



# Proposed Separation of South Island Eel Stocks

## Decision Document

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# 1 Executive Summary

Due to their unique life history, eels are vulnerable to harvesting and other anthropogenic impacts, as well as environmental factors. The longfin eel is more vulnerable than the shortfin eel due to its biological characteristics. In the South Island, however, these differences are poorly reflected in catch limits and other sustainability settings because longfin and shortfin eels are managed as combined stocks within the quota management system (in the North and Chatham Islands the two species are managed separately).

Following a report in 2013 by the Parliamentary Commissioner for the Environment on longfin eels, you decided to review whether the separation of South Island longfin and shortfin stocks (rather than the current combined approach) would support improved management of each species. As part of this review MPI undertook pre-consultation with tangata whenua and industry groups in 2015, followed by public consultation in January and February 2016. South Island tangata whenua and seven public submissions supported separate management of South Island eel stocks, while 8 submissions, all from the fishing industry, supported the status quo.

Having considered the views and information put forward during consultation, MPI's preference is to manage the species separately as this will allow:

- the different biological characteristics, economic, social, and cultural values associated with each species to be reflected in sustainability settings,
- a more precautionary approach to be taken for the more vulnerable longfin eel to help increase its abundance, without impacting on utilisation of the less vulnerable shortfin eel, and
- a more effective, targeted response to the current sustainability risks associated with some South Island eel stocks.

Section 25 of the Fisheries Act 1996 allows for the two species to be managed separately by altering the current quota management areas for South Island eels (see Figure 1). There are a number of requirements that need be met before such an alteration can take place. These are set out in detail in this document.



**Figure 1: The six South Island Quota Management Areas (QMAs) for freshwater eels (shortfin and longfin).**

In particular you must be satisfied, having considered alternative options, that the alteration is necessary to ensure sustainability. MPI considers this criteria is met as the following sustainability risks are evident for South Island eels:

- The biological characteristics of the longfin species make them more vulnerable to overexploitation, but catch of the species cannot effectively be controlled within a combined species catch limit.
- There is insufficient information and uncertainty to determine stock status for three of the six South Island eel stocks.
- The shortfin eel population within one of these stocks is at the 'soft limit' – the limit at which a rebuilding plan is required, and longfin eels in another stock are expected to decline under recent levels of catch.
- Catches are well below the total allowable commercial catch limit for most stocks. If catches were to increase to the limit then it is likely that overfishing would occur, and very likely, if all the catch was taken as longfin eels, that their abundance would decline.

Under the current combined approach, management changes to address these risks will be unable to be targeted to the vulnerable species. For example, a review of catch limits and other sustainability measures for South Island eels is scheduled for later this year. Under the current combined approach, the total allowable catch limits will need to be set at the relatively low level that is appropriate for the most vulnerable species, resulting in a potentially significant utilisation cost.

The eel industry has submitted voluntary and other measures as a further alternative to altering the quota management areas. MPI considers some of these measures have merit, however, it is not clear how the voluntary arrangements would be implemented. To receive and consider a confirmed industry plan setting out the necessary detail, governance and other arrangements would mean there is insufficient time to alter eel quota management areas in 2016, should you ultimately decide to do so. Instead any alteration would need to be deferred until 2017, which would run contrary to your previous public communications on this review.

Strong and self-enforcing industry governance is necessary to ensure voluntary measures can be effectively implemented. In its absence, MPI supports a strong regulatory environment when there are sustainability concerns.

## 2 Purpose

This decision document outlines MPI's recommendations on whether the current combined management approach, for South Island eels, ensures the sustainability of longfin and shortfin eels, or whether the species should be managed separately. It provides you with a summary of the submissions received regarding the proposals and asks you to make a decision on whether South Island eel stocks should be managed separately as longfin and shortfin (*preferred*) or remain combined (*status quo*).

