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**SUBMISSION OF JOINT RECREATIONAL & ENVIRONMENTAL FISHING INTERESTS  
ON THE FISHERIES AMENDMENT BILL**

**GOVERNMENT BILL**

<b>Introduction .....</b>	<b>2</b>
<b>Reasons for the submission .....</b>	<b>4</b>
Defending our collective interests in fisheries .....	4
Sustainability must be ensured - The kahawai proceedings 2004 – 2009.....	6
Proportional allocation .....	7
The utility of Catch Per Unit of Effort (CPUE).....	8
Hyperstability and Hyperaggregation .....	9
Uncertainty .....	10
Applying the Information Principle .....	10
McNamara’s Fallacy .....	11
Consultation.....	13
New landings and discard rules.....	13
<b>Decisions sought from the committee .....</b>	<b>16</b>
<b>Committee hearing.....</b>	<b>16</b>
<b>Appendix 1 .....</b>	<b>18</b>
Administrative law - Abdication of discretionary power .....	18
<b>Appendix 2 .....</b>	<b>19</b>
Proportional allocation .....	19
<b>Appendix 3 .....</b>	<b>21</b>
Fisheries Act section 21	
<b>Appendix 4 .....</b>	<b>22</b>
Setting catch limits.....	22
Case study – CRA2 .....	22
CPUE is not a proxy for abundance .....	24
<b>Appendix 5 .....</b>	<b>25</b>
Our discussion .....	25

## INTRODUCTION

1. This is a submission on the proposed Fisheries Amendment Bill (**Amendment Bill**) that seeks to change fishing rules and policies and support the roll-out of cameras aboard commercial fishing vessel with a package of measures to change fishing practices, enable a land-all catch policy (with exceptions), introduce a penalty regime designed to encourage compliance, and introduce pre-set decision rules that remove Ministerial discretion of important fisheries management decisions.
2. The New Zealand Sport Fishing Council, LegaSea, the New Zealand Angling & Casting Association and New Zealand Underwater Association (**the Submitters**) are national representative organisations whose members and/or supporters have a strong interest in restoring marine biodiversity by increasing the abundance of fish in inshore waters, while protecting the marine environment and ensuring a fair go for all Kiwis so they can provide for their family's social, economic and cultural wellbeing from fishing.
3. This submission relates to all parts of the proposed Bill.
4. The two instruments proposed in the Amendment Bill – the pre-set decision rules to set catch limits and setting individual recreational daily bag limits via a notice rather than regulations – have the combined effect of creating a proportional allocation mechanism that has been coveted by quota holders for decades.
5. Neither proposed instrument is in the public interest of New Zealanders, it is simply a disguised payback to quota holders for having to accept cameras on commercial fishing vessels. From our perspective it seems like a quid pro quo arrangement.

*Quid pro quo. n. Latin for "something for something," to identify what each party to an agreement expects from the other, sometimes called mutual consideration. Example of its use: "What is the quid pro quo for my entering into this deal?"<sup>1</sup>*

6. The Submitters **support** the need for legislative and administrative changes to enable the rollout of cameras on commercial fishing vessels and would support those measures–
  - (a) If provisions for pre-set decision rules and regulatory changes were presented in a separate Bill;
  - (b) If new legislation was designed to strengthen ecosystem-based fisheries management;
  - (c) If commercial fishers used practices and techniques that avoided unwanted catch in the first place, rather than having to create a raft of rules around how juvenile and unintended catch can be landed or discarded;
  - (d) If an effective offence and penalty regime was established to support a change in fishing practices and behaviour so fewer fish are wasted and more value is derived from the fish landed; and

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<sup>1</sup> <https://dictionary.law.com/Default.aspx?selected=1705>

- (e) If onboard cameras were fitted to all commercial fishing vessels, including the deepwater fleet and scampi vessels with an exception for vessels below 8m in length fishing for flatfish and mullet.
7. The Submitters **oppose** the proposed Amendment Bill as it represents a complete revision of the way that fish stocks are assessed such that sustainability cannot be ensured. It is inadequate and offensive that the ramifications of these changes have not been made explicit in the materials accompanying the Amendment Bill. This relates to -
- (a) The Amendment Bill sections 2(2), 11AAA, 11, 11A, 12, 13(1-4), 14(1, 2, 6A, 3), 14B(6), 20(6), 297(1)(w), 297(3A), and proposed amendments to the Fisheries (Amateur Fishing) Regulations 2013 sections 4, 5A, 5B, 11-16, 17, 17A, 17B, 17C, 18, 19, 30, 55-63, 78-83, 92-97, 100, 101, 117-122, 123, 123A, 123B, 125, 125A, 141-146, 147, 147A, 155A, 155E, 155F-M, 158, 159A, 160.
8. The changes to enable the use of pre-set decision rules to set catch limits and setting individual recreational daily bag limits via a notice rather than regulations are **opposed** until they can be considered in a separate Bill because the current Amendment Bill seeks to:
- (a) **Remove Ministerial discretion from the decision-making process** by establishing pre-set decision rules to use when altering catch levels for a fish stock. Currently the Minister is obliged to consider best available information, apply the [information](#) and [environmental](#) principles, weigh all the factors and make a decision in the national interest that conforms to the [Purpose of the Fisheries Act](#). Ministerial discretion to act in a precautionary manner has been the primary factor in saving precious fish stocks from collapse or overfishing.
- (b) **Undermine the sustainability provisions in the Fisheries Act (1996)** by introducing pre-set decision rules and a raft of changes to the amateur fishing regulations under the guise of technical amendments promoting agility in decision making. Pre-set decision rules and changes to regulations applying to recreational fishing are not related to onboard cameras and ought to be separated so adequate public consultation can be conducted. The failure to publicise the effects of this Amendment Bill to enable widespread public awareness and understanding of the fundamental threat to sustainability is abhorrent.
- (c) **Implement bad administrative practice.** It is a fundamental tenet of administrative law that a statutory decision maker must not abdicate their discretionary power by adopting a fixed rule of policy<sup>2</sup>. When an authority is entrusted with discretionary powers, discretion must be brought to bear in every case. Each case must be considered on its merits and decided as the statute and public interest may require. **Appendix 1** to this submission addresses these administrative law matters in greater detail. The proposed pre-set decision rules are highly unorthodox and seek to violate this fundamental administrative law tenet and therefore warrant extremely close scrutiny. The

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<sup>2</sup> See HWR Wade and CF Forsyth *Administrative Law* (11th ed, Oxford University Press, Oxford, 2014) at 259–276.

lack of specific detail as to how the proposed instruments would function in practice is a major concern and ought to be a red flag.

9. The main beneficiaries of the Amendment Bill are commercial quota owners who will no longer have to fund stock assessments to gain increased Annual Catch Entitlement (**ACE**) – a well-crafted pre-set decision rule based on Catch Per Unit of Effort (**CPUE**) data will offer all the incentives needed to trigger increases and avoid any reductions. What a victory!
10. Ideally fisheries independent data is used to inform stock assessments which are a necessary part of ongoing fisheries management. Independent data is not always possible or considered affordable so often data collected by commercial fishers, including CPUE, is the major input used to inform management. As we have noted since our 2016 [Future of our Fisheries submission](#), the number of stocks in the Quota Management System has increased 3.5 times while the research budget is about 45% of what it was, in real terms, in the early 1990s.

