



**20 December 2016**

**Title of Consultation: Future of Our Fisheries**

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**SUMMARY OF SUBMISSIONS**

Submission 1: Initiate an independent review of New Zealand's fisheries management system without delay. This should take the form of a Royal Commission of Inquiry or similar.

Submission 2: The practice of discarding of fish should be addressed as a matter of urgency to minimise wastage and the mortality of juvenile fish.

Submission 3: Ensure that any new regulations for innovative trawl gear include a requirement that the impact of new gear on the benthic environment be fully assessed and adequately addressed to avoid adverse impacts on benthic habitats.

Submission 4: Shared fish stocks should be managed for increased abundance, with clear policy developed, setting out what this means in individual cases.

Submission 5: The government should not provide a certification scheme for fisheries, due to the conflict of interest with its role as fisheries manager, but should support independent schemes.

Submission 6: New approaches should be developed for assessing low-information stocks such as new biological indicators for mixed-species fisheries.

Submission 7: Implement the Integrated Electronic Monitoring and Reporting System without delay on all commercial fishing vessels.

Submission 8: Significantly scale up of investment in fisheries research, to at least equivalent to early 1990s levels in real terms, and so that the stock status of the large majority of harvested species can be reliably determined.

Submission 9: Refine and develop the current methodology for estimating recreational harvest and extend to additional species.

Submission 10: Require all amateur charter vessels to report all their catch and introduce electronic monitoring.

Submission 11: The Ministry should develop streamlined processes for reconfiguring QMAs into smaller management units to facilitate more effective management.

Submission 12: The Commerce Commission should monitor the operation of the quota and ACE markets to ensure that they operate competitively without undue market domination.

Submission 13: EDS supports the identification and quantification of non-commercial and non-extractive values in fisheries and a healthy aquatic environment. A clear pathway needs to be identified for the information to directly impact fisheries decision-making.

Submission 14: EDS supports the application of an ecosystems-based approach to fisheries management in New Zealand, but this needs to be achieved through the development of an integrated ecosystem-based framework, outside the fisheries management system, which the QMS is required to operate within.

Submission 15: EDS supports the use of externally commissioned research, so long as it is of high quality and independently peer reviewed, and is used as a supplement to, and not a replacement of, the information necessary to underpin high quality fisheries decision-making that should remain commissioned by the government.

Submission 16: Substantially increase the investment levels in fisheries management capability, to at (least initially) reverse the 40% decline in resource to manage commercial fishing experienced since 2003.

Submission 17: Any delegation of decision-making should not occur prior to the development of a clear and robust framework within which that decision-making can be exercised and opportunities for review where the decision is wrongly taken.

Submission 18: Improved fisheries decision-making processes need to be developed to enable effective engagement of all sectors including commercial, customary and recreational fishing and environment.

Submission 19: EDS supports the establishment of a National Fisheries Advisory Council, so long as the membership is wide ranging and reflective of the broad range of interests in fisheries, and there is a formal commitment by the Ministry to give effect to the Council's recommendations.

Submission 20: That priority be placed on fixing the key underpinnings of the fisheries management system including the serious deficits in science resourcing, management capability, ecosystem framing and good process.

## **INTRODUCTION TO EDS**

The Environmental Defence Society (EDS) is a not for profit environmental organisation comprised of resource management professionals who are committed to improving environmental outcomes. EDS was first established in 1971 and operates as an environmental think tank on environmental management and litigator on environmental matters of national importance.

EDS has a long interest in the management of New Zealand's marine space. We have produced a number of policy reports on relevant topics including oceans policy, the establishment of an Environmental Protection Authority, the development of new legislation for the Exclusive Economic Zone (EEZ), the protection of marine mammals, marine protected areas and the environmental history of the Hauraki Gulf.

EDS has also supported the introduction of marine spatial planning in New Zealand, with EDS Policy Director Raewyn Peart being appointed as a Stakeholder Working Group member for the three-year long Seachange Tai Timu Tai Pari project which has successfully developed a marine spatial plan for the Hauraki Gulf. The plan, which was agreed by multi-stakeholders including fishing interests, was publicly released on 6 December 2016.

More recently EDS has been undertaking research into New Zealand's fisheries management system. The research is still underway and we will be releasing our findings during the first half of 2017.

## **NEED FOR INDEPENDENT REVIEW**

EDS welcomes a review of the fisheries management system. The New Zealand Quota Management System (QMS) has been in place now for over 30 years. It is timely that the system is reviewed to identify whether it is still meeting the country's needs, and if not, how it might be changed. The consultation documents raise a number of important issues that need to be addressed. However, in the main, the issues identified are symptoms of deeper problems within the current fisheries management system. Unless these underlying problems are identified and addressed, the solutions proposed are unlikely to be sufficient to ensure that the fisheries management system is performing to the level required to ensure 'abundant fisheries' and 'a healthy aquatic environment' in the public interest.