### 2.1 RATIONALE FOR MANAGEMENT INTERVENTION

Due to their unique life history, eels are vulnerable to harvesting and other impacts. The longfin eel is more vulnerable than the shortfin eel due to its biological characteristics. In the South Island, however, these differences are not currently reflected in catch limits and other sustainability settings because longfin and shortfin eels are managed as combined stocks within the quota management system (in the North and Chatham Islands the two species are managed separately).

In 2013, the Parliamentary Commissioner for the Environment released a report outlining the status of longfin eel populations in New Zealand.<sup>1</sup> In this report, the Commissioner recommended that you:

- suspend the commercial catch of longfin eels until longfin eel stocks are shown to have recovered, and
- direct your officials to establish a fully-independent expert peer review panel to assess the full range of information available on the status of the longfin eel population.

Subsequently, an independent scientific review of the information available on the status of eels was carried out by a panel of international experts in November 2013.<sup>2</sup> The independent panel concluded that there was a trend of decline from the early 1990s to the late 2000s, with relatively stable, and in some areas increasing abundance in recent years. Based on the panel's report, and after consideration of the relevant scientific evidence, you decided that the information available was not sufficient to support a complete closure of the longfin eel fishery.

As an alternative, you decided to progress a package of management measures aimed at ensuring an increase in the number of longfin eels and their long-term sustainability. These management measures include:

1. A review to consider the separation of South Island longfin and shortfin stocks to support improved management of each species.
2. A review of catch limits for both North and South Island longfin eels to ensure that they will support/promote an increase in longfin eel abundance.
3. The introduction of abundance target levels to support assessment of the status of the longfin eel population and rate of rebuild.<sup>3</sup>
4. Improved information from the commercial longfin eel fishery to better inform stock assessment.<sup>4</sup>

This decision document relates to Part 1 of this package (review to consider separation of longfin and shortfin stocks). Note that, in relation to Part 2 of this package (review of catch limits), additional consultation will be undertaken on total allowable catches (TACs), total allowable commercial catches (TACCs) and allowances for South island eel stocks as part of the 2016 sustainability round for stocks with a 1 October fishing year.

## 2.2 BACKGROUND

### 2.2.1 Biological Characteristics

While both longfin and shortfin eel species are native to New Zealand, only the longfin eel is endemic (only found in New Zealand). Both species are found throughout New Zealand, but

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<sup>1</sup> On a pathway to extinction? An investigation into the status and management of the longfin eel, April 2013

<sup>2</sup> [www.mpi.govt.nz/Portals/0/Documents/fish/Eel-Review-Report-25-11-2013.pdf](http://www.mpi.govt.nz/Portals/0/Documents/fish/Eel-Review-Report-25-11-2013.pdf)

<sup>3</sup> Part 3 of the package for South Island eel stocks has already been completed. MPI completed a new stock assessment for South Island eel stocks in 2015. North Island eel stocks are scheduled for review in 2016. From the 2015 stock assessment, an abundance target (ANG 13 only) and sustainability limits have been set for those South Island eel stocks where there is sufficient data to do so. These targets are used to guide the options described in this paper as longfin and shortfin eel abundance is able to be compared with these levels.

<sup>4</sup> In relation to Part 4 of the package, MPI has reviewed using a more comprehensive and integrated information base to inform the stock assessment process for longfin eels. This included improved commercial catch reporting and additional data provided by universities, the Department of Conservation and local councils to assist in monitoring eel abundance. Not all of this information was able to be utilised as part of the current stock assessment, but it still being collected and may be used in the future. MPI is also undertaking research looking at the percentage of available habitat that is commercially fished. The preliminary results of this work have been considered in the development of the options presented in this paper. Abundance indices have already been updated using the latest information for South Island longfin eel stocks, and will be updated in 2016 for North Island longfin eel stocks.

they have different habitat preferences, growth rates, and maturity, which make them vulnerable to harvesting pressure in different ways. These characteristics are discussed in further detail in Appendix 1.

Due to their unique life history, both species of eels are classified as being vulnerable to harvesting and other impacts. The longfin eel is likely to be more vulnerable to harvest pressures than the shortfin eel because they are slower growing, mature much later, live longer and do not migrate for spawning until later in life. Shortfin eels are considered as ‘not threatened’ on the Department of Conservation’s Threat Classification System, whereas longfin eels are classed ‘at risk/declining’.

