. Our contact is Helen Pastor, secretary@nzsportfishing.org.nz.

Introduction

11. The commercial The [Draft Fisheries Industry Transformation Plan \(ITP\)](#) is a proposal from Northland Inc and commercial fishing interests to replace the current inshore fishing fleet with a smaller number of new, larger capacity vessels built in Whangarei. The economic case is supported by a report from NZIER for Northland Inc, "[Inshore Innovation: The case for a new inshore fishing fleet in New Zealand](#)," dated December 2022.
12. True transformation occurs when small-scale low impact commercial fishing returns to regional communities. People need to earn an income where they live.

13. Small-scale fishing enables people to make a living where they come from and where they want to live. It's about livelihoods for individuals and whānau businesses, not a few large industrial fishing boats taking all the local commercial catch and sending it off to distant processing centres in the hope of increasing profits.
14. Bulk harvesting inshore fisheries with new, powerful vessels will soak up available Annual Catch Entitlements (**ACE**) and kill off what's left of the resource. We hear coastal hapū in many areas bemoaning the loss of local fish resources. They go fishing and return disappointed and disillusioned.
15. In an attempt to restore local abundance the submitters have worked with many iwi/hapū to support them in implementing customary fisheries and area management tools such as rāhui, taiāpure and mātaimai. Over the past 10 years we have been involved in and submitted on at least 18 processes in support of specific mana whenua initiatives for managing local areas. However, these small areas have minimal impact on the overall stock size, particularly given the large expanse of the existing Fisheries Management Areas. For example, rock lobster in Te Puna Mātaimai, in the Bay of Islands, sits within the CRA 1 management area that spans both coasts around the top of the North Island and includes the Three Kings Islands 55 kms northwest of Cape Reinga.
16. The proliferation of, and increasing interest in, Māori customary management tools reflects mana whenua and community concerns about the degradation and biodiversity loss from inshore waters. This is what overfishing looks like, and unless transformation restores fish populations to above 50% of their unfished state the steady and tragic loss of abundance and diversity in local waters will continue.
17. On this basis, **we reject the ITP** and propose that buying out the inshore trawl fleet and recycling them or sinking the boats as habitat would have far greater environmental and economic benefits compared to the Northland Inc proposals being promoted by Fisheries New Zealand. We welcome a conversation with the Minister on an alternative Transformation Plan.

Inshore Innovation

The case for a new inshore fishing fleet in NZ

18. From the NZIER report we learn that this proposal arises from Northland Inc examining ways to increase economic activity in Northland. Kānoa – Regional Economic Development & Investment Unit (Kānoa), a branch within MBIE, had provided government funding from the Provincial Growth Fund to Northland Inc to investigate the feasibility of funding a fleet of inshore vessels built in Northland¹. While searching for ways to leverage the shipbuilding industry capacity in Whangarei, Northland Inc turned to the fishing industry as a likely partner given the ageing inshore fleet of commercial vessels.

¹ DOIA 2223-2628 Ministry of Business, Innovation & Employment. 23 May 2023.

19. The only stumbling block was that the fishing industry is broke. The fishing industry has no capital to fund investment in new vessels. This sent the project in search of alternative and inexpensive capital. There is only one source of soft money and that's us, via the government, so their proposition needed to make a business case for taxpayer cash to kick start the vessel replacement.
20. It would be necessary to make the case very compelling if it was to succeed because taxpayer subsidies to the fishing industry are intolerable. And, because the Labour government has been opposed to "all forms of subsidies to the fisheries industry" in the international arena². So a fishing expedition was launched to find any narrative that could be spun as a positive and avoid being obvious for what it really was - a cloaked request for subsidies for the fishing industry.
21. The bait offered were claims that public investment would kick start another shipbuilding industry in Whangarei, and that would provide a sister-ship design and build option for the industry, and a brochure of possible vessel configurations. After all, regional development is always a good seller and would satisfy the wants of Northland Inc.
22. The ITP goes further, promising a mix of environmental improvements: We will invest, you will invest, we promise to be less harmful to habitat, we promise this and eco that, just so long as we get brand new boats at discounted prices and can continue to trawl inshore stocks. These offers of improvement are largely worthless however as each requires a large investment to capture value and the same problem arises as with vessel replacements – the industry would still need to borrow funds against an uncertain future market.
23. No credible government can take this poorly designed ITP seriously.
24. The Draft Fisheries Industry Transformation Plan is not transformational. Rather, it is a cynical attempt to lure the government into forking out public money to quota owners so we taxpayers end up subsidising a new fishing fleet.
25. The ITP is simply a grab for public money with a glaze of jargon greenwashing every aspect in the hope it will distract the reader from seeing the obvious gift. No government will buy farmers new tractors when they get old, and no government ought to buy industrial fishing companies new boats – it's a joke.

Why The Need For Public Subsidies?

26. In 1986 the public accepted the Quota Management System (QMS) based on promises that it would enable the restoration of depleted inshore fisheries and make commercial fishing more economic. So, after 37 years, why does the industry need an injection of several hundred million dollars of public money? Where is the promised innovation, the research and development? Where is the restoration of depleted fisheries?

² <https://www.beehive.govt.nz/release/new-zealand-takes-action-ban-global-fish-subsidies>

27. We often hear glowing reports from quota owners and officials about how much money they make and the fishing industry's importance to the NZ economy. Yet, the same agency that built the business case for Northland Inc also advised that for the year ending March 2019 the seafood sector directly contributes around 0.39% of total Gross Domestic Product (GDP). If we strip out the deep water and aquaculture interests then the inshore fishery would be less than 0.1% of GDP. Economically insignificant, and if disestablished tomorrow the economy wouldn't notice with the labour eagerly accepted into the general labour pool. While also creating more opportunities for small-scale, innovative commercial and non-commercial fishing.

A Truly Transformational Plan For Commercial Fishing

28. Transformation of the fishing industry must start with restoring fish populations to a sufficient level that can sustain a high value fishery. More fish in the water would enable fishers to thrive even when using more selective, low impact fishing techniques; rather than relying on the returns from bulk harvesting using mobile bottom contact methods like trawling, dredging and Danish seining.
29. A government committed to true transformation will need to be bold enough to establish new governance structures to always maintain fish populations at a minimum of 50% of estimated, unfished biomass (B50).
30. Achieving B50 requires:
- a. a change from single-species management to Ecosystem Based Fisheries Management (EBFM);
 - b. the courage to challenge the perpetual fishing rights that were foolishly given away in 1986 as an incentive under the previous ITP – at the introduction of the Quota Management System (QMS); and
 - c. Acceptance that the promises made at the outset of the QMS - of improved environmental husbandry and a rebuild of fish populations - have not eventuated.
31. The submitters have invested heavily in a pragmatic, alternative to the QMS called Rescue Fish. Elements of [Rescue Fish](#) fit with the following transformative commitments -
- a. Government buy back of all inshore trawlers and all inshore Total Allowable Commercial Catches (TACCs).
 - b. Government tender for commercial fishing permits based on Resource Rentals, to generate a return to all New Zealanders.
 - c. Reserve inshore permits and fishing for small-scale, low impact, static gear fishers.
 - d. Local iwi/hapū and community establish and manage a spatial plan for their regional marine space.
32. Instead of replacing the old vessels with a fleet of larger, more powerful boats we could de-industrialise the inshore fishery through a buy-back of the old, inefficient vessels. After appropriate decontamination these old vessels could be recycled or sunk to enhance habitat restoration efforts (as currently planned in the Hawke Bay).