Logically, it is not possible for an agency to fully review a management system that it is in charge of implementing, because the agency is then, in effect, reviewing its own performance. What is required, in this instance, is a in-depth, publicly transparent, independent review. It is EDS's view that such a review is overdue and needs to be undertaken without delay. Much has changed, over the past three decades, in terms of the challenges facing fisheries management and public expectations of what such a management system needs to deliver.

***Submission 1: Initiate an independent review of New Zealand's fisheries management system without delay. This should take the form of a Royal Commission of Inquiry or similar.***

## **STRATEGIC PROPOSAL 1: MAXIMISING VALUE FROM OUR FISHERIES**

### **Option 1: Address discarding of fish**

EDS supports efforts to address the issue of discarding of fish. This has always been a challenge under the QMS system, and is long overdue for attention, as highlighted in the Heron report.<sup>1</sup> The issue needs to be addressed as a matter of urgency in a practical manner, that reduces wastage and juvenile mortalities, whilst also enabling fishers to undertake their business in an efficient manner. It will need to be addressed as a precursor to the introduction of electronic monitoring.

***Submission 2: The practice of discarding of fish should be addressed as a matter of urgency to minimise wastage and the mortality of juvenile fish.***

### **Option 2: Encourage and enable innovative harvest technologies**

EDS supports the intention to enable innovation in fishing gear. In respect of trawl gear, any new regulations needs to include strong incentives to develop technologies that avoid the need to drag fishing gear along the seabed, given the known adverse impacts this has on benthic habitats. The impacts of new gear on benthic habitats needs to be assessed including any impacts on habitat degradation, suspension of sediment and habitat recovery from historic damage.

***Submission 3: Ensure that any new regulations for innovative trawl gear include a requirement that the impact of new gear on the benthic environment be fully assessed and adequately addressed to avoid adverse impacts on benthic habitats.***

### **Option 3: Maximise the value of our shared fisheries**

EDS supports the proposal that shared fish stocks be managed for increased abundance. This will reduce the cost of commercial harvest, increase the accessibility of seafood for customary fishers, improve the experience of recreational fishing and reduce ecosystem impacts of harvest. It can therefore provide a win-win for all sectors. Such an approach would need to be underpinned by clear policy setting out what 'abundance' means when applied to individual stocks

***Submission 4: Shared fish stocks should be managed for increased abundance, with clear policy developed setting out what this means in individual cases.***

### **Option 4: Build the market position of New Zealand seafood**

EDS agrees that there is a need for a more tailored certification system for smaller fisheries in addition to the system operated by the Marine Stewardship Council. This could support, for example, regional brands such as the Hauraki Gulf Marine Park. It seems unlikely, however, that a government certified scheme would achieve credibility in the marketplace,

given that the government is also the fisheries manager, and therefore would be effectively assessing its own performance. Government could, however, support the development of smaller independent schemes.

***Submission 5: The government should not provide a certification scheme for fisheries, due to the conflict of interest with its role as fisheries manager, but should support independent schemes.***

**Option 5: Deliver value from the new and underdeveloped fisheries**

Many low information stocks have high value, including commercial value (eg terakihi) and customary and recreational values (eg flatfish, rig). Others potentially play a significant ecosystem role in terms of providing food for other species (eg jack mackerel, pilchards, anchovy). Most inshore species have been over fished in the past and some are still over fished. It is important that we manage these stocks more effectively. Better information will enable better management of these important stocks, and longer term sustainability.

***Submission 6: New approaches should be developed to assess low-information stocks such as new biological indicators for mixed-species fisheries.***

**STRATEGIC PROPOSAL 2: BETTER FISHERIES INFORMATION**

**Option 1: Implement Integrated Electronic Monitoring and Reporting System**

EDS strongly supports the implementation of electronic monitoring and reporting so that robust information is obtained about catch, by-catch, and discarding on all commercial fishing vessels. Such a system is likely to change behavior out on the water for the better. It will also provide more reliable figures on the extent of bycatch of protected species and discarding, thereby enabling more effective responses to these issues to be put into effect.

To have credibility, the system needs to be transparent and independently verifiable. The resultant data and analyses should be publicly available (subject to commercial confidentiality issues being addressed). Policy needs to be developed, setting out clear processes and expected management responses, when poor performance or adverse information is revealed by the cameras. This is to address the problems highlighted in the Heron report, which indicated that compliance processes within MPI had been unclear, with differing expectations between observed fishers, staff and management, resulting in low public confidence in the compliance system.

EDS would emphasise that this type of onboard generated fisheries data is not a substitute for investment in good industry-independent fisheries science as outlined below.