## **REASONS FOR THE SUBMISSION**

### **Defending our collective interests in fisheries**

11. Collectively the submitters have decades of experience in fisheries management, participating in earlier reviews of fisheries legislation, fisheries system reviews, onboard camera proposals, regulatory reviews, and individual stock assessments.
12. *De facto* decision rules and the earlier Adaptive Management harvest strategies based on easily manipulated Catch Per Unit of Effort (**CPUE**) data have undermined management of some of our most treasured fish species such as rock lobster, bluenose, scallops and tarakihi. At times this has led to widespread public campaigns to influence Ministerial decisions so they are more precautionary and protective of the marine environment.
13. The submitters have strong objections to the Amendment Bill as it relates to changing regulations using convenient yet undefined ‘instruments’ that will inevitably lead to proportional allocation of available catch i.e. Quota for recreational interests. These proposals are not new, the difference is this time around they are presented as merely technical amendments to commercial fishing legislation and practices.
14. The public have a background of strongly objecting to previous proposals starting with the [Soundings proposals](#) in 2000, [proportional allocation proposals](#) in 2005, [Shared Fisheries](#) (2007), [Fisheries 2030](#) (2008-10), [Snapper 1](#) (2013), [Fisheries System Review](#) (2015), [Future of our Fisheries](#) (2016), [Fisheries Change Programme](#) (2019), and numerous individual fish stock submissions.
15. We encourage Committee members to read our previous system review submissions to better understand our commitment to improving fisheries management through this process –
  - (a) [Submission, Dec 2021](#). Cameras on boats.

- (b) [Submission, March 2019](#). Fisheries Change Programme.
- (c) [Submission, Dec 2016](#). Future of our Fisheries.
- (d) [Submission, Dec 2015](#). Fisheries System Review.

16. The major reasons why the submitters **oppose** the Bill in its current form are:

- (a) The very heart of the Fisheries Act (1996) Parts 2 and 3 are gutted by the Amendment Bill. When the Act was being passed into law Minister Doug Kidd referred to these as the “religious bits”. This is where the integrity and defence from overfishing are to be found.
- (b) The Amendment Bill proposes to avoid the rigour of the current catch setting process by enabling an instrument to be created that automatically performs functions currently requiring Ministerial discretion. As noted above, this amounts to an abdication of crucial ministerial discretion.
- (c) The proponents of this bill are seeking to dupe the Committee and the Minister into thinking that a simple formulaic response using pre-set decision rules will improve fisheries management. Pre-set decision rules:
  - i. Substantially weaken the sustainability provisions of the current [Fisheries Act \(1996\)](#) while masquerading as a minor technical amendment.
  - ii. Are contrary to the previously agreed, stated Government and international policy to move overall management towards ecosystem-based fisheries management. Pre-set decision rules take us in the opposite direction because they cannot consider the interrelationships between ecosystem components.
  - iii. Remove Ministerial discretion to act in a precautionary manner while protecting the public’s interests in how New Zealand’s fish stocks are managed. The Minister is the only defender of public fishing interests when compared to the Ministry for Primary Industries who has a clearly stated commitment to continue partnering with commercial interests to grow exports.
- (d) **There has been no adequate process to consult with the public** on fundamental changes to their rights and access to highly valued fish stocks. This is a risky approach given that pre-set decision rules combined with proposed regulatory changes will substantially change the nature of commercial and recreational fishing interests – giving quota owners greater access to the public’s fishery. This is introducing proportional allocation by stealth and is unacceptable.
- (e) The Amendment Bill provides for the use of pre-set decision rules and new regulations that will enable changes to be applied to commercial and recreational catches and management controls simultaneously. This is unnecessary. There is no sustainability risk to have changes apply to commercial fishers in October and allow for additional time to implement

changes to amateur fishing regulations the following April. At a practical level, any substantial change to recreational regulations needs both an adequate consultation process and to be well publicised beforehand. The October to April window provides time for Fisheries New Zealand to change print material, fish measures and signage to support understanding for any new rules.

### **Sustainability must be ensured - The kahawai proceedings 2004 – 2009**

17. These [judicial review proceedings](#) challenged decisions of the Minister of Fisheries in setting the Total Allowable Catch (**TAC**) and Total Allowable Commercial Catch (**TACC**) for kahawai. These proceedings resulted in precedent setting judgments of the Court of Appeal<sup>3</sup> and the Supreme Court<sup>4</sup> which have influenced the way in which the [Fisheries Act 1996](#) (the Act) is applied.
18. Both written decisions from the [Supreme Court](#) (majority and minority) on the kahawai proceedings are relevant to this submission.
19. The majority decision contains an important statement concerning the importance of having proper regard to the Act's information principles. The Minister is subject to the general obligation in section 10 on all decision-makers under the Act to take account of stipulated information principles, one of which is that they base their decisions on the best available information:<sup>5</sup>

[9] Part 2 also sets out in s 9 the environmental principles to be taken into account by all exercising functions under the Act. They include taking into account the interdependence of species, the desirability of biological diversity and the preservation of habitats. Section 10 sets out "information principles" for those exercising functions under the Act. It recognises that decisions will have to be made on imperfect information, while requiring those performing functions under the Act to base their decisions on "the best available information". **So, decision-makers are required to consider any uncertainty in the available information, and to "be cautious" in its use.** Imperfect information is not, however, a reason for postponing or failing to take measures to achieve the purpose of the Act.

[emphasis added]

20. The minority decision of Elias CJ recognised that setting a TAC requires accommodating both utilisation and sustainability outcomes expressed in s 8 of the Act, and that it is inherently unlikely that both policies will be able to be accommodated in full. The decision found undue weight must not be given to utilisation – fisheries are to be utilised but sustainability is to be **ensured**.<sup>6</sup>
21. Currently the Minister has a statutory duty to have regard to the [Purpose](#) and [Environmental](#) and [Information](#) Principles of the Fisheries Act (1996). How can an instrument that has no definition or time limit have regard to the Purpose and Principles? It cannot.

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<sup>3</sup> *Sanford Ltd v New Zealand Recreational NZSFC Inc* [2008] NZCA 160.

<sup>4</sup> *New Zealand Recreational NZSFC Inc v Sanford Ltd* [2009] NZSC 54.

<sup>5</sup> *New Zealand Recreational NZSFC Inc v Sanford Ltd* [2009] NZSC 39.

<sup>6</sup> *New Zealand Recreational NZSFC Inc v Sanford Ltd* [2009] NZSC 39.

22. Only a Minister with all the information before him can consider the completeness and uncertainty in information, take account of the effects of fishing on the environment, the relationship between species, and make a determination that ensures sustainability of all species. An instrument setting and varying catch of a single species cannot claim to balance interests in a stock, never mind the complete shutting out of any ecosystem-based decision making.
23. These new instruments are proposed as a means of removing the Minister from the decision-making process. This provides powerful incentives to show an increase in Catch Per Unit of Effort (**CPUE**) and so catch allocations for quota holders can be increased. The use of these instruments completely changes the way sustainability is measured and achieved – in effect a rewrite of the front end of the Fisheries Act.
24. If there is to be a rewrite of the Act and substantive changes to the measurement and application of sustainability then this should occur explicitly, not by stealth purporting to be technical adjustments to make decision-making more agile.
25. Passing this part of the Amendment Bill into law sets fisheries back 50 years. The contemporary view is that stocks need to be managed at higher levels:
  - (a) New Zealand has an implicit target of 40% of the unfished biomass while most stocks are between 15 and 30% (see **Appendix 5** for Fisheries New Zealand discussion on this matter).
  - (b) Australia is investing in rebuilding their stocks to 60% of the unfished biomass. The associated view is that we must make a more ecosystem-based consideration when setting catch limits.
  - (c) The current practice of setting catch limits species by species, often one area at a time, leads to trophic cascades and diminished productivity across the food web.
26. Pre-set decision rules are promoted because they enable larger catches to be justified on low quality information by using an easily manipulated process of estimating CPUE. **Appendix 4** explains why this approach to setting catch limits has a poor history and is used to mask depletion of stocks and degraded ecosystems.