### 2.2.2 Stock Information

For longfin and shortfin eel populations within ANG 11 (Nelson/Marlborough – refer Figure 1), 12 (North Canterbury) and 14 (South Canterbury), there is insufficient data to determine stock trends or status against limits and targets. For longfin and shortfin eel populations within ANG 15 (Otago/Southland) and 16 (West Coast), and shortfin eels in ANG 13 (Te Waihora/Lake Ellesmere)<sup>5</sup>, there is sufficient data to determine stock status through the standardised catch per unit effort (CPUE) time series.

Most eel stocks are considered unlikely to decline under recent levels of catch. The exception is the longfin eel population in Southland (part of ANG 15), which is considered likely to decline under recent levels of catch. Shortfin eels in Southland (part of ANG 15) are likely to increase in the medium term under current catch levels.

If catch were to increase to the level of the TAC, then it is likely that overfishing would occur for most stocks. In particular, because the TAC has been set for longfin and shortfin combined, there is a risk that a disproportionate amount of the TAC may come from one species or the other for several consecutive years.

In terms of limits, most stocks are unlikely or very unlikely to be below the soft limit - the limit under MPI’s Harvest Strategy Standard at which consideration of a rebuilding plan is required. An exception is shortfin in Otago (part of ANG 15); this sub-stock is about as likely as not to be below the soft limit. In addition, for ANG 11, 12 and 14 the status relative to the soft or hard limit is unknown.

In terms of targets, an explicit target has been set for ANG 13 and this stock is very likely to be above this target level. For all other stocks no target level has been agreed by MPI’s Eel Working Group.

Trends in relative abundance used to determine stock status for each quota management areas (QMA) are derived from the catch and effort data generated by the commercial fishery, and therefore apply only to the area within that QMA that is fished commercially. Approximately two thirds of the longfin habitat on the South Island is not fished commercially, although this number will vary by QMA. For those QMAs where only a relatively small proportion of the area is fished, the status of longfin eels is likely to be more optimistic than estimated from commercial CPUE.

For shortfin eels, the proportion of the habitat fished is considerably higher, but has not yet been estimated either on an aggregate basis or by separate QMAs. Therefore, there is no

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<sup>5</sup> There is no longfin fishery in ANG 13 – it is a shortfin fishery only.

reason to believe that the status of the shortfin eel QMA stocks (based on commercial CPUE information) is overly pessimistic or optimistic.

## 3 Legal Considerations

### 3.1 SECTION 8 – PURPOSE OF THE ACT

The purpose of the Fisheries Act 1996 (the Act) is to provide for the utilisation of fisheries resources while ensuring sustainability. The options proposed are consistent with this purpose. MPI considers that Option 1 – separation of South Island eel stocks, best achieves the purpose of the Act.

### 3.2 SECTION 9 – ENVIRONMENTAL PRINCIPLES

Section 9 of the Act requires that you take the following environmental principles into account when exercising or performing functions, duties, or powers in relation to the utilisation of fisheries resources or ensuring sustainability:

- a) associated or dependent species should be maintained above a level that ensures their long-term viability;
- b) biological diversity of the aquatic environment should be maintained; and
- c) habitat of particular of significance for fisheries management should be protected.

MPI considers that all options presented in this paper satisfy your obligations under section 9 of the Act. There is no information to suggest that the abundance of associated or dependent species, biodiversity or habitat of particular significance would be modified under either option.

### 3.3 SECTION 10 – INFORMATION PRINCIPLES

Section 10 of the Act requires that you take the following information principles into account:

- a) decisions should be based on the best available information;
- b) decision makers should take into account any uncertainty in the available information;
- c) decision makers should be cautious when information is uncertain, unreliable, or inadequate; and
- 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 the Act.

MPI considers that the best available information has been used as the basis for the recommendations.