***Submission 7: Implement the Integrated Electronic Monitoring and Reporting System without delay on all commercial fishing vessels.***

## Option 2: Gather more information to support decision-making and value-adding

### *Increasing investment in fisheries science*

New Zealand's fishery management system has long been starved of resources to operate effectively. The investment in fisheries science has reduced markedly during the tenure of the QMS. As the fisheries scientists working within the system recently noted '**...most species have received little if any research attention for many years, and the overall fisheries research budget has decreased considerably – to around 50% of the level of the early 1990s in real terms.**' At the same time the number of species and stocks in the QMS has increased 3.5-fold and research has had to expand its remit to cover a wider range of issues including recreational fisheries, the environmental effects of fishing and international issues. '**There is particular concern for inshore finfish fisheries where the percentage of stocks of unknown status has been increasing in recent years.**'<sup>2</sup>

The result of this long-term under-investment is that the fisheries management system is 'flying blind' in many cases, with very little known about the species being managed. There are significant gaps in knowledge about fish life cycles and biological characteristics, the impacts of current harvesting levels, the current size of the stock, and the size of a sustainable stock level. Even less is known about any ecosystem linkages.

An example of the extent of this lack of scientific knowledge to inform management decision-making is shown by the situation in the Hauraki Gulf, which is the mainstay of the commercially important snapper fishery, and which supports the largest number of recreational fishers. It would therefore be expected to have high priority for investment in fisheries research. A snapshot of the state of knowledge of fish stocks in the Gulf, as at 2013, is shown in Table 1. This indicates that, of the 14 main commercially harvested finfish stocks, only enough is known about four of them to form a conclusion as to whether the stock is at or above target levels, and of these, there is only real confidence that one stock (KAH1) is at or above that level.

Table 1: Status of major Hauraki Gulf commercial finfish stocks as reported in MPI's 2013 Stock Status Table (from the Hauraki Gulf Forum's State of Our Gulf 2014)

Stock	At or above target levels
Kahawai (KAH1)	Likely to be
Red gurnard (GUR1E)	About as likely as not
John dory (JDO)	Unlikely
Snapper (SNA1)	Very unlikely
Tarakihi (TAR1)	Don't know
Trevally (TRE1)	Don't know
Flatfish (FLA1)	Don't know
Rig (SPO1)	Don't know
Jack Mackerel (JMA1)	Don't know
Pilchard (PIL1)	Don't know
Leatherjacket (LEA1)	Don't know

Barracoutta (BAR 1)	Don't know
Grey mullet (GMU1)	Don't know
Parore (PAR1)	Don't know

Most scientific information on the status of inshore fish stocks is derived from data provided by fishers, and for many stocks, there is no fishing-industry independent data collected. As a result, most stock assessments rely on catch per unit effort (CPUE) data to provide a proxy for stock abundance. This raises concerns as it has long been acknowledged that the use of CPUE data to indicate stock abundance is 'notoriously problematic'.<sup>3</sup>

The potential extent of such problems is highlighted by the recent disparity between the stock abundance figures for crayfish in CRAY2 (Hauraki Gulf and Bay of Plenty) derived respectively from CPUE figures and from observed abundance inside and outside the Cape Rodney-Okakari Point (Leigh) marine reserve. The latest stock assessment in 2013, largely based on CPUE, concluded that the stock was 136% of  $B_{MSY}$  (the size of stock which supports maximum sustainable yield) or around 35% of the unfished population. The data from the Leigh marine reserve, based on directly observed abundance over 20 years, indicates that the population outside the reserve is now less than 1% of the unfished population.

This lack of scientific information underpinning New Zealand's QMS is a serious issue. The QMS can only work effectively if the harvest cap is set at the right level. This can only be achieved if robust information on the state of fish stocks is available. The current deficit in good science is cumulative over time and will almost certainly worsen if steps are not taken to rectify things now.

***Submission 8: Significantly scale up of investment in fisheries research, to levels at least equivalent to the early 1990s in real terms, and so that the stock status of the large majority of harvested species can be reliably determined.***

#### *Monitoring of non-commercial fisheries*

Effective fisheries management is reliant on good information about harvest levels. Harvest levels in the commercial fishing fleet is reasonably well monitored and will improve with the introduction of electronic monitoring. Harvest levels in the other sectors is less well known.

Ad hoc collection of information by recreational fishing organisations seems unlikely to provide reliable data except in very small communities where the majority of amateur fishers are known to each other, act as a collective, and have an incentive to report their catch.

The current method of estimating recreational catch is well regarded and appears to provide reasonably reliable figures for some species in some areas. This provides a solid basis on which to build. One of the notable gaps in the estimate of recreational catch is with non-fish species such as crayfish. It would be useful to invest in refining and extending the methodology to increase reliability and to capture additional species.

***Submission 9: Refine and develop the current methodology for estimating recreational harvest and extend to additional species.***

There appears no reason why amateur charter vessels, which are in effect operating commercial businesses based on fish harvest, should not be required to report all their catch, and to have electronic monitoring installed (at least on the larger vessels). This would provide reliable figures from this growing sector.