33. Under Rescue Fish, fishing permits would only be sold to active fishers i.e. No rent-collecting quota owners, meaning fishing becomes a more profitable enterprise delivering benefits to the fisher and their community. Small-scale fishers using lower impact techniques would be incentivised to target inshore waters, catching and landing fresher fish for supply to the local community and higher returns from exports.
34. Public monies will be required to make this transformation however, these are not subsidies for a select group of major quota owners, this will be an investment for the benefit of all New Zealanders.

Context

35. Before we delve into why we are even having this discussion, we first need to position this Draft Fisheries Industry Transformation Plan alongside others of its ilk.

Fisheries 2030

36. In September 2009 the government published [Fisheries 2030](#), the current operational strategic plan for Fisheries New Zealand. It is useful to examine that document in respect of its utility value and structure. It has served as the guiding Strategic Plan for both MPI and FNZ policies for the last 13 years and still does.
37. The guiding Principles for Fisheries 2030 include:
 - >> **Ecosystem-based approach:** We apply an ecosystem-based approach to fisheries management decision-making.
 - >> **Conserve biodiversity:** Use should not compromise the existence of the full range of genetic diversity within and between species.
 - >> **Environmental bottom lines:** Biological standards define the limits of extraction and impact on the aquatic environment.
 - >> **Precautionary approach:** Particular care will be taken to ensure environmental sustainability where information is uncertain, unreliable, or inadequate.
 - >> **Address externalities:** Those accessing resources and space should address the impacts their activities have on the environment and other users.
38. As with most FNZ plans, Fisheries 2030 has largely been ignored by both the policy and operational arms of FNZ. The Plans tend to be very aspirational, talking about being the best at everything without mentioning anything specific or providing likely budget costs. This allows for all sorts of promises to be made without committing to anything or being liable for achieving any particular aspiration state.
39. The same aspirational language designed to give comfort and imply stewardship and care is found in the ITP.[At 55]

Strengthening environmental performance

Fishing with care and precision to support healthy ocean ecosystems

1.1 Invest in innovation to accelerate selective fishing and further reduce benthic impacts and protected species interactions:

1.1.1 establish a joint industry / government project to source and develop technology that minimises adverse impact on the ocean floor to the maximum extent practicable; and

1.1.2 review regulatory settings and operations to identify and mitigate regulatory barriers to fishing innovation.

1.2 Incentivise and facilitate fast adoption of proven efficient and environmentally sustainable fishing gear and methods by fishers.

1.3 Investigate opportunities to apply new methods of habitat restoration and enhancement in New Zealand, for example: sea ranching, artificial upwelling, seagrass and kelp restoration.

Utilising data to fish selectively and with least effort

1.4 Advance the use of marine and fisheries data and analytical and spatial models to support fishers to avoid unwanted catch (including protected species) and maximise target catch with the least effort:

1.4.1 address barriers to the regular and timely release and sharing of data collected from fishers, including reviewing the Guidelines for Fisheries Data Release;

1.4.2 build technology and products that leverage data to support fishers; and

1.4.3 use data to support timely decision-making by fishers and fisheries managers to manage local distribution, seasonal variation, and effects on the aquatic environment.

Reducing carbon footprint and improving resilience to climate change

1.5 Invest in a sector decarbonisation programme to connect New Zealand seafood businesses with world-class innovation and best practice guidance including developing an industry benchmarking and standardised measurement tool to support businesses to measure and reduce their carbon footprint.

1.6 Invest in innovation to reduce the environmental impact of airfreighting premium seafood to international markets.

1.7 Support the development of an adaptation pathway framework to assist the sector prepare for, and adapt to, climate change.

Priority areas and key themes

Strengthening environmental performance

→ *Fishing with care and precision to support healthy ocean ecosystems*

→ *Utilising data to fish selectively and with least effort*

→ *Reducing carbon footprint and improving resilience to climate change*

Improving profitability and productivity

→ *Increasing exports of high value seafood and bioproducts to discerning international customers*

→ *Improving returns and investment across the value chain*

Supporting people and communities

→ *Supporting people in the industry to thrive*

→ *Developing the workforce to grow the industry*

→ *Supporting communities to access local seafood*

40. During 2009 and 2010 the submitters responded to the government's proposed Fisheries 2030 strategy and subsequent [performance indicators](#). Comprehensive submissions were made and much work went into developing an affordable, practical [alternative strategy](#). This was momentous in that it was the first time that commercial and non-commercial fishing and environmental interests, iwi/hapū, and representative organisations had successfully developed a collective vision to increase the value derived from fishing to achieve abundance, a thriving marine environment and fish for the future.
41. The alternative strategy, goodwill, and collaborative effort was ignored so it's no surprise that 13 years later we are still confronted with a commercial fishing industry that is struggling to stay afloat without more government funding, and despite various taxpayer injections via the Primary Growth Fund.

Capture Of The Regulator

42. An effective regulatory regime is necessary for fisheries to be managed and operated efficiently and equitably in the public interest. It is inevitable that the regulator will become captured, but the degree of capture will vary across agencies from low to high. Strong capture violates the public interest to such an extent that the public would be better served by either (a) no regulation of the activity in question – because the benefits of regulation are outweighed by the costs of capture, or (b) comprehensive replacement of the policy and agency in question (Carpenter and Moss 2014: 11). 48.
43. Numerous studies show fisheries in general suffer from strong regulatory capture. New Zealand is no different and likely more susceptible given the small size of our industry on a worldwide scale, and the revolving door of staff between agencies and the industry.
44. Given that the ITP has been generated in concert by an industry lobby and government agency it is incumbent on the Minister and her Cabinet colleagues to examine this proposal with greater scrutiny to protect against any accusations of bias or inappropriate use of taxpayer funds.
45. We are seriously concerned that the recommendations within the proposed plan are designed to serve the private interest of a few quota owners at a direct cost to the public. No public agency should be able to abandon the public interest so completely and openly – there must be consequences.
46. The ITP reinforces claims made previously that issuing perpetual fishing rights under the Quota Management System has led to regulatory capture. While the reliance on rights and incentives dominate governance, we remain concerned that Fisheries New Zealand will become increasingly captured and continue to act as a private lobby for industrial interests.

47. After a 37-year failed experiment in commercial rights based management, the Quota Management System has not delivered the promised stewardship and has left New Zealanders grappling with environmental, economic and food security crises.
48. It is time for a transformational change in governance.