### 3.4 SECTIONS 25, 25A & 25B– ALTERATION OF QUOTA MANAGEMENT AREAS

Sections 25, 25A and 25B of the Act, provide for the alteration of QMAs (including dividing a multi-species stock to allow separate management) and set out certain roles and responsibilities to be undertaken before an alteration can take place.

Section 25 of the Act enables you to recommend to the Governor General, by Order in Council, that a QMA be altered by dividing a multi-species stock (e.g. ANG) into 2 or more stocks (e.g. LFE and SFE). You may make such a recommendation if—

- a) you comply with section 25A and quota owners who hold in the aggregate not fewer than 75 000 000 (75%) quota shares for any stock that would be affected by the proposed alteration have requested you to make such a recommendation; or

- b) you comply with section 25B, in which case a request specified in paragraph (a) is not required.

Since no request to separate South Island eel stocks has come from quota owners, it is being considered under section 25B of the Act.

Under section 25(3), before recommending the alteration of any QMA, you must:

- a) have regard to
  - i. non-commercial fishing interests in the affected area,
  - ii. the biological characteristics of each stock that would be affected by the recommendation and
  - iii. any other such matters that you considers important.
- b) consult the persons and organisations considered by you to be representative of those classes of persons having an interest in the relevant quota management area, including Maori, recreational, commercial and environmental interests; and
- c) provide for the input and participation of tangata whenua who have
  - i. a non-commercial interest in the stock concerned, or
  - ii. an interest in the effects of fishing on the aquatic environment in the area concerned; and
- d) for the purpose of paragraph (c), have particular regard to kaitiakitanga.

Section 25B of the Act sets out the matters that must be addressed in the absence of a request from quota owners for a QMA alteration. You may recommend the alteration if you have:

- a) approved a plan that provides for all of the following matters:
  - i. the boundaries of the proposed quota management area or quota management areas;
  - ii. the species that comprise the stock or stocks after the proposed alteration; and
  - iii. the manner in which quota shares are to be apportioned after the alteration;
- b) are satisfied, having considered alternative options, that the alteration as specified in the plan is necessary to ensure sustainability; and
- c) have publicly notified your intention to recommend the alteration of the QMA or areas; and
- d) have also notified your intention to recommend the alteration of the QMA or areas to:
  - i. persons who are noted on the Quota Register as having an interest in the quota to which the proposed alteration relates; and
  - ii. parties to leases or transfers registered on the Transitional Register in respect of quota to which the proposed alteration relates.

These matters are discussed in detail below as part of the analysis of each of the management options.

## 4 Consultation

Before making a recommendation for the alteration of any QMA under section 25 of the Act, you must consult the persons and organisation considered to be representative of those classes of persons having an interest in the relevant quota management area(s), including Maori, recreational, commercial, and environmental interest. You must also provide for the input and participation of tangata whenua who have:

- A non-commercial interest in the stock or stocks concerned; or
- An interest in the effects of fishing on the aquatic environment in the area or areas concerned; and
- For this purpose have particular regard for kaitiakitanga.



## 4.1 PRE-CONSULTATION

MPI undertook a period of pre-consultation in the latter half of 2015, prior to statutory consultation. This identified that the South Island Eel Industry Association was not, at that time, entirely opposed to separate management of each species, however, the association stressed it is a difficult process and caution should be exercised during implementation. Therefore, in the absence of a request from quota holders to manage the species separately, this proposal to alter QMAs is being considered under section 25B of the Act (refer section 3 of this paper).

MPI has also provided for the input and participation of tangata whenua through Te Waka a Māui me ona Toka and Ngāi Tahu Mahinga Kai Hī Ika Kōmiti. Tangata whenua through these forums have stated they support separate management of longfin and shortfin eels.

MPI considered this feedback during the development of the options for further wider consultation.

## 4.2 STATUTORY CONSULTATION

MPI released a consultation document on 14 January 2016 for four weeks of public consultation. The document was published on MPI external websites, and quota holders, and other persons and organisations with an interest in and/or affected by the proposals were notified of the consultation and directed to the consultation web page.