***Submission 10: Require all amateur charter vessels to report all their catch and introduce electronic monitoring.***

*Monitoring fisheries at finer geographic scale*

It is becoming increasingly evident that many of the quota management areas are too large to enable effective management of fish stocks. This is for a number of reasons including the lack of alignment with biological stocks (which may be smaller or larger than the QMA), inability to manage concentration of effort and localised depletion. Although information is now frequently collected on a finer scale than the QMA, this has not necessarily translated into better management, as stock management decisions by the Minister are generally still made across the entire QMA. Therefore, to be effective, monitoring at a finer scale needs to be accompanied by management at a finer scale.

There are many examples of where the current spatial management frame is not working well, including:

- Snapper 1 which is thought to consist of 3 stocks, East Northland, Hauraki Gulf and Bay of Plenty, with some mixing between the Hauraki Gulf and Bay of Plenty stocks. The last assessment undertaken in 2013 estimated that the Bay of Plenty stock was only 6% of its virgin biomass, far below the 40% target and below the hard limit of 10% when a fishery should be considered for closure under the Harvest Strategy Standard. This can be compared with the estimate for the Hauraki Gulf of 24%. The management of the Bay of Plenty stock as part of a larger QMA has resulted in no targeted management action being taken to address the severe depletion of this stock.
- Flatfish 1 is thought to consist of many localised stocks within a very large QMA encompassing the entire top half of the North Island. The TACC set in 1986 has never been caught, making it effectively an open access fishery. Current harvest levels are less than half the TACC. This management framework has encouraged serial localised depletion as a large number of fishers can concentrate in one harbour at a time until stocks are depleted before moving on to another harbour and stock. Catch per unit effort data shows ongoing decline for the past decade with the index in the Hauraki Gulf sitting at its lowest level since the mid-1990s. In the Kaipara Harbour the index has tracked on a downwards trend since the stock was introduced into the QMS in 1996

(with a brief upwards blip in 2009 when fishing intensity dropped off). There has been no discernible management response to this long lasting decline in the fishery.

The marine spatial plan developed by the Seachange Tai Timu Tai Paru process concluded that effective management of the Hauraki Gulf required the establishment of a separate QMA. The Ministry needs to develop more streamlined processes to split QMAs into smaller units where justified by the management challenges. Finer scaled collection of data could then follow this spatial management shift.

***Submission 11: The Ministry should develop streamlined processes for reconfiguring QMAs into smaller management units to facilitate more effective management.***

#### *Commercial socio-economic information*

It is important for the Ministry to be as informed as possible when making decisions, and access to basic economic information, as suggested in this proposal would be helpful. EDS also suggests that the Commerce Commission should take a broader monitoring role over the operation of the Quota and ACE markets, to help ensure that they operate as competitive markets, without undue market domination, to support economic efficiency and innovation in the commercial fisheries sector.

***Submission 12: The Commerce Commission should monitor the operation of the quota and ACE markets to ensure that they operate competitively without undue market domination.***

#### *Non-commercial values*

EDS supports the identification and quantification of non-commercial values in fisheries and a healthy aquatic environment. In many cases, marine life provides greater value to the community if it is left in the water when compared to harvest values (particularly for fish with a low market price). Such non-commercial values should include intrinsic values, ecosystem services, and non-extractive uses such as marine tourism, education and recreation (including diving). There are now available increasingly sophisticated economic methods to value non-market goods that could be deployed.

Such information could help inform target levels of stocks (such as establishing higher target levels for species which play important ecosystem roles) and allocation between users (commercial, recreational, customary and non-extractive). It could also be used to provide a broader planning framework, within which fisheries management decision-making could operate, such as with the application of marine spatial planning.

It is important that the mechanism through which the information will be applied to decision-making is clearly identified up front. A lot of excellent research has been undertaken related to the broader aquatic environment, but it appears to have had little impact on fisheries management decision-making, because the pathway for its application has not been identified and adopted.

***Submission 13: EDS supports the identification and quantification of non-commercial and non-extractive values in fisheries and a healthy aquatic environment. A clear pathway needs to be identified for the information to directly impact fisheries decision-making.***

**Option 3: Invest in ecosystem-based management**

There has been a chronic failure of the fisheries management system to adequately address the environmental impacts of fishing to date, including failure to adopt an ecosystem approach. Unless the current proposal acknowledges the history of this issue, the consistent failure to deliver on it over 30 years and the reasons for that, it is unlikely to be any more effective than the numerous past efforts of the Ministry in this area.