Expectations Of Transformational Change

49. The ITP fails to address several aspects of commercial fishing that pose a high risk to ecosystem resilience and productivity. Benthic impact and non-selective fishing are two obvious ones.
50. Thirteen years ago Fisheries 2030 included a strong section on addressing environmental impacts and externalities with none of the outcomes being achieved. No one should expect anything different from this ITP – because it's 90% sugar coating a request for taxpayer subsidies.
51. Currently, the environmental, cultural and future costs of fishing are borne by the public while the profits accrue to quota owners. The ITP fails to change this paradigm so the promises of greater environmental performance are disingenuous.
52. For all intents and purposes, the inshore commercial fishing industry is bankrupt. It lacks the capital to meet its environmental obligations and the capacity to replace old equipment. There is nothing particular about the industry that would lead to this situation – or is there?

What Problem Does The ITP Seek To Address?

53. Thirty seven years after being given exclusive and protected access to New Zealand's fish stocks for commercial purposes the industry has failed to set aside capital for vessel improvements and replacement. This is an industry that claims financial hardship and now asks the government to provide the capital they claim they don't have to replace and modernise their fishing fleet.
54. Large fishing companies maximise their returns by providing ACE to contract fishers using old boats who bear all the risks of being at sea, maintaining vessels, and finding good crew. These rent-seekers charge the fishers for the ACE, and then specify the price they will pay per kilo for the fish, and where it must be landed. The ACE provider can dictate terms as the sole purchaser.

Where Did The Money Go?

55. Over the past 30 years more than 10 million tonnes of fish have been taken from New Zealand waters and sold without resource rentals attached.
56. The QMS was originally established with resource rentals in recognition that private interests were exploiting a public resource. In other words, acknowledging that the fish are not the

property of the fishing industry, they are common pool resources owned by the citizens of New Zealand, yet they were given to quota owners free of charge, as if the fish have no value and are just given away as worthless.

57. When initial allocations for commercial utilisation were made in the 1980s the first act in that transformation plan was to remove licences from all “part time” commercial fishers, with no compensation. That had a profound effect on regional and coastal communities, denying many families a supplementary income and a dependent food source for the whānau.
58. At the introduction of the QMS in 1986 many fish stocks were overallocated. More than \$40,000,000 of buy back compensation payments were made to those who had already benefited most from fishing down abundant coastal fisheries. Thirty seven years later many stocks still have ridiculous over-allocations. Some stocks still suffer the absurdity of grandfathered entitlements (28N rights) because they have not rebuilt in 37 years.
59. Over allocation and 28N rights are barriers to successfully restoring our inshore fish populations to abundance for the benefit of future generations.
60. Prior to the QMS’s introduction there were warnings that quota would be monopolised by those with the most cash. Those warnings were ignored. Over the past 37 years the entitlements that were originally given away for free, to companies or fishers with catch histories, have now been aggregated. Now, 100 entities own 90% of the catch entitlements with 10 entities controlling 78% of those entitlements.
61. The QMS is structured to enable the public’s fish to be given away, for free, to owners of Annual Catch Entitlements (ACE). On receipt the ACE holder can sell their entitlement on the open market.
62. **The price of ACE is best described as the economic rent** generated from a particular species. The economic rent varies widely between species. For example, the economic rent for rock lobster may be \$40 per kilo, and some over allocated species will be inexpensive, for gurnard it may be 40 cents per kilo.
63. The economic rent generated from commercial use of our common pool resources are privately captured by the ACE seller. This rent is simply a cost, because it adds no value to the product. Over the last 30 years ACE holders have collected over \$1.0 billion as economic rent.
64. To our collective detriment, economic rent adds nothing to the value chain, it is the surplus generated by excluding competition and thereby permitting higher margins that would otherwise occur. In New Zealand, the QMS defends the incumbent quota owners and corporates from competition, enabling a low-cost, rent seeking industry. It's very feudal in nature.
65. A contemporary example of rent seeking is the recently announced transfer of inshore ACE from Sanford to Moana, at an annual cost of \$11 – 13 million per year. This rent is received by

Sanford by virtue of being a quota owner. Sanford need do nothing to receive this rent, it is unearned. Yet to Moana it is a real cost which must be accounted for in their sales price - whoever buys fish from Moana must meet this cost. **So, we end up paying economic rent to Sanford for fish they don't own! For our fish.** It is ludicrous and a gross misuse of public assets.

The money has been extracted as rents and taken outside the value chain

66. It's no wonder that insufficient capital has been accrued by fishers for vessel upgrade as they ultimately pay the economic rent to the quota owner, as the landlord. This dynamic has seen a collapse of the small inshore owner-operator fleet.
67. Low cost, low value, no competition, no resource rental - an economic model that will always fare poorly at the first sight of head winds. There is simply nothing in reserve to weather a freight rate spike, a resource contraction, a global pandemic or fuel price increases.
68. Studies clearly show that establishing a rent seeking industry through the imposition of the QMS will always end in catastrophe, both economically and environmentally. Now we are discussing a plan that envisages smaller boats replaced by larger inshore vessels capable of holding 140% more, potentially catching 1000 tonne per year.
69. If the ITP authors were authentic, their proposal would address these obvious obstructions to having a successful high value, low impact industry operating inshore. Instead, we're fed a plan full of aspirational jargon that attempts to disguise the bankruptcy of the inshore fleet and the lack of capital to replace the decaying fleet.

The ITP is the Status Quo With Subsidies

70. Currently, the movement of capital and labour in and out of the industry is tightly constrained by the nature of the QMS that effectively creates an oligarchy of corporate quota owners. This has proven to be a disincentive to any small operator or commercial fisher trying to innovate. The ITP promises better days ahead if taxpayer dollars can be spent on new vessels, in anticipation of creating value that benefits quota owners.
71. The lack of any reference to the privately collected economic rent that has deprived the smaller operators and fishers of capital merely confirms the insincerity of the ITP.
72. If improved economic performance is the goal, then the obvious starting point is to break down the monopoly of the incumbents who are trapped in a rent seeking industry.
73. **While rents are collected privately from using a public resource there is no case to be made for public subsidy.**

Insincerity

74. The industry has had 13 years since the Fisheries 2030 strategy was implemented to invest in mitigating the effects of fishing on biodiversity, yet the only time it is mentioned is when a [Judicial Review of CRA 1](#) found that there is no mitigation or compliance with environmental principles in the Fisheries Act³. No one could reasonably expect any change in behaviour now that the industry is making a play for public subsidies. The promises made in the ITP are just as empty as those so sincerely made 13 years ago.