During consultation, submitters were encouraged to provide feedback on the options proposed and any other additional information that could be helpful to inform the review.

## 4.3 SUBMISSIONS RECEIVED

16 submissions were received from the following parties:

- 1) Shane Anderson – Quota holder
- 2) Ross Campbell – Quota holder
- 3) Shane Metcalf – Quota holder
- 4) Mossburn Enterprises Ltd – Eel processor
- 5) Lake Ellesmere Fisherman's Association – Eel fisherman association
- 6) New Zealand Eel Company – Eel processor
- 7) South Island Eel Enhancement Company (SIEIA) – Eel industry association
- 8) Eel Enhancement Company – Eel processor
- 9) Parliamentary Commissioner for the Environment (PCE)
- 10) Working Waters Trust – Environmental organisation
- 11) Environment Canterbury – Regional Government
- 12) Forest and Bird – Environmental organisation
- 13) Ciaran Campbell - Individual
- 14) Rosemary Clucas - Individual
- 15) Stella McQueen – Fresh water ecologist
- 16) Meridian Energy – Dam operator.

## 4.4 SUMMARY OF SUBMISSIONS

Full copies of submissions received during statutory consultation are in Appendix 2. Seven submissions (submissions 9 to 15 above) supported separate management of longfin and shortfin eels, one submission was neutral (submission 16), and 8 submissions (submissions 1 to 8) supported the status quo (combined management). Submissions are briefly summarised below and further discussed in the options' analyses sections of this document.

#### 4.4.1 Submissions supporting separate management of shortfin and longfin eels

The submissions supporting separate management did so for the following reasons:

1. Longfin and shortfin eels have physical, geographical and biological differences that warrant them being managed as separate species;
2. Eels are affected by numerous other factors; e.g. habitat destruction, decreasing water quality issues and predation from introduced fish species (e.g. salmon and trout); which further highlight the need for individual species-specific management.

The New Zealand Forest and Bird Society also registered its concern that MPI did not follow the PCE's recommendation to ban the commercial harvest of longfin eels and recommended that all commercial fishing of longfin eels should be banned while the species are listed on the Department of Conservations 'Threatened Species List' as 'at risk-declining'.

MPI's response to these submissions is set out in Section 5: Analysis of Management Options.

#### 4.4.2 Submissions supporting status quo (combined management)

Eight submissions (all from the eel fishing industry) supported retaining the status quo – combined management of South Island eel stocks. Of the eight submissions three also directly supported the SIEIA submission. Submissions highlighted the following reasons for supporting continuing to manage longfin and shortfin eel as combined stocks (status quo):

1. The proposal for separate management fails to meet the requirements of section 25B of the Fisheries Act 1996, in that:
  - The 'separation plan' as outlined in the discussion document was deficient; and
  - It is not required to ensure sustainability of the fish stocks because eel stocks are either stable or increasing in all QMAs where there is enough data to undertake a catch per unit effort (CPUE) analysis, and large proportion of eel habitat is unfishable.
2. Separate management will create the following operational issues:
  - It will reduce catch efficiency by removing the flexibility for commercial fishers to make best use of environmental conditions to target shortfin. Prior to targeting shortfin they will need to ensure they have enough Annual Catch Entitlement (ACE) to land it.
  - Separation of eel species and the associated TAC cuts will cause financial hardship to commercial operators.
  - Some fishers have historically only caught one species, however, if the stocks are separated all fishers will get quota for both species.
3. Other reasons:
  - Separate management would negatively affect catch CPUE measurements that are used to track stock status, making it difficult to compare CPUE data pre-separation versus post separation.
  - Lake Ellesmere (ANG 13) fishers have a voluntary agreement not to take longfin eels and have requested allocation of 100% shortfin quota if separation occurs.
  - Manipulation of TACs and QMAs is unlikely to affect eel populations.
  - There is general disagreement with the limits produced in the stock assessment.

MPI's response to these submissions is set out in in Section 5: Analysis of Management Options.

Alternative approaches to separate management were also put forward by SIEIA. These alternatives and MPI's response are summarised in section 5.3: Other Options Considered.