It is instructive to review the history of this issue. When the QMS was first introduced in 1986, there was a general expectation by fisheries managers that the reduction in harvest levels and effort brought about by the new system would address any environmental impacts of fishing activity and no further action in this area was required. This approach was considered by the Fisheries Task Force appointed in 1991 to review the new system and found wanting. The Task Force noted 'The rationale of having the MSY stock level as a nominal means of satisfying environmental concerns is obscure.' It went on to say 'The MSY is a single parameter that can be derived from bio-mathematic models of a fishery. This intellectual convenience does not justify its selection as the major environmental constraint on fishing.'<sup>4</sup> The Task Force identified the failure to address environmental impacts of fishing as a key weakness of the system. It recommended setting clear rules to protect the environment (environmental bottom lines) and the adoption of ecosystems based management. Some of the recommendations were picked up by Parliament in the Fisheries Act 1996 but have yet to be adequately implemented.

Table 2 summarises the strategic approach that has been taken by the Ministry of Fisheries, and subsequently MPI, to address the environmental impacts of fishing activity. The need to apply an ecosystems-based approach to fisheries management was recognised in the Ministry of Fisheries' 1996 strategic document *Changing Course - Towards Fisheries 2010*. There was a continuing commitment to developing an ecosystems approach to fisheries up until 2003, but this gradually gave way to a focus on developing environmental standards. This standards approach was formalised, in 2005, in the *Strategy for Managing the Environmental Effects of Fisheries*.

An emphasis on standards continued for subsequent years and in 2009 the Ministry announced that a seabird standard would be finalised by the end of the year and a benthic habitat standard was expected to be operational by the end of 2011. Neither eventuated, and in 2011 there was an apparent change of direction, with no mention of environmental standards or any alternative strategy to address the environmental impacts of fishing activity (apart from the ongoing initiatives to address protected species bycatch). After 2011, when the Ministry of Fisheries merged into MPI, there was no mention of managing the environmental impacts of fishing activity and in fact almost no mention of fisheries management at all.

Table 2: Ministry of Fisheries and MPIs strategic intent re environmental impacts of fishing

Date	Strategic Intent
1996	<i>Changing Course - Towards Fisheries 2010</i> recognises 'the need to manage fish in the context of their environment; that is, <b>a management approach based on the ecosystem</b> '
1998	<i>Strategic Plan 1998-2003</i> recognises the Ministry's role of 'specifying <b>environmental goals and standards</b> related to the use of fisheries'.
2003	<i>Strategic Plan 2003-2008</i> 'We will continue to develop an <b>ecosystem approach</b> to fisheries'
2004	<i>Statement of Intent 2004-2008</i> 'The way chosen to improve the management of our fisheries is through <b>setting standards</b> '
2005	<i>Statement of Intent 2005-08</i> , 'Protecting the health of the aquatic environment means that government, in consultation with stakeholders, should <b>determine the limits of acceptable human-induced change, and ensure these limits are not exceeded.</b> ' Priorities for next 3 years includes 'Implement the 'Strategy for Managing the Environmental Effects of Fishing', including by <b>developing, implementing, and reviewing environmental standards</b> specifying required levels of performance and acceptable levels of modification to fisheries and the aquatic environment, and developing mechanisms to achieve the standards.' Also 'in association with other agencies, <b>undertake research into managing the effects of fishing on ecosystem function.</b> ' <i>Strategy for Managing the Environmental Effects of Fishing</i> released. Identifies the key tool for environmental management as the <b>setting of environmental standards</b> (non-statutory).
2006	<i>Statement of Intent 2006-2011</i> 'In 2005, the Ministry strengthened its focus on improving the environmental performance of the fisheries sector. The Ministry wants to achieve this by <b>setting standards</b> and giving stakeholders incentives to develop innovative ways to meet performance standards.' The workplan going forward included 'Setting standards that define the <b>acceptable level of risk to the health of the aquatic environment</b> from the use of fisheries'
2008	<i>Statement of Intent 2008-2013</i> 'Effective management requires <b>environmental fisheries standards</b> to be set and achieved.' With performance measures including 'A <b>representative range of New Zealand's marine habitats and ecosystems is protected</b> from impacts of fishing by 2020.' <i>Harvest Strategy Standard</i> finalised.
2009	<i>Statement of Intent 2009-2014</i> 'We set standards to ensure the adverse impact of fishing on the environment and the sustainability of fish stocks are kept at an acceptable level of risk.' 'We will develop a <b>standard for incidental seabird capture by the end of 2009. Work is progressing on other environmental standards.</b> We are also implementing a <b>monitoring regime to assess performance against standards</b> , so that changes can be made if new information comes to light or if the standard is not having the expected result.' <i>Fisheries 2030</i> released which stated as goal 'New Zealanders maximising benefits from the use of fisheries within environmental limits', key action ' <b>set and monitor environmental standards including for threatened and protected species and seabed impacts</b> '
2010	Statement of Intent 2010-2015. 'The development of environmental standards is a strategic priority of the Ministry. Specific projects include the development of a <b>Seabird Standard</b> to address the adverse effects of fishing on seabirds, and the development of a <b>Benthic Impact Standard</b> . The Ministry aims to have the seabird standard approved by the Minister with implementation occurring within the next 12 months. The benthic impact standard is expected to be completed and approved for implementation in 2011.'
2011	<i>Statement of Intent 2011-2104</i> . <b>No mention of setting environmental standards or of ecosystem based management.</b> Only outcomes to be measured re addressing environmental impacts of fishing were by-catch of protected species.
2012	<i>Statement of Intent 2012-2015 (post fisheries merger into MPI)</i> <b>No mention of managing the</b>