### **Proportional allocation**

27. Pre-set decision rules changes the fundamental nature of fishing interests. Currently the Minister must set a Total Allowable Catch (**TAC**) to ensure sustainability. He/she then must set aside a reasonable allowance to provide for Māori customary non-commercial and recreational fishing interests. The remainder of the TAC is the Total Allowable Commercial Catch (**TACC**). **Appendix 3**. Pre-set decision rules means the TACC and allowances are considered equally. This is proportional allocation, a model that has considered and rejected by the Courts, and by the public in the past 22 years.
28. The public object to this latest attempt to push proportional allocation through under the radar without adequate justification and while pretending that it is a necessary part

of the framework required to expedite the installation of onboard cameras. Nothing could be further from the truth.

29. It is inadequate for this Amendment Bill to proceed when the public have been denied an opportunity to better understand the gravity of the proposed changes because public consultation has been limited. The logical conclusion is that limiting consultation is a deliberate attempt to avoid widespread opposition to the proposals.

### **The utility of Catch Per Unit of Effort (CPUE)**

30. CPUE measures fishing success – the catch attained from the effort expended in attaining the catch. Catches can vary for many reasons with abundance being one.
31. Most of the factors driving changes in CPUE relate to effort, where and when it is deployed, and technology creep, where advances in available technology enable the exploitation of previously unknown or inaccessible fish populations.
32. CPUE has a vexed history. It is the most commonly collected data set for commercial fisheries and routinely used for assessment purposes. Great efforts are made to make the case that CPUE is a proxy for relative abundance and is a reliable indicator for setting catch limits. However, there are no easy or agreed processes for interpreting raw CPUE data. As noted in “Relative Abundance and Catch per Unit Effort” Wayne A. Hubert and Mary C. Fabrizio (2007)<sup>7</sup>:

#### 7.1.2 Underlying Assumptions

An underlying assumption of using Catch/fishing effort (C/f) as an index of abundance is that the number of fish captured is proportional to the amount of effort expended. When a population is closed, one unit of sampling effort removes a fixed proportion of the total population (Seber 1982). As the population declines in abundance, the number of animals captured by one unit of effort declines. This simple linear relation between C/f and abundance has been extended to research and monitoring surveys such that C/f data are typically treated as a measure of abundance.

**However, when the assumption of a linear relation fails, C/f can be a misleading indicator of stock abundance.**

[emphasis added]

33. Fishing effort is constantly changing to defeat a single measure of effort. The changes occur across a myriad of variables, spatial, seasonal, economics, stock movements, skill, and technological enhancements. The only way to transform a raw set of CPUE data into something that can masquerade as a measure of relative abundance is to undertake a smoothing, or standardisation process.
34. However, these standardisation or statistical processes are easily manipulated and shrouded in uncertainty and used by the agreement of those in science working groups, not because of their veracity. But without using this data it is impossible to undertake a stock assessment with the information available.

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<sup>7</sup> <https://fisheries.org/docs/books/55049C/7.pdf>

35. Not all experiences of CPUE-based decision making have been negative, but any successes that can be found are lonely outliers. There is no way of validating standardisation techniques for CPUE data sets and the dangers and weaknesses of using CPUE as an index of relative abundance is well represented in the literature.
36. Aotearoa has experience in pre-set decision rules utilising CPUE and the submitters have consistently objected to their application, in part because the ability for CPUE based decision rules to mask *hyperstability* and *hyperaggregation*. These flaws are internationally recognised.

### Hyperstability and Hyperaggregation

37. Hyperstability occurs when a fishery's catch rate stays stable while the actual fish population declines drastically.

"If you're only looking at the catch data in a hyperstable fishery you're not going to know you have a problem," says Hamilton. "In fact you probably won't realize that you do have one until your fishery collapses." Hyperstability: The Achilles' Heel of Data-Poor Fisheries by Justine Hausheer (2016)<sup>8</sup>.

Misinterpretations of elevated CPUE in the northern cod (*Gadus morhua*) fishery contributed to overestimations of stock size, inflated quotas, and unsustainable fishing mortality in the 1980s and early 1990s. The concentration of the fish and fishery led to extreme hyperstability in the CPUE–abundance relationship.

In the late 1980s, migrant cod began to concentrate within the Bonavista corridor, their most southerly cross-shelf migration route. By the spring of 1990, approximately 450,000 t was concentrated within 7000 km<sup>2</sup> at densities quadruple those of the 1980s. Densities remained high through 1992, while abundance declined fivefold. During this period, cod hyperaggregated (local densities increased with decreasing biomass) in the Bonavista corridor and CPUE increased. To the north, no hyperaggregation occurred, and densities and CPUE declined with biomass. In the Bonavista corridor from 1990 to 1993, CPUE was hyperstable with local cod density. Areas of high cod densities (>0.1 fish·m<sup>-2</sup>) shrunk as regional estimates of cod biomass declined. The spatial extent of the fishery contracted proportional to the shrinkage in area occupied by the fish. Hence, CPUE was related to abundance at the local scales of a fishing set (local acoustic density) but not to abundance at regional or stock scales.

*Hyperaggregation of fish and fisheries: how catch-per-unit-effort increased as the northern cod (*Gadus morhua*) declined* G.A. Rose and D.W. Kulka<sup>9</sup>

38. The ability to fish hyperaggregations (fish aggregations) is a critical part of a successful fisheries strategy. It is obvious when fishing spawning aggregations, or taking advantage of known transit corridors, or any other movements we can predict. They can be inshore - offshore migrations, seasonal migrations, or smaller foraging aggregations that influence CPUE. For example, CPUE increases when tarakihi move off the hard reef on the full moon, increasing their vulnerability to being caught.

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<sup>8</sup> <https://blog.nature.org/science/2016/05/11/hyperstability-the-achilles-heel-of-data-poor-fisheries/>

<sup>9</sup> [https://www.researchgate.net/publication/249531439\\_Hyperaggregation\\_of\\_fish\\_and\\_fisheries\\_How\\_catch-per-unit-effort\\_increased\\_as\\_the\\_northern\\_cod\\_Gadus\\_morhua\\_declined](https://www.researchgate.net/publication/249531439_Hyperaggregation_of_fish_and_fisheries_How_catch-per-unit-effort_increased_as_the_northern_cod_Gadus_morhua_declined)

## Uncertainty

39. There is always large uncertainty in stock assessments and estimates of yield, particularly when using CPUE as the main data source for single species stock assessments. The Chief Science Advisor's Report on commercial fishing '[The Future of Commercial Fishing in Aotearoa New Zealand](#)' had this to say:

"The facts" . There is no accepted single source of truth in the fisheries sector and this report does not claim to be one. Passionate debate arises from (over-) interpretation of uncertain datasets by all sides, which supports conflicting narratives of 'what the evidence says'. We have tried to highlight where particular points of contention lie in interpreting data and were saddened by the number of incidences of 'alternate facts' that we navigated in this project. **The inherent uncertainty in fisheries management is very easily manipulated to support a particular narrative.** From an agreed percentage of how many of our stocks have been assessed, to the size of the original non-fished biomass, to a percentage of this biomass that can be sustainably harvested, to whether our trawling footprint is increasing or decreasing – the very basis of our fisheries management is often fiercely contested.