## 5 Analysis of Management Options

### 5.1 OPTION 1 – MANAGE SHORTFIN AND LONGFIN IN THE SOUTH ISLAND SEPARATELY

Option 1 proposes that longfin and shortfin eels be managed separately by altering the current combined (ANG) QMAs in the South Island to become separate longfin (LFE) and shortfin (SFE) QMAs.

Seven of the 16 submissions received support Option 1. These submissions highlighted the physical, biological and geographical differences of the two species as the main reasons for separation. They note fisheries are usually managed as separate species. One submitter likened the combined management of longfin and shortfin eels to managing cows and sheep as a single stock.

MPI agrees with these submitters that fisheries are generally managed as separate species, with relatively few stocks managed as multi-species stocks. The exceptions are usually highly productive species such as flatfish, rather than potentially vulnerable species such as eels.

MPI considers the following sustainability risks are evident for South Island eels:

- The biological characteristics of longfin eels make them more vulnerable to overexploitation, but catch of the species cannot effectively be controlled within a combined species catch limit without impacting on utilisation.
- There is a lack of information and associated uncertainty to determine stock status for three of the six South Island eel stocks.
- The shortfin eel population within one of these stocks is at the 'soft limit' – the limit at which a rebuilding plan is recommended under the MPI Harvest Strategy Standard policy, and longfin eels in another stock are expected to decline under recent levels of catch.
- Catches are well below the total allowable commercial catch limit for most stocks. If catches were to increase to the limit then it is likely that overfishing would occur, and very likely, if all the catch was taken as longfin eels, that their abundance would decline.

MPI agrees with some submitters that separate management of longfin and shortfin eels is a better framework to ensure the sustainability of longfin and shortfin eels. Specifically it would allow:

- sustainability measures such as TACs, TACCs, allowances and deemed values to be set in a way that takes into account the different biological characteristics, economic, social, and cultural values associated with each species,
- a more precautionary approach to be taken for the more vulnerable longfin eel to help increase its abundance, without impacting on utilisation of the less vulnerable shortfin eel, and
- a more effective, targeted response to current sustainability risks associated with some South Island eel stocks and ability to respond to any future sustainability risks.

## 5.2 OPTION 2 – CONTINUE TO MANAGE SOUTH ISLAND EELS AS COMBINED STOCKS (STATUS QUO)

Under this option longfin and shortfin eel eels in the South Island would continue to be managed together in combined stocks. No changes would be made to the current combined (ANG) QMA.s.

This option is supported by eight submissions from the fishing industry. These submissions consider separate management is not required to ensure sustainability of the longfin and shortfin eel stocks because:

- longfin stocks are stable or increasing under the current management regime,
- the Parliamentary Commissioner for the Environment's assessment of the status of longfin eels is incorrect, and therefore the rationale to separate the stocks doesn't exist,
- commercial fishing doesn't significantly threaten longfin populations, but other non-fishing related threats do (e.g. habitat connectivity, flooding and recruitment),
- eels have natural protection already as a substantial portion of eel habitat is unfishable (because it is within conservation land, a reserve, or is generally accessible to commercial fishers), and this factor needs to be included in the stock assessment, and
- it is unlikely the entire TAC for the current ANG stocks would be taken as longfin.

MPI's response to these submissions is set out below.

The independent panel commissioned to review of the information available on the status of eels concluded that there was a trend of decline from the early 1990s to the late 2000s, with relatively stable, and in some areas increasing abundance in recent years. Since the panel produced its report MPI has completed a new stock assessment and has also undertaken consultation on management of eels. Based on this information MPI considers there are current and potential sustainability risks that are evident for South Island eels that need to be addressed as outlined in Option 1.

MPI's review of whether South Island eels should be managed as separate species is not based on the Parliamentary Commissioner for the Environment's Report. It is based on the independent panel's report, the recently completed stock assessment of South Island eels, and consultation it has undertaken on management of eels, which suggests that there are biological reasons to manage the species separately and some immediate and longer term sustainability risks that need to be managed.