	<b>environmental impacts of fishing activity</b>
2013	<i>Statement of Intent 2013-2018</i> <b>No mention of managing the environmental impacts of fishing activity</b> (and in fact fisheries management itself is hardly mentioned)
2014	<i>Statement of Intent 2014-2019</i> <b>No mention of managing the environmental impacts of fishing activity</b> (and in fact fisheries management itself is hardly mentioned)
2015	<i>Strategic Intentions 2015-2020</i> <b>No mention of managing the environmental impacts of fishing activity</b> (and in fact fisheries management itself is hardly mentioned)

This historical review indicates that, after 20 years of concerted effort to retrofit environmental management into the QMS, the approach has failed. This failure is confirmed by the findings of the Marine Domain Report, released earlier this year, which identified fishing activity as being a contributor to two of the three top threats to New Zealand's oceans: bycatch of seabirds and marine mammals which are threatened or at risk of extinction; and seabed trawling and dredging for fish and shellfish which is degrading coastal habitats and ecosystems.<sup>5</sup>

This is in the context of increasing investment in relevant science through the Aquatic Environment and Biodiversity Working Group. This science could be used to inform ecosystem-based fisheries management decision-making but (with the exception of bycatch of protected species) has largely not been utilised. This suggests that lack of information is not the main barrier to progress in this area.

For example in respect of the impacts of bottom trawling on the marine environment the 2015 Aquatic Environment and Biodiversity Review reports that the current state of knowledge includes:<sup>6</sup>

- Excellent understanding of the distribution of bottom trawling in offshore waters, good understanding in coastal waters, poor understanding of most shellfish dredge fisheries
- Good understanding of the effects of trawling on some nearshore and deepwater habitats
- General understanding of the effects of trawling on biogeochemical processes
- General understanding of the relative sensitivity of different habitats
- Tools to design candidate spatial management measures have been developed and tested

In terms of ecosystem understanding current knowledge includes:

- Measures and indicators for marine biodiversity measures and ecosystem have been developed
- Predictive modeling techniques have been applied and habitat classification methods improved
- Productivity in benthic communities has been measured
- Seamount connectivity, land-sea connectivity, and endemism have been studied
- Two measures of marine conditions and marine biodiversity have been evaluated as Tier 1 statistics
- Basic monitoring of ecosystem change over time has started

- Land-based effects on fish habitat and coastal biodiversity have been reviewed and documented
- Ocean climate variability and historical change are reasonably well understood
- Broad reviews have been completed of the impacts of climate variability on fisheries (especially recruitment), but the likely impacts of ocean climate change or acidification remain poorly known.

Little of this impressive scientific knowledge base (which in some areas probably exceeds what we know about the fish stocks themselves) appears to have had impact on fisheries management decision-making. EDS considers that the current consultation document fails to grapple with this issue at all adequately and the proposal to ‘invest in ecosystem-based management’ will likely result in business as usual with the same failed outcomes. The proposal is not sufficient to address the systemic failure of the system to deliver on the promise of the Fisheries Management Act 1996 for the environment over the past three decades.

This failure to make significant progress on ecosystems-based management is of concern given that the updated New Zealand Biodiversity Action Plan 2016-2020 sets out a range of ambitious actions under the targets ‘Biodiversity is integrated into New Zealand fisheries management system.’ The actions including ‘5.1 By 2020, New Zealand will have moved towards an ecosystem approach to fisheries management that includes enhanced recording of bycatch from the sea and improved understanding of the rates of change in marine biodiversity’ and ‘5.3 by 2020 demonstrable progress will have been made towards managing the impacts of bottom trawling and dredging on the seabed.’

In EDS’s view, this failure is largely because of the fundamentally flawed approach that has been adopted in the past and which needs to be changed. Instead of trying to retrofit an environmental management system into the QMS, which is primarily a cap and trade tool, something which was never designed for, and is not well-suited to, addressing broader environmental issues, the QMS needs to operate within the framework of an overarching ecosystems-based management system. Marine spatial planning provides a mechanism for developing such a framework on a regional scale.