[Emphasis added.]

40. This uncertainty was considered by law makers and a principle was inserted into the Act to guide decision makers through this uncertainty. In practice it is largely ignored except to defend a narrow definition of what comprises 'best' information.

### Fisheries Act 1996 - Section 10 Information principles

All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following information principles:

- (a) decisions should be based on the best available information:
- (b) decision makers should consider any uncertainty in the information available in any case:
- (c) decision makers should be cautious when information is uncertain, unreliable, or inadequate:
- (d) the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.

## Applying the Information Principle

41. It is clear that a decision maker must consider the best information while being cautious when the information is uncertain, unreliable, or inadequate. This requires an active balancing of interests between those that advocate for maximum justifiable catch and those advocating for a more restrained setting, while having regard to the uncertainty and unreliability of information.
42. Currently the information generated by a stock assessment and passed through a science working group is considered as 'best'. However, the outputs from this process are easily manipulated and often hotly contested, as per [PMCSA Report](#).
43. Both the Information and Environmental Principles of the Act demand an active consideration of risk and reward by the Minister when setting catch limits. It is

inconceivable that such nuanced considerations can be accommodated within pre-set decision rules that are routinely based on CPUE analysis and can be set to operate for many years, relying entirely on an uncertain assessment made with uncertain data.

44. A pre-set decision rule severely weakens the ability, and statutory duty, to ensure sustainability. Section 13 relies on estimates of  $B_{MSY}$  to inform TAC settings. This is the most used provision directed at ensuring sustainability and relies upon a Minister to consider a wide range of factors, not simply applying the rubber stamp of a pre-set decision rule.
45. The instrument created by the Amendment Bill to guide catch settings lacks any test that would improve TAC setting in a manner consistent with the Purpose of the Act, has no limits on time or tests of veracity, or any bright line test that would indicate when any instrument was useful or when defeating the Purpose of the Act.
46. The purpose of the instrument is promoted as being more agile, reducing the amount of time needed to alter catch settings, using illusions that speed is beneficial. This is disingenuous. The only time speed is essential is when a stock is at the point of collapse, in all other situations time is well used. Fisheries systems tend to change slowly and time is available for a well-researched management proposal.
47. Ironically, it is when stocks are approaching collapse that pre-set decision rules are the most dangerous. The rule ignores everything other than one, maybe two, data sets that are tracked. It assumes stability of the ecosystem and isolates a single species from a complex interconnected ecosystem. Such an approach is archaic and doesn't reflect the experiences of Aotearoa.

### **McNamara's Fallacy**

48. The final word on the foolishness of the Amendment Bill is reflected in [McNamara's Fallacy](#):

The McNamara fallacy (also known as the quantitative fallacy), named for Robert McNamara, the US Secretary of Defense from 1961 to 1968, involves **making a decision based solely on quantitative observations (or metrics) and ignoring all others**. The reason given is often that these other observations cannot be proven.

#### **Logical Form:**

*Measure whatever can be easily measured.*

*Disregard that which cannot be measured easily.*

*Presume that which cannot be measured easily is not important.*

*Presume that which cannot be measured easily does not exist.*

49. This weakness is bolstered by the Burns effect "*when you can't measure the things that are important, you make the things you can measure important.*" Ken Burns states in the documentary series 'The Vietnam War':

The first step is to measure whatever can be easily measured. This is OK as far as it goes. The second step is to disregard that which can't be easily measured or to give it an arbitrary quantitative value. This is artificial and misleading. The third step is to

presume that what can't be measured easily really isn't important. This is blindness. The fourth step is to say that what can't be easily measured really doesn't exist. This is suicide.

50. Aotearoa routinely follows this path:

- (a) Measure CPUE, because we can and it's easy data e.g. catch per hook or trawl tow. This data is supplied by fishers and is part of the reporting requirements for commercial fishers. The costs are internalised to the fisher. However, not all fishing effort is the same;
- (b) We know a fish hook set 30 years ago has little resemblance to a hook set this month. The same problem arises for all types of fishing effort. The benefits of technology is seemingly endless. Fish finding equipment, sonar, seabed mapping, net monitors and a long list of improvements made to fishing effort that increases their efficiency and their CPUE, including the skill level of fishers that are quick to learn techniques and times to maximise their catch. Stock modelers use a 'standardisation' technique - a statistical technique to make CPUE standard over time and able to be used in the models. There is no way of validating the 'standardisation', it's simply a process that allows unusable data to be used and contains a high risk of misleading the subsequent stock assessment;
- (c) We know species are embedded in a complex predator/prey/habitat relationship but have no understanding as to how these interdependencies operate or where it is vulnerable, so we ignore it and concern ourselves with single species assessments.
- (d) Finally, we make a point estimate of biomass and yield for a single species while ignoring every other part of the ecosystem the species is embedded within as if it doesn't exist. **This is simply delusional. To add provisions to the Fisheries Act that permit this delusion to become a pre-set decision rule sets fisheries management back 50 years.**

51. Aotearoa has arrived at a crisis of depletion in most inshore fisheries by routinely ignoring McNamara's Fallacy.

52. The Amendment Bill acts in direct opposition to the government's intention to move to a more ecosystem based management regime. Permitting a pre-set decision rule using mainly CPUE for single species ignores the ecosystem and can never provide the nuance needed to apply the Precautionary Principle and defend against trophic cascades. **Only a Minister can make a determination in the national interest** by weighing the strengths and weaknesses in information and environmental understanding.

53. Enacting a provision that permits a pre-set rule to be used to set catch limits is reckless to say the least. It leads to a weakening of sustainability and places in doubt the Minister's obligation to ensure all species are managed sustainably.

## Consultation

54. The Bill proposes a new section 12.
55. The amendment proposes any changes made in catch settings resulting from applying a pre-set decision rule don't require consultation. The submitters' experience is that even when the rule is obviously flawed and leading to overfishing those advocating for the rule are deaf to the need for an offramp, an escape route from a flawed process.
56. The rock lobster fish stock on the coastline from the Hauraki Gulf to eastern Bay of Plenty (CRA 2) was taken to the point of functional extinction (in the Hauraki Gulf) by obsessively sticking to a *de facto* pre-set decision rule that had no basis beyond a simple CPUE index, but operated heavily in favour of commercial quota owners. It was only due to a once-only intervention by scientists that enabled the pre-set rule to be broken down, exposing obvious CPUE flaws, enabling the rule to be discarded and replaced with a fixed term TAC as part of a rebuild plan. **Appendix 4**

## New landings and discard rules

57. The Bill proposes to simplify and strengthen the commercial fishing rules relating to the landing or returning of fish and aquatic life by clarifying which fish and aquatic life must be landed and which will be allowed to be discarded at sea. To do this, the Bill proposes to include a new power authorising the Minister to issue exceptions that allow stocks or species to be returned to the sea or other waters.
58. The current rules and compliance limitations associated with the Quota Management System have enabled commercial fishers to catch too much and discard what they cannot sell. Fisheries managers have been aware of discarding issues for decades. In 2014 the MPI Director of Fisheries Management, Dave Turner, made it clear that discards were "the single biggest issue we face in our wild stock fisheries"<sup>10</sup>.