Assumptions Atop Assumptions

75. The ITP glosses over many of the assumptions made in terms of future performance and utility of information. The Northland Inc report, which forms the basis of the ITP proposal for taxpayer funds, suggests that 169 vessels between 16 and 24 metres long can be replaced by 69 new vessels, but more likely around 100. Those 100 vessels will have around 140% increased hold capacity, which means larger vessels working off our beaches for multiple days, returning with fish degraded by days at sea. Hardly a recipe for high value returns from capturing our commonly owned fish.
76. While the ITP discusses building these new vessels to be capable of conversion to multiple uses, it is not clear if the sister ship model encompasses the requirements for tuna longlining boats, purse seining, trawling and potting. It is hard to imagine a design that could cater for such diverse uses.
77. The ITP proposes an initial government investment of \$18,000,000 to purchase the first three new vessels based on a promise from the fishing industry to invest in the remaining 97, if 100 are to be built in New Zealand. The \$46,000,000 business case clearly shows it will be cheaper to build these vessels offshore, and as above, there is no available industry funding for this project. This proposal is unaffordable, especially for larger vessels not manoeuvrable or suitable to be deployed in inshore fisheries.
78. If the ITP proceeds, the economic incentives will again drive operators to continue to bulk harvest fish in inshore waters, delivering low (not premium) quality fish to distant ports, and denying local enterprises while continuing to degrade biodiversity and reduce productivity.

ITP Will Invalidate Current Research

79. A plan based on fleet conversion will invalidate the current time series of data including Catch Per Unit of Effort (CPUE) indices. Vessel selection criteria generally needs five years of catch from a vessel to estimate the vessel coefficient used to standardise CPUE. Data collection is now so fraught that even in Snapper 1, the most data-rich inshore stock, year round bottom longline CPUE has been dropped and replaced with spring/summer trawl CPUE in the recent stock assessment as an index of snapper abundance.

³ The Environmental Law Initiative v Minister for Oceans and Fisheries [2022] NZHC 2969 [11 November 2022]

80. **Fleet conversion will mean five years without abundance and index required for adequate management.**
81. Around \$50,000,000 is spent annually on research, with a large proportion of the costs of researching inshore stocks landing on the taxpayer. CPUE is the most common data set used to inform stock assessments and management decisions. The new fleet will interrupt the time series. This is a serious issue that cannot be ignored.
82. The ITP fails to detail the alternative data sets that will be gathered and the costs associated in collecting and analysing that new data, and how the additional costs will be attributed.
83. Successful stock assessments must have an index of abundance. Fleet changes, gear modifications and changes to fishing techniques will make CPUE from the Electronic Reporting System useless as an index of abundance.
84. The extra costs associated with future research needs to be factored into ITP discussions, fishing is not just about the boats. We will still require ongoing fisheries independent surveys or tagging studies for the main inshore fisheries. The costs could be mitigated by the mandatory use of monitoring cameras over an onboard conveyor or chute, and use of AI, to record location, size and species of all catch as it is packed or processed. Despite industry resistance, the government has already committed around \$60,000,000 of taxpayer funds to cover most of the costs associated with onboard cameras.
85. These factors are not taken into account in the ITP.

Subsidised Ship Building

86. It is rather ironic that some vessels in need of retirement were built the last time government decided to subsidise ship building and industry expansion. That scheme also employed the sister ship model, in efforts to reduce costs – there is nothing novel in this approach.
87. A capable ship building industry already exists in Whangarei, and elsewhere, that can build and service vessels of the type being suggested for replacing the inshore fleet. That is not an issue.
88. If the ITP is serious about the environment, another factor that needs to be offset is the environmental impact of these proposals. What is the carbon footprint of construction of a new high powered multi-tonne steel vessel compared to repowering a fit-for-purpose existing, modern vessel from New Zealand or overseas? How will this construction help New Zealand achieve its agreed carbon emission reductions?
89. What is an issue is the unspoken outcome of embracing the concept that low capital, small-scale fishing is to become history and that it will be replaced with high capital, large volume industrial fishing vessels. Experience shows us that this approach leads to fewer employment opportunities, especially in the regions.

90. Industrial scale fishing vessels are not flexible and need large ACE volumes to operate economically. Multi-day trips mean most of the fish landed is not “fresh”, large volumes of fish can only be landed at the main ports and exported to avoid flooding the local market. **The Plan is not transformational when New Zealand snapper will remain cheaper to buy in Sydney than in Auckland.**
91. We have witnessed over the last 60 years that the inshore fish stocks are not able to survive being prosecuted by industrial methods. Stocks of all but a couple of species are at very low levels when compared to reports of historic abundance. **Further consolidation and increasing the size and catching capacity of coastal fishing vessels is not in the public interest.**
92. Given the current environmental, economic and cost of living crises, it is unlikely the public will perceive any value for money in buying a fleet of new industrial fishing vessels. The public already object to the use of mobile, bottom contact fishing methods such as trawling, dredging and seining in inshore waters.
93. Lowering the costs of capture merely increases the amount of rent extracted and locks the future fishing industry into high volume, low value production.
94. **The social licence for the commercial industry will depend on the adoption of ecosystem based fisheries management, not bulk harvested fish from inshore stocks depleted by bottom trawling and Danish seining.**

An Alternative Transformation Plan

95. A genuine transformative plan would, at the very least, recognise that New Zealand needs to abandon the demonstrable fantasy of management by privately owned quota and introduce effort limits alongside output limits.
96. As we developed our [Rescue Fish](#) alternative to the QMS it became obvious that the three pillars necessary to reconstruct the inshore fishery are:
 - a. Contestable permits sold to fishers which include a resource rental;
 - b. Output limits in the form of total allowable quota limits; and
 - c. Input limits for each method with adequate monitoring.
97. Persevering with the current management system is to prolong the agony of steady loss of abundance, diversity, and productivity, and makes any claims around transformation asinine.

Return to abundance

98. The urgently needed transformation is to establish in law the obligation to sustain fish stocks above 50% of their estimated unfished size. That is B50, which is essential to increase population resilience to adverse climate events and increase ecosystem function.

Impose a Resource Rental

99. There is simply no excuse for the common pool resources of Aotearoa to be given away free of charge. See Appendix 1.

Return of small-scale fishing

100. The benefits of high quality, low catch, low carbon, low biodiversity impact, from a fleet of local, independent fishers is lost as we retain rent seeking governance. The current incentives are to maximise the rents, not create value or maximise employment as arises from having regionally based, small, efficient fleets. Quota management systems are not designed to benefit small-scale fishing and are the primary international driver for the loss of regional fleets. See Appendix 2.

De-Industrialise the inshore fisheries

101. One major ecological issue to confront is the de-industrialisation of the inshore fisheries. At the core of the abundance and diversity losses over the last 50 years has been the industrialisation of the inshore fishing fleet. This has increased the carbon footprint, decreased employment, and lost value for New Zealand Inc. This is a pattern seen in other jurisdictions that have implemented transferable quota schemes, including Iceland. See Appendix 2.