The fisheries management system has also failed to interface effectively with land-based impacts affecting habitats of importance of fisheries that have likely contributed to the collapse of at least one fishery (Challenger scallops), and the decline of others (such as Paua<sup>7</sup> and Flatfish<sup>1</sup>). Adopting an integrated ecosystem based framing would enable these broader ecosystem impacts affecting fisheries to also be addressed in an effective manner.

***Submission 14: EDS supports the application of an ecosystems-based approach to fisheries management in New Zealand, but this needs to be achieved through the development of an integrated ecosystem-based framework, outside the fisheries management system, which the QMS is then required to operate within.***

#### **Option 4: Use more externally commissioned research**

We have earlier described the parlous state of scientific knowledge that is available to guide fisheries management decision-making. There is a considerable deficit that needs to be addressed. The government operates the fisheries management system, in the public interest, and it therefore needs to ensure that adequate research is undertaken to underpin the operation of the system. In EDS's view, the commissioning of such research is a critical public function that should not be delegated to vested interests.

To the extent that other parties wish to commission their own research, and that research is proven to be of high standard and independently peer reviewed, then it could be considered by the management agency alongside government commissioned research. However research commissioned by external parties, particularly by those with a vested interest in fisheries, should not be permitted to replace government commissioned research. This is essential if the fisheries management system is to retain credibility.

***Submission 15: EDS supports the use of externally commissioned research, so long as it is of high quality and independently peer reviewed, and is used as a supplement to, and not a replacement of, the information necessary to underpin high quality fisheries decision-making that should be commissioned by the government.***

#### **STRATEGIC PROPOSAL 4: AGILE AND RESPONSIVE DECISION-MAKING**

##### **Address chronic lack of investment in fisheries management**

There has been chronic under-investment in fisheries management for many years. For example, the figures for cost recovered fisheries services provided by MPI, which fund MPI's effort to manage the commercial fishing sector, has decreased markedly in real terms since 2003. In 2003 the then Ministry of Fisheries cost-recovered a total of \$33,976 from the commercial fishing sector and this had been reduced to \$27,140 by 2016. With inflation taken into account, this represents around **a 40% decline in funding over 13 years**. The conservation services levy component of this amount, which is used to manage the impact of commercial fishing activity on protected species, has experienced a **50% decline** in real terms over the same time period.

When compared with investment by other countries in their fisheries management systems, the investment in New Zealand appears meager. In 2007, it was reported that the cost of fisheries management in New Zealand relative to landed catch value was 4% compared to an OECD average of 17%.<sup>7</sup> There has been considerable decline in funding since then.

This lack of management resource has meant that the ability of fisheries management to respond when required is limited. As a result, management actions are frequently taken long after the event (ie when a stock has become seriously depleted), if at all, rather than managers being proactive to avoid depletion occurring in the first place. For many stocks there has not been any management response for over 30 years, with the quota remaining unchanged since entry into the QMS, despite initial TACCs being based on very little information other than catch histories (which themselves were unreliable at the time due to

poor reporting). For example, of the 348 stocks currently 'managed' under the QMS, the TACs for 57% of them (268 stocks) have never been altered and only for 11% (38 stocks) have there been more than two changes.<sup>8</sup>

In general, a management response is not made until there is compelling evidence of depletion (and often not even then if the stock is not a priority species economically), by which stage much has been lost and much greater cuts in harvest are required than if a small adjustment had been made in a timely fashion, in order to rebuild the stock. This lax management approach has significant implications for commercial fishers and quota owners (in terms of loss of incomes from harvest), recreational and customary fishers (through depleted fish stocks and an inability to harvest them) and the environment (through flow-on ecosystem effects from depleted stocks). It also puts much greater pressure on the stocks themselves, which may not recover as expected when fished down to low levels, particularly where there are also environmental changes occurring which enhance the stresses on the stock. Such environmental changes are becoming much more commonplace, particularly in inshore areas which makes effective and timely management even more important.

This under-investment in fisheries management resource needs to be addressed if the system is to operate effectively and efficiently in the public interest.

***Submission 16: Substantially increase the investment levels in fisheries management capability, to (at least initially) reverse the 40% decline in resource to manage commercial fishing experienced since 2003.***

**Option 1: Shift decisions to a level of accountability reflecting the risk of achieving fisheries objectives**

Any delegation of decision-making requires a clear and robust framework within which that decision-making can be exercised and opportunities for review where the decision is wrongly taken. Currently that framework does not exist, despite considerable efforts over decades to put it in place (including the failed development of various fisheries plans, stock strategies, environmental standards and the like). For most fish stocks there is no management target for stock size and no explicit limits on environmental impacts. EDS considers that a more effective policy framework needs to be put in place, with the input from all sectors, before any delegation of decision-making could properly occur. It is not clear, for example, how environmental impacts and ecosystem matters would be effectively addressed in delegated decision-making for deepwater stocks, in the absence of such formulated limits or broader ecosystem framework as suggested above.