"As you are aware **discarding is a systemic failure of the current system and something we have not been able to get on top of from day 1** of the QMS. Fisheries Management can't quantify the tonnages involved but we suspect they are significant to the point that they are impacting on stocks. We estimate that if we found the golden bullet to stop discarding, we would probably put over half of the inshore fleet out of business overnight through lack of ACE availability to cover by-catch"<sup>11</sup>.

[Emphasis added]

59. The QMS rules and regulations have not sufficiently incentivised fishers to reduce unwanted or undersize catch by improving fishing practices. This may be continuing to fish in areas where large numbers undersize fish are caught or discarding quota species that the fishing companies deem too small to market. Red gurnard is one example of a commercial species with no minimum size limit that has long had an illegal economic size limit on what is landed, reported against ACE, and sold.

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<sup>10</sup> Independent Review of MPI/Mfish Prosecution Decisions Operations Achilles, Hippocamp and Overdue. Michael Heron QC. 15 September 2016. [5.3.47]

<sup>11</sup> Independent Review of MPI/Mfish Prosecution Decisions Operations Achilles, Hippocamp and Overdue. Michael Heron QC. 15 September 2016. [5.3.45]

60. The submitters support the widespread rollout of cameras on all commercial fishing vessels over 8 metres in length to verify reporting of capture of protected species and reduce discarding and waste of fish that must be legally retained.
61. Minimum legal size limits (**MLS**) in these proposals only apply to the main inshore finfish species. Fisheries New Zealand need to make it clear that removing MLS for shellfish and crustacea is not proposed.
62. The process to advise the Minister on which quota species will be exempt from the land-all catch is yet to be determined. Some criteria are proposed for fish to be released or discarded where:
- (a) the stock or species has an acceptable likelihood of survival; or
  - (b) the retention of the stock or species will have a negative economic value, for example ammoniating shark species that would taint other catch in the hold; or
  - (c) mandatory specific stock or species returns for a biological, fisheries management, or ecosystem purpose and the stock or species has an acceptable likelihood of survival.
63. The submitters have a particular interest in some high value recreational species that warrant exemptions. These include:
- (a) **Kingfish** which have high survival rates after catch and release and TACCs are generally set at bycatch levels only. Kingfish larger than 65 cm must be able to be released by commercial fishers if they are likely to survive and the 65 cm MLS for kingfish must be retained. This will help commercial fishers reduce deemed value costs if ACE is limited while avoiding calls for TACC increase to cover all catch.
  - (b) **Southern bluefin tuna and Pacific bluefin tuna** are high value recreational and commercial species if the right size and in good condition. Longline caught fish that are unwanted and likely to survive must be able to be released by commercial fishers.
  - (c) **Striped marlin, blue marlin, black marlin and shortbill spearfish** are non-commercial species, and not QMS species. The submitters support retaining this status and reject proposals by tuna longline fishers made over the years to “land a few dead marlin”. It will not end there, as we have seen in the East Australian tuna and billfish fishery where rules around “bycatch” were unenforceable and striped marlin progressively became a target species for tuna longliners.
64. There is no firm conclusion in the Departmental Disclosure Statement for the Bill about proposals to issue more commercial fishing quota to cover retention of catch that currently must be discarded as undersize. There is a related clause in the Regulatory Impact Statement:

“Changes to landings and discards rules will have the greatest impact on commercial fishers. This includes the cost of landing fish, and balancing this against annual catch

entitlements (ACE) that would have otherwise been returned to the sea, as well as the lost opportunity cost of storage constraints and having to land less desirable fish that previously were returned to the sea.

While all licensed fish receivers, quota holders and ACE fishers will incur additional costs, the main costs are expected to fall on inshore mixed trawl fisheries because the methods used and the species caught will be affected the most by the change in rules (for example, the removal of minimum legal size for species such as snapper and terakihi [sp]).<sup>12</sup>

65. If changes to the catch landing in the Bill are introduced the Submitters do not support issuing additional TACC to cover the landing of unwanted or undersize catch nor the transfer of the allowance set aside to 'allow for' other sources of fishing related mortality within the TAC.
66. **Issuing additional TACC would negate one of the key objectives of the Bill** because it would remove the incentives to achieve the stated objective to transition to a "commercial fishing sector that is innovative, technology driven, has highly selective practices and is responsive to cumulative pressures on the marine environment."
67. As highlighted in this submission, CPUE is not a reliable index of relative abundance of fish. There are a number of problems using commercial CPUE as an index of relative abundance in management decisions, let alone in predetermined management procedures, including but not limited to the following:
  - (a) Retaining all catch for a species will decouple CPUE from the existing time series and become effectively unusable until a new catch time series is developed.
  - (b) If most discard rules are not implemented until October 2026 **it could be 2031 before a standardised CPUE index with the new landing requirements could be developed.** Innovation in fishing gear and changes in selectivity over that time would further confound any underlying trends in abundance that were trying to be measured.
68. The simple solution is to have a science based approach to the large investment made in the rollout of cameras on boats. **Having a significant proportion of vessels fitted with cameras directly over a conveyor or fish table recording all catch on that vessel and using AI technology to record the species and size of fish with all location and fishing gear parameters would be a game changer.**
69. Expensive catch sampling projects once every three years or twice every five years for the most important species, and little or no catch sampling for less valuable species is not good enough. Enforcement objectives can still be met but they should not override the opportunity to significantly improve data collection for management and stock assessment.

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<sup>12</sup> Fisheries Amendment Bill: Strengthening Fishing Rules and Policies. Regulatory Impact Statement. Fisheries New Zealand. October 2021.[3]

## DECISIONS SOUGHT FROM THE COMMITTEE

70. The Submitters seek the following decisions from the Committee:

- (a) Acknowledge that the pre-set decision rule mechanism is a legislative attempt to provide for a decision-making approach that would otherwise be unlawful on basic administrative law principles i.e., the abdication of the duty to exercise a discretionary power. (See **Appendix 1**)
- (b) Reject the current Amendment Bill because it undermines the sustainability provisions in the current Fisheries Act (1996).
- (c) Acknowledge the need for any new legislation to strengthen ecosystem-based fisheries management, not undermine it.
- (d) Acknowledge that pre-set decision rules and proportional allocation are not necessary for the implementation of the onboard camera and monitoring programme.
- (e) Separate and progress the provisions in the Bill that relate to onboard cameras, discards, and penalties while setting aside aspects related to pre-set decision rules and changes to the Fisheries (Amateur Fishing) Regulations 2013, as those amendments need to be adequately considered and debated separately.
- (f) Accept the need to implement legislative and regulatory changes to enable the roll-out of onboard cameras on commercial fishing vessels, noting that the integrity of, and investment in, the camera roll-out programme will be jeopardised if the deepwater fleet and scampi vessels are not included from the outset.
- (g) Acknowledge the quid pro quo nature of this process where commercial interests will accept onboard cameras in exchange for a convenient mechanism that gives quota holders what they have coveted for decades – a share in the Total Allowable Catch (TAC) while reducing public interests in fisheries to a quota, a Total Allowable Recreational Catch (TARC).