Prohibit mobile bottom contact methods

102. Phase out mobile bottom contact fishing in the Territorial Sea, out to 12 nautical miles from the coastline (12nm). The habitat belongs to the creatures that rely on it for their life stages and is not an unavoidable cost of fishing.
103. Ecosystem Based Fisheries Management (EBFM) requires increased environmental awareness and restoration of productive benthic ecosystems. The Fisheries Act has strong Purpose and Principles designed to guide and constrain decision makers.
104. The cumulative effects of fishing on habitat and associated species has to be fully accounted for by decision makers, as confirmed by Churchman J in the CRA 1 proceedings⁴. See Appendix 3.

⁴ [At 22]

Appendix 1

Transformation requires establishing resource rentals

1. What is a resource rental?

- a. A resource rental is a tax applied to the commercial use of natural resources.
- b. The Australian Treasury favours resource rentals and these deliver substantial returns based on the importance of extractive industries to Australia's economy (Australian Treasury 2009).

2. What is the purpose of a resource rental for fish?

- a. A resource rental is to reflect that the fish harvested for commercial purposes are common property and those that catch the fish and sell them ought to pay something back to the community.

3. Daniel Bromley describes the role of resource rentals as follows:

The royalty payment for fish calls attention to one of the fundamental laws of economics—individuals desire too much of those things that are free. In fisheries, this means that firms who pay nothing for fish will be overly dedicated to catching every last fish they can. A unit price for every fish caught—the royalty—acts as a damper on effort for the simple reason that it lowers the net economic value (marginal revenue) to the firm of each additional fish caught and sold. To non-economists this finding may seem counter-intuitive. They may ask: "...if each fish is worth less to the firm (because of the need to pay a royalty on that fish) why isn't this a strong incentive to try to catch more fish?" This supposition is flawed because it focuses on total revenue to the firm. The second advantage of this new governance regime is that the private sector will no longer be given free fish that belong to the nation state. In contrast to rationalization schemes, the royalty auction assures that the most efficient firms will gain access to the fishery. The old "grandfathering" in which firms aggressively "fished for history"—often driving stocks to perilous lows—will be replaced by the only means whereby it is assured that the most dynamically efficient firms will enter a fishery. In addition, the ultimate market price to consumers—whether in retail establishments or in restaurants—will be as low as economically possible. All monopoly incomes will be stripped out of the fishery.

The correct answer, clarified by analysis at the margin, is obvious. Costs to the firm are largely a function of its time spent on the water in pursuit of fish. Those variable costs, calculated as a function of fishing effort, increase at an increasing rate as vessels search farther and longer for more fish. The value of each additional fish its ex vessel price—can be considered a constant to each firm. We therefore have a constant marginal value of fish caught (its ex vessel price) being reckoned against a rising marginal cost of finding and landing that fish.

If we now introduce into this equation a fee for fish—the royalty—it should be obvious that the resulting drop in net value to the firm from catching one more fish will cause the firm to reduce its increasingly costly pursuit of more fish. After all, each fish—once the fee (royalty) has been subtracted—now brings less revenue to the firm than in the absence of the fee. Each firm will, in the presence of a royalty, have a reduced interest in searching for and landing an additional fish. We now see that a fee for fish not only encourages firms to stop short of seeking their full TAC, the royalty is an added inducement for reduced harvests and hence it encourages stewardship and sustainability.

Most important, national treasuries—and perhaps local communities—will finally receive an owner's share of the wealth of ocean fisheries. It is time to end the giveaways.

4. What happened to the original resource rentals?

- a. When the Quota Management System was introduced in New Zealand in 1986 quota holders were required to pay a resource rental on their annual catch of fish. The tax was terminated in 1994 and replaced with a user pays, levy based system. Over time the cost recovery levies collected have not kept pace with the actual cost of administration, monitoring and research of fish stocks exploited by commercial fishers.
- b. Greenland, Iceland and the Faroe Islands all have resource rental regimes in place. Iceland's tax contributes around 1.2% of national revenue (Gunnlaugsson, Kristofersson, and Agnarsson 2018).

5. Why are resource rentals required?

- a. The lack of a resource rental on commercial catch leads to overfishing and poor husbandry of the marine environment from where the catch is taken.

6. What are the benefits of a resource rental?

- a. Applying a resource rental to commercial catch will incentivise fishers to look after the resource and protect the marine environment that supports productivity.
- b. A resource rental will incentivise fishers to innovate, to generate maximum returns from each fish harvested and improve productivity.
- c. Revenue generated from resource rentals can be used to fund governance, management and research initiatives.

7. Resource rentals form a fundamental pillar of any fisheries management system. To be transformative, resource rentals ought to apply to both inshore and deep water stocks.

8. The fish are not free for the taking, they belong to all New Zealanders, and those who profit by monetising fish owe the citizens a rent.

Appendix 2

Iceland's fisheries quota system

1. In New Zealand, Iceland is portrayed as having a successful fisheries management system where fishing is profitable and fish stocks are protected. This narrative is most often told by people promoting transferable quota management and those seeking to justify New Zealand's Quota Management System (QMS).
2. Rarely discussed in these conversations is the impact that the Icelandic Individual Transferable Quota (ITQ) system had on small-scale fishers, their livelihoods, families and coastal communities.
3. In 1990 around 1040 small-scale fishing boats were included into the ITQ system alongside the large company, industrial vessels fishing deep sea species. Many small-scale fishers, including the Icelandic National Association of Small Boat Owners, objected to amalgamation with the industrial fleet.
4. By 2017 only around 250 of the 1040 small-scale boats remained.
5. This loss of small-scale fisheries and local fishing families has had a profound effect on coastal communities.
6. "There must be something wrong with a fishery management system that takes out those who are the most sustainable, spend the least amount of fuel, and use fishing gear that doesn't harm the environment. A fishery management system that takes these boats out is a bad system." Arthur Bogason, President, National Association of Small Boat Owners, Iceland.
7. The change in the small-scale fleet of Iceland following the introduction of their ITQ scheme is depicted below. In 1990 there was a large small scale fleet that by 2017 had all but disappeared.