***Submission 17: Any delegation of decision-making should not occur prior to the development of a clear and robust framework within which that decision-making can be exercised and opportunities for review where decisions are wrongly taken.***

Decision-making also needs to include good processes which enable the various interest groups to meaningfully engage and contribute. This is important if the system is to gain public credibility and support. At the heart of fisheries decision-making is the stock

assessment process. The results of the stock assessment directly drive management decisions. This is a highly technical, scientific and resource intensive process. Only those with a high degree of technical knowledge, with the resources to engage scientific advice, and the ability to self-fund attendance at numerous working group meetings, can have meaningful input. The only sector with such resources is the commercial fishing sector, with the recreational fishing, customary fishing and environmental groups effectively excluded. This means that stock assessment processes primarily consists of a two party dialogue between the commercial fishing sector and MPI.

The Ministry has from time to time established broader stakeholder groups to provide advice on the management of specific shared fisheries which are dominated by recreational take (such as blue cod and snapper). The recreational fishing sector has generally been included but not necessarily the environmental sector. In the case of the Snapper 1 Working Group, the environmental sector was specifically excluded, despite requests for inclusion. Notably, the environmental sector does not rate a mention in any of the consultation documents despite being specifically identified as an interested party in the Fisheries Act 1996.

This is not a healthy situation, results in politicisation of decisions, litigation and loss of public confidence in the system. The Ministry needs to re-design decision-making processes so that all sectors can meaningfully engage, and to specifically recognise the environmental sector as a legitimate stakeholder.

***Submission 18: Improved fisheries decision-making processes need to be to enable effective engagement of all sectors including commercial, customary, recreational and environment.***

**Option 2: Support independent advice through a National Fisheries Advisory Council**  
EDS supports the establishment of a National Fisheries Advisory Council so long as a wide range of interests in fisheries are represented, including environmental interests (which we note is a requirement in the legislation), and that it is not dominated by one sector. This could provide a useful vehicle for the infiltration of independent advice to the Minister and Ministry that reflects a wide range of views and values. There would need to be a commitment by the Ministry to actively consider, and to the extent possible adopt, the recommendations of the Council. Otherwise it would become a 'toothless tiger' and a waste of everyone's resources.

***Submission 19: EDS supports the establishment of a National Fisheries Advisory Council, so long as the membership is wide ranging and reflective of the broad range of interests in fisheries, and there is a formal commitment by the Ministry to give effect to the Council's recommendations.***

**Option 3: Develop a more flexible decision-making framework**

EDS agrees that the decision-making process needs to be more responsive and flexible, but that it is difficult to achieve this in the absence of clear management objectives, robust plans

and environmental standards or similar. Good processes which engage all stakeholders in a meaningful way, also need to be embedded in the system. It is also unlikely that management can be more responsive without addressing the critical issues of lack of science and management resources outlined above. EDS suggests that effort should be placed on fixing the underpinnings of the system as a priority before implementing any of the suggestions proposed in these option.

***Submission 20: That priority be placed on fixing the key underpinnings of the fisheries management system including the serious deficits in science resourcing, management capability, ecosystem framing and good process.***

## **CONCLUSION**

EDS welcomes the opportunity to participate in the MPI Fisheries Review and requests that MPI involves us in the ongoing review process as a key stakeholder grouping.

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<sup>1</sup> Heron M, 2016, *Independent review of the MPI/MFish prosecution decisions Operations Achilles, Hippocamp and Overdue*, Wellington

<sup>2</sup> Mace P M, K J Sullivan and M Cryer, 2014, 'The evolution of New Zealand fisheries science and management systems under ITQs', *ICES Journal of Marine Science*, 71(2), 204-215

<sup>3</sup> Maunder M N et al, 2006, 'Interpreting catch per unit effort data to assess the status of individual stocks and communities', *ICES Journal of Marine Science*, 63, 1373-1385

<sup>4</sup> Wheeler B et al, 1991, *Fisheries Legislation Review: Public Discussion Paper*, Fisheries Task Force, Wellington

<sup>5</sup> Ministry for the Environment and Statistics New Zealand, 2016, *New Zealand's Environmental Reporting Series: Our marine environment 2016*, Wellington

<sup>6</sup> Ministry for Primary Industries, 2016, *Aquatic Environment and Biodiversity Annual Review 2015*, Compiled by the Fisheries Management Science Team, Ministry for Primary Industries, Wellington

<sup>7</sup> Harte M, 2007, 'Funding commercial fisheries management: Lessons from New Zealand', *Marine Policy*, 31, 379-389

<sup>8</sup> Mace P M, K J Sullivan and M Cryer, 2014, 'The evolution of New Zealand fisheries science and management systems under ITQs', *ICES Journal of Marine Science*, 71(2), 204-215