## COMMITTEE HEARING

71. The Submitters wish to be heard in support of its submission. The Submitters wish to attend any pre-hearing meeting that may be convened.

**Dated** 17 June 2022

Bob Gutsell

On behalf of

The New Zealand Sport Fishing Council

Jim Yeoman \_\_\_\_\_

On behalf of

The New Zealand Angling & Casting Association

Allan Davidson \_\_\_\_\_

On behalf of

The New Zealand Underwater Association

## APPENDIX 1

### ADMINISTRATIVE LAW - ABDICATION OF DISCRETIONARY POWER

- 1.1 It is a fundamental and longstanding principle of administrative law that a public authority must not disable itself from exercising its discretion in individual cases. When an authority is entrusted with discretionary powers, discretion must be brought to bear in every case. Each case must be considered on its merits and decided as the statute and public interest may require.<sup>13</sup>
- 1.2 A decision-maker entrusted with a statutory discretion must not allow a fixed rule of policy to displace personal judgment. Each case calls for an “individualised response”<sup>14</sup> not “slavish adherence” to a rule.<sup>15</sup> Decision-makers may adopt policies and guidelines but not immutable rules admitting of no exceptions. Discretion must be exercised in a “real and genuine sense”.<sup>16</sup>
- 1.3 Of note, in the fisheries context, a Ministry of Agriculture and Fisheries imposed moratorium on all new licences for commercial fishers was found to be an unlawful abdication of discretionary power. The decision was not saved by the fact that the moratorium conserved the fishery, and was in the public interest and supported in the industry.<sup>17</sup> This illustrates the weight the Courts have placed on the importance of the genuine exercise of legislative discretion by decision makers.
- 1.4 Parliament is sovereign in New Zealand and has the power to legislate to allow the abdication of discretionary power, as is proposed by the Amendment Bill. However, given the importance of the principle of individualised exercise of discretion, Parliament must exercise great care and apply deep scrutiny to a bill that seeks to provide for the abdication of discretionary power. In practice, this requires consideration of the nature of the decision and discretion at issue and whether it is amenable to displacement with a fixed rule of policy.

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<sup>13</sup> See HWR Wade and CF Forsyth *Administrative Law* (11th ed, Oxford University Press, Oxford, 2014) at 259–276.

<sup>14</sup> *Bovaird v J* [2008] NZCA 325, [2008] NZAR 667 at [52].

<sup>15</sup> *Hopman v Complaints Assessment Committee* HC Wellington CIV-2005-485-1032, 14 February 2007 at [27].

<sup>16</sup> *Hamilton City v Electricity Distribution Commission* [1972] NZLR 605 (CA) at 639.

<sup>17</sup> *Vickerman Fisheries Ltd v Attorney-General* HC Wellington CP1007/91, 26 August 1994.

## APPENDIX 2

### PROPORTIONAL ALLOCATION

- 2.1 Proportional allocation of available catch is unacceptable especially when used as part of a pre-set decision rule.

#### **Kahawai proceedings**

- 2.2 In the kahawai proceedings the Supreme Court acknowledged the process the Minister follows when deciding how to set a Total Allowable Catch (TAC) that must **ensure** sustainability<sup>18</sup>.
- 2.3 The Court also accepted that the Minister must ‘allow for’ non-commercial fishing interests, both Māori customary and recreational interests, as per s 21 of the Act, before setting or varying a Total Allowable Commercial Catch (TACC).
- 2.4 The Court acknowledged the allowances for non-commercial interests are different to the entitlements to the TACC. That the allowance for recreational interests is the Minister’s best estimate of catch, and that the allowance must be reasonable. Also, that people providing for their wellbeing, particularly their social wellbeing, is an important element of recreational interests. [at 54, 55]
- 2.5 The Kahawai Legal Challenge [Court of Appeal proceedings](#) referred to the 1997 Court of Appeal ruling that discussed proportional allocation and clarified the status of the recreational allowance.
- 2.6 Snapper 1 proceedings

[Justice Tipping, Court of Appeal CA82/97, 22 July 1997, p 18]

#### **Proportionality**

The appellants’ proportionality argument which was based on the concept of equality of sacrifice must first face the acknowledged fact that neither Act makes any express provision to that effect. If proportionality is a legal requirement it must arise implicitly. The appellants recognise this and submit that the necessary implication should be made. It is important to recognise that what is allowed for by the Minister in respect of the interests for which he must allow before setting the TACC, is not a quota as such. To take recreational fishers as an example, the “allowance” is simply the Minister’s best estimate of what they will catch during the year, they being subject to the controls which the Minister decides to impose upon them e.g. bag limits and minimum lawful sizes. Having set the TAC the Minister in effect apportions it between the relevant interests. **He must make such allowance as he thinks appropriate for the other interests before he fixes the TACC. That is how the legislation is structured.** We do not consider it implicit in the relevant section or in the scheme of the Act as a whole that once the ratio of recreational tonnage to commercial tonnage is fixed there can be no

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<sup>18</sup> *New Zealand Recreational NZSFC Inc v Sanford Ltd* [2009] NZSC 54.

change in that ratio except on an increased biomass. Section 21(2) of the 1996 Act obliges the Minister to consult interested parties including Maori, environmental, commercial and recreational interests. He must do this before setting or varying TACC. Each group will no doubt seek to advance its own position in the process. We can see no reason why either as his primary purpose or as a consequence of some other purpose the Minister should not be able to vary the ratio between commercial and recreational interests. To do that is in our judgment within his powers.

There was a further complaint which can conveniently be dealt with under this heading. It was suggested that the Minister's decision was flawed because he had not taken any or any sufficient steps to constrain the recreational fishery. This is a point similar to one raised by the Maori appellants to be dealt with later. It is sufficient for present purposes to say that we are satisfied from the evidence that the Minister has made bona fide efforts to constrain recreational fishing. Bag limits have been substantially reduced over recent years and the minimum legal size for snapper was quite recently increased from 25cm to 27cm. In addition, the Minister has forecast further work in this area which satisfies us that he is very much alive to the need to restrain recreational fishing in a way which seeks to prevent the commercial sacrifice being caught on recreational hooks. The imprecision of the actual recreational catch is one good reason why strict proportionality would be near impossible to achieve. That makes it difficult to imply an obligation to achieve it. Once one retreats from the proposition that strict proportionality is required, there can be no satisfactory solution other than that the Minister must act reasonably to seek to stop the saving resulting from TACC reductions being lost to recreational fishing.

A further matter which points against any implication of proportionate reduction is that the Minister is in our judgment entitled to bear in mind changing population patterns and population growth. **If over time a greater recreational demand arises it would be strange if the Minister was precluded by some proportional rule from giving some extra allowance to cover it**, subject always to his obligation carefully to weigh all the competing demands on the TAC before deciding how much should be allocated to each interest group. In summary, it is our conclusion that neither the specific sections (28D and 21) nor the Acts when viewed as a whole contain any implied duty requiring the Minister to fix or vary the recreational allowance at or to any particular proportion of the TACC or for that matter of the TAC. **What the proportion should be, if that is the way the Minister looks at it from time to time, is a matter for the Minister's assessment bearing in mind all relevant considerations.**

## APPENDIX 3

### FISHERIES ACT 1996

#### 3.1 PART 4 - QUOTA MANAGEMENT SYSTEM

##### Declaration of quota management system

##### Section 21

##### **Matters to be taken into account in setting or varying any total allowable commercial catch—**

(1) In setting or varying any total allowable commercial catch for any quota management stock, the Minister shall have regard to the total allowable catch for that stock and ***shall allow for—***

(a) The following non-commercial fishing interests in that stock, namely-

- (i) Maori customary non-commercial fishing interests; and
- (ii) Recreational interests; and

(b) All other mortality to that stock caused by fishing.