Hall • Veldi • Gústaf • Vilma • Dóttir • Rán • Hervar • Harðis • Hlóg • Fríðbjörg • Skæringer • Heiðrún • Edda • Steinunn • Logey • Þorfinna • Elsa • Jósefína • Maren • Sía • Steina • Dalmann • Elja • Ólaf • Regína • Þorgeirur • Talla • Jónas • Hléddan • Ógmundur • Heiða • Eysteinn • Hugrún • Lárus • Fönn • Adal • Sigþór • Andrés • Eir • Katrín • Ásbjör • Steingrímur • Bergþórs • Ymir • Róna • Elínborg • Eiríkur • Ýr • Linda • Falur • Veronika • Ingibjartur • Róbert • Ina • Jökla • Garri • Nafli • Sigurðóttir • Gujú • Ásthildur • Freysteinn • Oddný • Þorkell • Hinrik • Karólína • Rut • Hartheim • Unnur • Búi • Boðvar • Ylja • Jósep • Gaur • Hilf • Karen • Eyvindur • Guðjón • Þuríður • Salma • Jóna • Lóa • Eulja • Rósa • Selma • Sigbrúður • Netan • Milla • Óna • Snafríður • Begga • Nelli • Róskva • Agnar • Skírni • Árdís • Hængur • Bergjót • Ólafur • Guðbjörg • Ingvar • Svava • Maja • Ingui • Valgerður • Jenný • Carl • David • Ingveldur • Sigríða • Yfiur • Kristbjörg • Edít • Fjólá • Þorbjörn • Páll • Vigri • Beitir • Snaðs • Þórbjörg • Þorvaldur • Ingþór • Benedí • Hlæds • Fólki • Njála • Egbóra • Amý • Ragnar • Jökull • Kolbrún • Rafn • Finnur • Gréta • Engelbert • Sigríus • Nökkvi • Isak • Guði • Nami • Vebjörg • Guðveig • Villi • Aldis • Þorm • Ársól • Ingimundur • Bjarnhildur • Gunný • Alfons • Valbjörn • Esjar • Nítt • Jens • Þorbjörgur • Harpa • Sólja • Berglind • Hrafn • Elíði • Magni • Elín • Zophonías • Summa • Elbert • Sjóón • Ásbjörg • Jódís • Alda • Hlín • Samson • Fura • Frigg • Hraekur • Sturlaugur • Þórkatta • Þóli • Gunnjóna • Guðfríður • Stína • Gunnlaugur • Birgitta • Salka • Ástvaldur • Hafþórs • Þjórn • Oddur • Sæbjörg • Von • Kjaran • Elma • Freyja • Svana • Petrina • Áslaug • Steindóttir • Ragnvaldur • Sandr • Ingileifur • Nadla • Dagmar • Mimir • Beta • Jakobína • Agósta • Dóli • Ingibjörn • Þura • Sighvatur • Óskar • Ormar • Hanna • Theódór • Yordis • Björt • Tjón • Muninn • Bjarni • Laufey • Sigurður • Sólva • Annjót • Tjóni • Bogga • Þryggvi • Hrolaugur • Fríðjón • Elísa • Harður • Þorlákur • Isafeld • Eva • Dýri • Vesteinn • Matthías • Lúðvik • Dagbjört • Theresa • Iney • Draumeig • Hórn • Bárður • Sigrún • Bryndís • Vilhjálms • Mar • Hróðmar • Alice • Virginia • Jóhanna • Agnes • Adam • Siguróli • Anita • Órnóttur • Mánveig • Dagbjartur • Isabella • Anna • Hrónn • Gunnlaug • Björgvin • Erlingur • Ólafía • Hjálmtýr • Lindína • Bessi • Sigurleug • Heimir • Þorhallur • Sigursteinn • Gunný • Kolur • Bergveinn • Alfréð • Líf • Guðlaugur • Fjódóttur • Viggó • Þófri • Ísídóttir • Magga • Danla • Bjúlgja • Marel • Kristinn • Þófa • Bjarni • Hilmir • Dógun • Ánni • Gróa • Jón • Harþóra • Heiðrekur • Nikulás • Emelía • Marta • Clara • Huldar • Tinna • Bergþór • Skarphéður • Mars • Maddý • Sigurjóna • Harnir • Kristján • Sveinar • Ógn • Snaebjörg • Snaer • Hallgerður • Þorbjartur • Hersteinn • Mír • Erna • Elíj • Viktoria • Hermann • Náðlína • Erpur • Gunnþór • Yrsa • Hermoddur • Haukur • Samundur • Isabella • Petra • Sólís • Óðinn • Barbara • Karlotta • Arnfríður • Ólafur • Saldme • Ása • Manfréd • Rósenberg • Heba • Vopni • Líney • Ásthildur • Hásteinn • Mjónir • Vigfús • Samúel • Rafn • Ör • Mandís • Lillj • Sigrún • Jónrundur • Katla • Antonia • Styrmi • Guðbjörn • Rósi • Herring • Hallgrímur • Móa • Hróðný • Frey • Halldóra • Vilundur • Jónatan • Óttar • Eir • Mír • Heiðsteinn • Axel • Sólja • Annaldur • Eirís • Þórhildur • Úrsóla • Sara • Sindri • Örvar • Veiga • Marín • Filippa • Vilkingur • Ríkey • Þórgunna • Kveldalfrur • Marey • Sigurbjörn • Svava • Marný • Broddi • Sigríður • Ósp • Þormar • Rannveig • Ógri • Smóri • Ragna • Rún • Skarphéðinn • Volli • Flóki • Valþór • Eggert • Fannar • Tanja • Snaebjörn • Krummi • Arthur • Þorvaldur • Marnis • Sasi • Elisabet • Bergur • Böð • Emba • Brynhildur • Logi • Doris • Þóris • Kára • Njál • Sveinbjörg • Smári • Gunnbjörn • Þormóður • Sigurbjörg • Ómar • Bránn • Ástráður • Alexandra • Hervör • Sýsla • Hlödver • Askja • Ottó • Indrana • Gabrieta • Heiðberg • Dóra • Sesselja • Valur • Hrafnar • Konný • Sophanías • Örn • Heiða • Ester • Hulda • Unnar • Hjalti • Stella • Annabella • Róni • Karvi • Karl • Guðni • Ísólfr • Áki • Minný • Snjólfur • Þorgeir • Vilborg • Gneisti • Bárna • Sæþór • Arnheiður • Fríðdóra • Eynón • Róddóttir • Pálag • Ingibjörg • Ásbjörn • Heleinn • Úndína • Ragnheiður • Ámundi • Starni • Hólmgeir • Hallveig • Marni • Særún • Heiðrún • Dóla • Þórkur • Harður • Guðmundur • Ófeigur • Sveinbjörg • Steinar • Gunnar • Hrólfur • Veturliði • Sigurjón • Gríma • Munda • Mjórður • Ásta • Gerður • Vebjörn • Hreiðar • Marsiból • Málfríður • Jón • Marni • Pálmi • Sisi • Guða • Rakel • Snaþór • Pétur • Magna • Diana • Nanna • Jósefat • Ver • Þóroddur • Lena • Bergþóra • Hákon • Kolbeinn • Adda • Valdimar • Fjóla • Ástríður • Henný • Óliver • Nina • Eik • Hlynur • Þorbjörgur • Orri • Ír • Hlína • Neisti • Kristrún • Malte • Þorfríður • Huglín • Védís • Fanney • Harey • Halldór • Heiði • Ólga • Ida • Norma • Kristín • Júlía • Jörger • Perla • Hilda • Sæfríður • Sigurðóra • Hjálmtóli • Verharð • Þórkir • Jón • Snjólfur • Póllj • Bogi • Helga • Ástríkur • Klemens • Vignir • Sólveig • Lotta • Steinþóra • Þráður • Órnundur • Úngus • Grá • Rebekka • Hjörvar • Lúkas • Bettý • Hógni • Þóra • Gunnþóra • Bessi • Gabriel • Lúthar • Valsteinn • Klara • Christopher • Góðg • Kristófer • Gunnhildur • Hildur • Kormákur • Hrefna • Matti • Snjólaug • Rótur • Bjartur • Tóbbias • Ásgeir • Kaplóa • Þrungeir • Inis • Uggj • Björn • Bölla • Ingunn • Vera • Finndís • Ási • Ólveig • Erla • Kjartan • Allj • Fríðrik • Salvör • Fríðinnur • Þrák • Eðvald • Þormi • Klængur • Elías • Mína • Nóra • Rafney • Fúsi • Ásvör • Bogey • Óna • Danlól • Vemundur • Guðfinna • Hrunn • Ólgeir • Emma • Sæpti • Wörður • Egla • Saga • Frán • Tyrtingur • Braghlíður • Sýsla • Garpur • Álvar • Þongrímur • Loftur • Mórur • Úlfhildur • Kári • Björg • Svanhvít • Sólberg • Gíð • Erlendur • Guðrún • Ásrún • Hjórdís • Klíjan • Guðsteinn • Rósinberg • Atla • Skáfti • Veigar • Minney • Sólmundur • Elvar • Margelr • Soffía • Dýrlaif • Lauqa • Konkordía • Sólveig • Georg • Mari • Hróbjartur • Róðull • Ásþar • Fannsó • Konráð • Sigmar • Christian • Brínnún • Múli • Donna • Gissur • Herdís • Níels • Fríðgeir • Herjóður • Garðar • Hjaltay • Hróðgeir • Oddbjörg • Odía • Yfi • Ingibjörgur • Fríða • Guði • Amý • Eulbjörg • Karitas • Sigga • Ársael • Sigurinnur • Eiddý • Sigurinn • Ingi • Hannes • Tjór • Filippus • Emil • Ragnhildur • Lovísa • Euljó • Unður • Loki • Knútur • Kleópatra • Þormi • Leiknir • Hjörtleifur • Hrí • Þorli • Sólri • Benedikt • Þóroddur • Ingólfur • Sænj • Þorsteinn • Kristjana • Ríkka • Valka • Ronja • Ynja • Hóð • Dagný • Sírný • Sæbjörn • Þórunn • Ingimar • Sigvaldi • Ina • Unri • Siggelr • Lára • Órnún • Óliver • Ántra • Skuld • Sæunn • Ólaugur • Valgeir • Þorbjörg • Ketill • Brynja • Bjarki • Reimar • Elva • Sigtryggur • Stefnir • Ólína • Úlfar • Jónunn • Rita • Úlfa • Simon • Drófn • Didda • Jóngeir • Aron • Tumi • Eilur • Guðbrandur • Veldis • Margrét • Hraekur • Jaki • Birta • Arnbjörg • Markús • Sonja • Hædda • Leifur • Þatrekur • Agótt • Sólbjörn • Kolka • Hóðinn • Rafnhildur • Tóta • Guðlaug • Ída • Hnefía • Valgarð • Sumneva • Mónika • Sabrina • Yngvar • Bjartey • Guðfríður • Birna • Auðunn • Arnþráður • Ósk • Aurora • Alexander • Dýrlinna • Gauri • Ráðharður • Þórn • Freydis • Nínja • Brá • Arnhildur • Geir • Ása • Marína • Fríðrika • Gerða • Helgi • Agata • Silja • Þóroddur • Reynir • Dagur • Bæring • Þorgeir • Maggi • Óssur • Hjálmar • Marón • Anna • Mólheiður • Leó • Hilmir • Oddrún • Vilhelm • Fróði • Hóðak • Gróður • Þjörgey • Útrik • Sveinn • Sædis • Vilhelmina • Flósi • Hjörtur • Brynjar • Rókkvi • Sigurðis • Guðjóna • Andri • Guðfrí • Mikael • Sveinó • Skúli • Gunnþóra • Kata • Guðvin • Soffenía • Kristín • Guðmundur • Maríab • Jól • Þengill • Ugló • Birgir • Lýður • Kristján • Jörri • Silka • Dógg • Jenni • Sæbjörg • Mál • Máni • Fífla • Vinný • Gíli • Sigurlína • Magnús • Minerva • Sigursteinn • Rógn • Sólunn • Euljó • Aðalsteinn • Rún • Ásgímur • Hónður • Matthildur • Þórunnur • Bergey • Trausti • Haraldur • Hógná • Hreggviður • Björk • Zakarías • Súsanna • Maríþórr • Jónmundur • Pamela • Árnól • Óða • Jakop • Þór • Auður • Ásmundur • Dillj • Muggur • Magna • Sævör • Guðgeir • Stefán • Sveinbjörn • Briet • Bella • Hringur • Aðalbjörg • Sveinar • Vatnar • Lís • Lýðla • Baldvin • Sigurveig • Frosti • Ingi • Sólvi • Þorgeir • Fjalur • Ivar • Sí • Harþjörg • Ari • Kría • Eulds • Hera • Óðra • Ágir • Elmar • Þonglís • Hrafneg • Guðný • Hóskuldur • Steinvör • Elfa • Enok • Pála • Hrómundur • Garri • Balður • Kara • Svanlaugur • Snaer • Glómur • Albert • Arney • Rúnólfur • Snaehólm • Örngeir • Berta • Gíggja • Jóhannes • Helkorka • Helena • Sæberg • Þorfinnur • Þórey • Þórhalla • Atli • Þórunna • Silla • Barði • Valtýr • Arngrímur • Vestar • Vagn • Svanhildur • Jenný • Pálína • Ódógeir • Lína • Inga • Stáðóttur • Drífa • Tómas • Áskell • Berg • Úlfþórr • Ólía • Auðbjörg • Metta • Annalies • Bjargey • Indríði • Unna • Lína • Þórunn • Hrafnhildur • Sævar • Snaerarr • Unnsteinn • Hrafnkell • Óðri • Rafnar • Rómar • Herborg • Lukka • Theima • Alma • Gauja • Kolfinna • Tara