[Emphasis added]

(2) Before setting or varying a total allowable commercial catch for any quota management stock, the Minister shall consult such persons and organisations as the Minister considers are representative of those classes of persons having an interest in this section, including Maori, environmental, commercial, and recreational interests.

(3) After setting or varying any total allowable commercial catch under section 20 of this Act, the Minister shall, as soon as practicable, give to the parties consulted under subsection (2) of this section reasons in writing for his or her decision.

(4) When allowing for Maori customary non-commercial interests under subsection (1), the Minister must take into account—

(a) Any mataitai reserve in the relevant quota management area that is declared by the Minister by notice in the *Gazette* under regulations made for the purpose under section 186:

(b) Any area closure or any fishing method restriction or prohibition in the relevant quota management area that is imposed by the Minister by notice in the *Gazette* made under section 186A.

(5) When allowing for recreational interests under subsection (1) of this section, the Minister shall take into account any regulations that prohibit or restrict fishing in any area for which regulations have been made following a recommendation made by the Minister under section 311 of this Act.

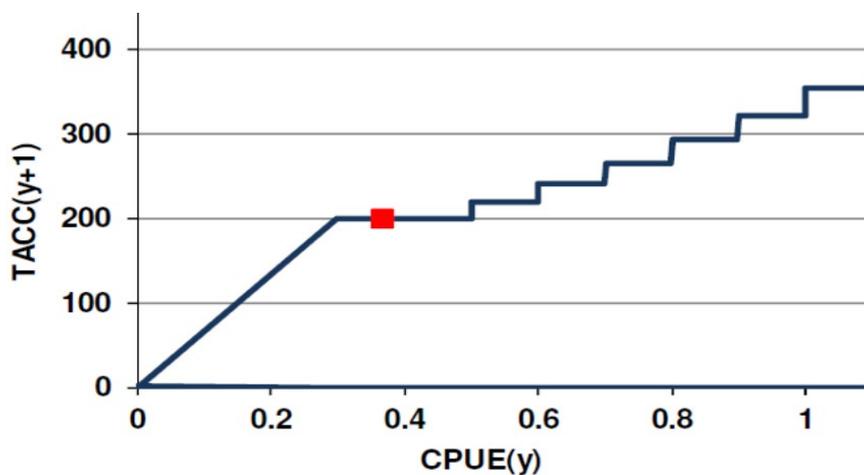
## APPENDIX 4

### SETTING CATCH LIMITS

- 4.1 The Fisheries Act 1996 relies on estimates of Maximum Sustainable Yield (MSY) and the stock size that will produce MSY. The stock size required to produce MSY ( $B_{MSY}$ ) is usually expressed as a percentage of the natural unfished biomass of the stock  $B_0$ .
- 4.2 The Act provides for proxies to be used when  $B_{MSY}$  estimates are unavailable (s 13(2)). These proxies generally utilise Catch per Unit of Effort (**CPUE**) to find a point in the past where stocks were low but recovered. Somewhere above this level is a CPUE that is estimated to be not inconsistent with the  $B_{MSY}$  objective.
- 4.3 See the case study for the unsuitability and ease of manipulation with disastrous consequences of relying on CPUE based pre-set decision rules.
- 4.4 The Amendment Bill is seriously flawed as it enables catch limits to be determined using pre-set decision rules based (solely) on CPUE, or any other consideration chosen for that matter. Nothing is ruled out.

#### Case study – CRA2

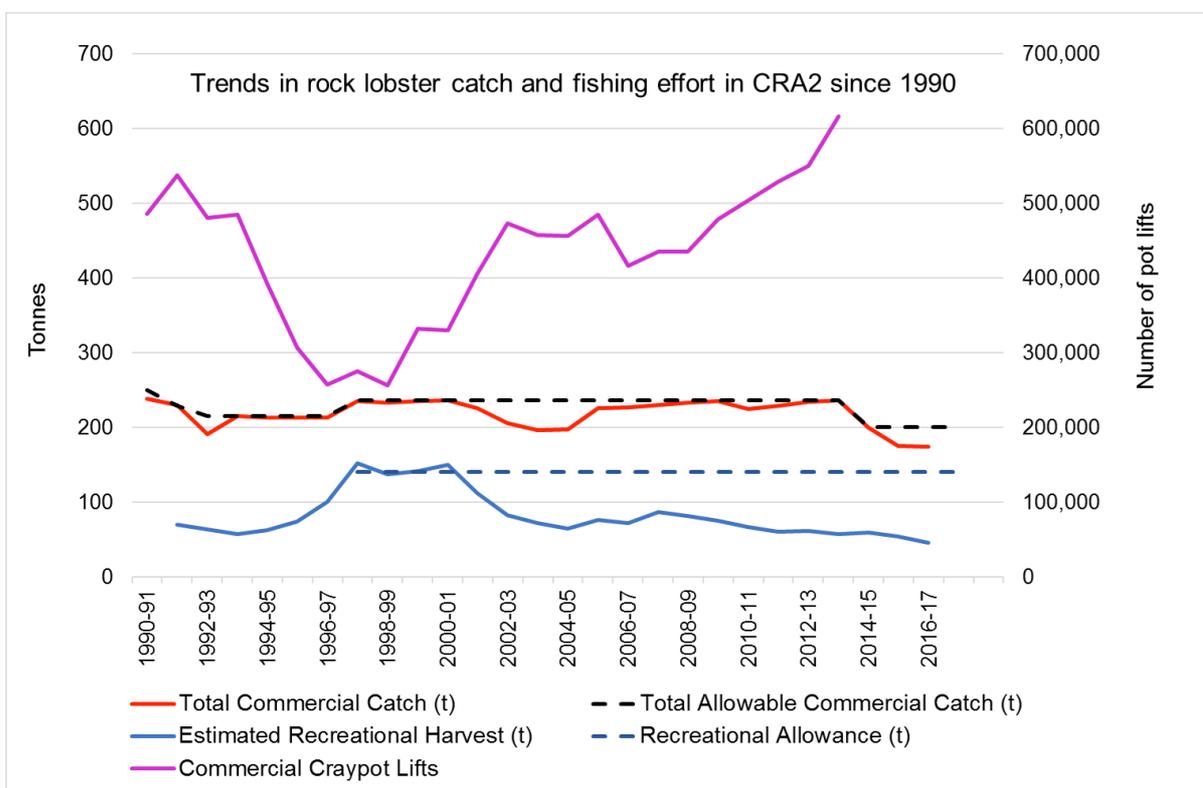
4.5



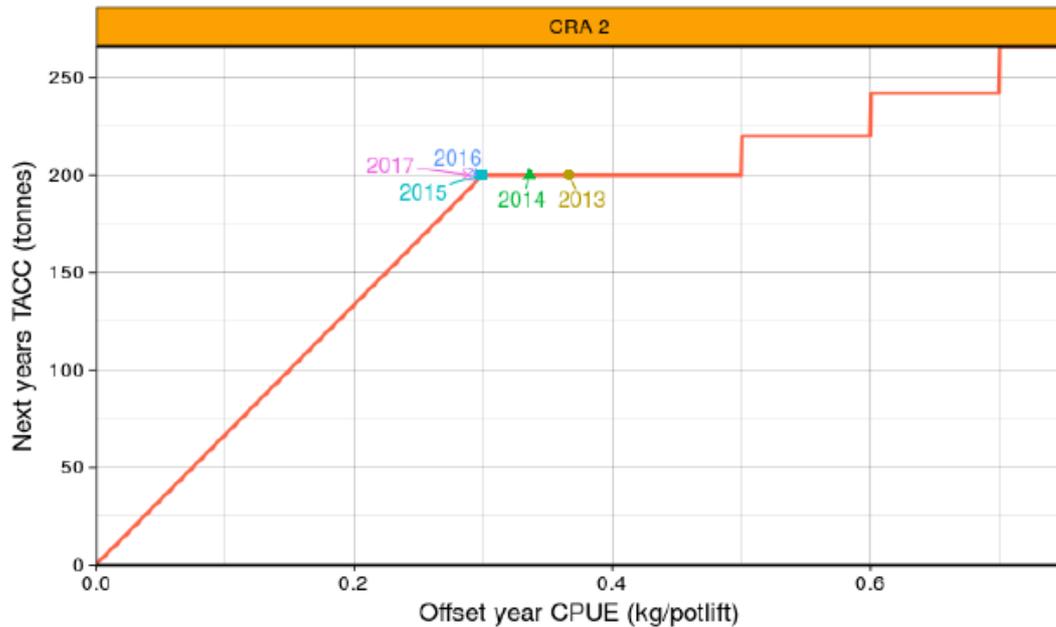
**Figure 1:** Example of pre-set decision rules as applied to the rock lobster fish stock spanning the Hauraki Gulf down the east coast to East Cape. CRA 2. Source: Fisheries New Zealand.

- 4.6 The management procedures used in the rock lobster fishery are current examples of a decision rule. The CRA 2 decision rule uses CPUE to set the Total Allowable Commercial Catch (**TACC**). If CPUE declined to approximately 0.3Kg per pot lift the TACC would be reduced, conversely if CPUE increased to 0.5Kg per pot lift the TACC would be increased.

- 4.7 The application of this rule up to 2018 saw the stock collapse, because in an effort to catch the TACC more and more potlifts were used without triggering any change to the TACC. (Figure 2). Over this period the non-commercial catch plummeted from an estimated 140 tonnes to around 20 tonnes. This is typical and use of decision rules has also depleted CRA1 (Northland) and CRA 3 (Gisborne).
- 4.8 Despite the Minister having a statutory duty to allow for non-commercial interests, and consider and mitigate the effects of fishing on the environment, these discretionary powers could not be used as they had been devolved to a quantitative formula. The scheme of the Fisheries Act is defeated by using CPUE based decision rules to control harvest. The legality of these decision rules is highly questionable given that Ministerial discretionary powers are not transferable.
- 4.9 In CRA 2 potlifts doubled without triggering a reduction in the TACC. This plot shows that while the TACC remained the same from 1997–98 to 2013–14 fishing effort rose from 274,00 pot lifts per year to over 616,000. No other rock lobster quota management area had more than 370,000 pot lifts in 2013–14, yet CRA 2 commercial fishers have consistently exceeded that level since 2001–02 (Figure 2).



**Figure 2:** Trends in rock lobster catch and fishing effort compared to the TAC, TACC and recreational allowance in CRA 2, between 1990 and 2017. Data source: Fisheries New Zealand. Image: New Zealand Sport Fishing Council.



**Figure 3:** The CRA 2 management procedure. The coloured symbols show the 2013 to 2017 off-set year CPUE and the resulting TACCs. Source: Fisheries New Zealand.

### **CPUE is not a proxy for abundance**

- 4.10 Catch Per Unit of Effort (CPUE) point estimates, with little supporting information, are not a reliable proxy for abundance. In our view, implementation of the proposed pre-set decision rules will not meet the statutory obligations in the Fisheries Act 1996 (the Act).
- 4.11 The growing gap between modelled stocks and the observed stocks is diverging to the point where the standardised CPUE, the management procedures based on CPUE, and stock assessment models can no longer be relied upon as providing the 'best available information', as required by the Act. Where there is uncertainty in what is being measured by CPUE the Minister is statutorily obliged to take a precautionary management approach to ensure sustainability.
- 4.12 A full review must be undertaken to correct the misnomer that in all rock lobster stocks 'CPUE is a reliable indicator of abundance'. An alternative management strategy must be used where CPUE does not reflect abundance, and the Submitters remain unconvinced it does in any fish stock in New Zealand waters.

## APPENDIX 5

- 5.1 Hansard transcript of discussion by Dan Bolger, Deputy Director-General Fisheries New Zealand, to the Primary Production Committee on 24 June 2021.

Dan: “We manage to a target. Typically, that target is about 40 percent of what we call unfished biomass—so the amount of biomass of fish that would be there if there wasn’t any fishing. So, typically, the target is around 40 percent. And then beneath that, we’ve got what we call a soft limit at 20 percent where we would absolutely take action. We would take action before that, but we would absolutely take action if something hit 20 percent. And if something gets to 10 percent, which we call our hard limit, then we would consider closing that fishery; generally, we would close that fishery.

“So in relation to the soft limit—that’s the 20 percent one—we know the status of about 68 percent of the fish that are caught. So there’s about 30, 32 percent of fish caught that we can’t confidently say with full scientific backing: what’s their status against that soft limit? So that’s an ongoing challenge and opportunity for us. Now, of the ones we do know, 131 stocks representing 91 percent of the fish are above that limit; 28 stocks, so 9 percent of the fish, are below it. And then about three-quarters of the ones above the soft limit are also above the target. So that’s the kind of status. So, you know, in the round, we’d say that’s pretty reasonable, but there are individual fish stocks that are in trouble and do need attention and we’re very focused on that<sup>19</sup>.

### Our discussion

- 5.2 Many important fish stocks do not have an agreed management target. In the absence of an agreement, the default management target is B40, that is managing a stock to a level that is assumed to be around 40% of its natural, unfished level.
- 5.3 Based on more recent international standards the submitters now advocate for a minimum management target of 50% of unfished biomass. Whatever the target, there’s zero opportunity to read it down.
- 5.4 If you ask old timers to imagine the crayfish population when they were young and now take a guess at for every 100 crayfish there were 50 years ago and compare that to how many there are now, the answer is appalling –
- (a) In the Hauraki Gulf-Bay of Plenty area CRA 2: 3 to 5 at best; and
  - (b) In the east Northland area CRA 1: 5 to 10 at best.
- 5.5 Relative abundance calculated by Catch Per Unit of Effort (CPUE) that ignores stock status is the deception. There cannot be a target below 40% and whether it’s possible to achieve that is not the point. The point is to set the target then devise a harvest strategy that achieves it. Anything else is just justifying exploitation rates that keep stocks at pitiful levels while undermining the ecosystem productivity that is essential for all fisheries.

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<sup>19</sup> Dan Bolger Deputy Director-General Fisheries New Zealand. Briefing into Fisheries. Primary Production Committee. 24 June 2021.