Figure 1: The names of the small-scale fishing vessels involved in Iceland's coastal fisheries in 1990, at the introduction of their ITQ system. Source: National Association of Small Boat Owners, Iceland.

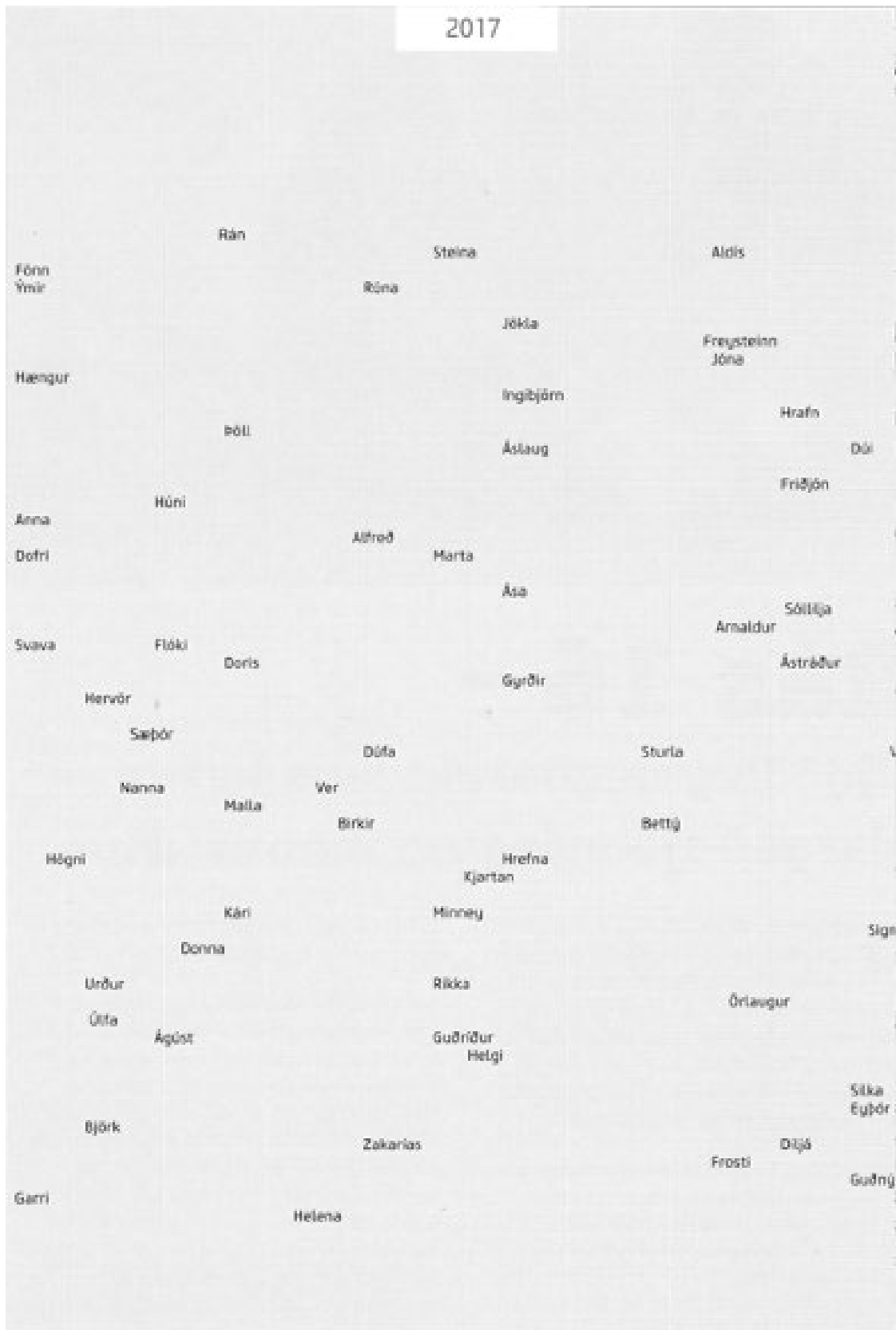


Figure 2: The names of the small-scale fishing vessels remaining in Iceland’s coastal fisheries in 2017 following the introduction of the small-scale fleet to the ITQ system in 1990. Source: National Association of Small Boat Owners, Iceland.






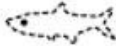

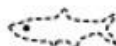






Fisheries benefits	 Large-scale	 Small-scale
Annual landings for human consumption	 about 60 million tonnes	 about 27 million tonnes
Annual catch discarded at sea	 10 million tonnes	 Almost none
Annual catch for industrial reduction to fishmeal and oil, etc.	 26 million tonnes	 Almost none
Fuel used per tonne of fish for human consumption	 5-20 tonnes	 2-5 tonnes
Number of fishers employed	 about 1/2 million	 about 12 million
Government subsidies (billions of USD)	 25-30 billion USD	 5-7 billion USD

Figure 3: Comparison of fisheries benefits from large scale and small scale fishing vessels. Source: Daniel Pauly. University of British Columbia, Sea Around Us, Institute for the Oceans and Fisheries.

Fisheries benefits of small-scale fishing

1. Small-scale, regional fisheries supplying affordable fish to local outlets and optimising niche markets can play a crucial role in the use and conservation of inshore fisheries. (Pauly, 2016).
2. Having dedicated access arrangements for small-scale fisheries would enable New Zealanders to provide for their social, economic and cultural wellbeing from fishing, as envisaged in the Fisheries Act 1996. It would encourage new entrants, innovation and new technologies.
3. Small-scale fisheries can help mitigate the habitat degradation and ecosystem changes that are occurring in inshore fisheries now. An increase in the abundance of fish and biodiversity can also help to make the fishery more resilient to the impacts of land-based pollution, sedimentation and climate induced changes.

Appendix 3

Pathway to Ecosystem Based Fisheries Management

1. Ecosystem Based Fisheries Management (EBFM) starts with protecting the ecosystem that supports biodiversity and productivity, then making decisions that take into account the interdependence of species. Bottom trawling in shallow coastal waters depletes fish populations of target and non-target species, reduces biodiversity by unknown degrees, while also reducing future productivity.
2. Soft-sediment ecosystems cover almost 70% of the earth's surface and have a fundamental role in the functioning of marine systems, both for remineralization of organic carbon and nutrients and as food producers for larger macrofauna and fish. In recent years, there has been growing awareness that physical disturbance caused by bottom trawling may be one of the most important sources of anthropogenic disturbance to soft-sediment benthic communities and habitats (Dayton et al., 1995; Jennings and Kaiser, 1998; Collie et al., 2000; Pauly et al., 2002; Kaiser et al., 2006).
3. The present field- and mesocosm study, and several other studies, have clearly shown the importance of soft-sediment macrofauna for fluxes of nutrients. A mean reduction of faunal biomass of 60%, as found in heavily trawled areas (Collie et al., 2000; Hiddink et al., 2006, Queirós et al., 2006), will obviously reduce flux rates between the sediments and the water column and the productive surface layers. More importantly, the density of the larger species with highest impact on flux rates is kept low due to chronic trawling gear impact. In bottom-up controlled, highly productive shallow shelf systems like the Skagerrak and the North Sea, it is likely that the demersal trawling activities are interfering with the natural ecosystem production processes and may result in reduced biological yield at different trophic levels, including fish.

<https://www.youtube.com/watch?v=loISws3BDPQ>

<https://www.youtube.com/watch?v=WX6rZcdDIEw>

<https://www.youtube.com/watch?v=3ckb9rUc6Mk>

4. Dr. Simon Thrush has been concerned about the cumulative impacts of repeated trawling in New Zealand's marine waters for many years. Bottom trawling can have profound effects on the ecology of the seafloor. Dr. Simon Thrush. Professor of Marine Science, University of Auckland.

<https://youtu.be/yxfyB3-eaRY>