The abundance of eels is affected by numerous factors, in addition to fishing. Where data is available these factors are taken into account in assessing stock information for South Island eels and is included in this review. While the primary focus of fisheries legislation is to manage fishing, where appropriate MPI works collaboratively with industry, other government agencies and research groups to improve scientific knowledge, enhance eel habitat and eel recruitment and reduce non-fishing related mortality. Nonetheless, fishing has a significant impact on eel populations and you are obliged to ensure fishing activities are sustainable under the Act.

For those QMA.s where only a relatively small proportion of the area is commercially fished, the status of longfin eels is likely to be more optimistic than estimated from commercial CPUE. MPI has commissioned research outlining the percentage of longfin eel habitat that is fished and unfished. This information is taken into account in MPI's assessment and will feed into future management decisions. It is particularly relevant, for example, to the review of TACs for South Island eels that will occur later this year. For shortfin eels, the proportion of

the habitat fished is considerably higher, but has not yet been estimated either on an aggregate basis or by separate QMAs. Nonetheless, this doesn't address the sustainability concerns that have been identified.

From a utilisation perspective, commercial eel fishers currently benefit from having both species managed together. This allows flexibility for fishers to switch between species, either:

- increasing the catch of the highest value species, as market demand changes; and/or
- targeting the species with the highest availability given prevailing environmental conditions.

MPI does not have data to quantify the benefits of this flexibility to fishers. Reduced flexibility (under Option 1) would be mitigated by the tradability of annual catch entitlement (ACE) and the deemed value framework. As for other quota species, including longfin and shortfin eels in the North and Chatham Islands, these mechanisms can be used throughout the year to match local/ seasonal catch. There will, however, be additional transaction costs associated with more frequent trading of quota and ACE, compared to the current combined management approach.

In addition, some fishers have historically caught more of one species than the other. If the species are managed separately this issue will be resolved in the following ways:

- By the TAC review process that will occur later this year once a decision has been made on separation of the stocks. For example, initial TAC proposals may take into account historical total catches for each species in each QMA, in which case for areas where historically either more shortfin or more longfin has been caught the TAC for each species would reflect this;
- Both quota and ACE are tradeable and fishers can buy or sell entitlement to meet their requirements. Once TACs have been set, fishers can trade quota and ACE on a willing seller-willing buyer basis.

Overall, MPI considers continuing to manage the South Island eel species together does not provide the best means of ensuring the sustainability of longfin and shortfin eels. Under the current combined approach, management changes to address sustainability concerns will be unable to be targeted to the vulnerable species resulting in a potentially significant utilisation cost.

### 5.3 OTHER OPTIONS CONSIDERED

SIEIA put forward five alternatives to stock separation as part of their submission (Appendix 2). These alternatives and MPI's response are outlined below. MPI considers some of the proposed measures, such as amending regulations to decrease the maximum size of takeable eels from 4 kg to 2 kg, have merit. However others, such as proposed voluntary catch splitting and ACE shelving arrangements, require more detail and confirmation from industry on how they would be implemented.

If properly specified and implemented, such measures could theoretically address sustainability risks associated with combined management of the two species, if supported by appropriately set TACs and monitoring. However, strong and self-enforcing industry governance is necessary to ensure voluntary measures can be effectively implemented, and MPI supports a strong regulatory environment when there are sustainability concerns.

To receive and assess a confirmed industry plan setting out the necessary detail, governance and other arrangements would mean there is insufficient time to alter eel quota management

areas in 2016, should you ultimately decide to do so. Instead any alterations, should you consider but then reject a more detailed industry plan, would come into effect in 2017. In the interim, sustainability risks associated with combined species catch limits would need be taken into account during the review of total allowable catches for South Island eels, which is scheduled for later this year.

*1) Reduce the maximum size of longfin from 4 kg to 2 kg;*

This measure would see the commercial maximum size limit for longfin eels reduced from the current 4 kg to 2 kg. The maximum size limit is currently specified in regulation; therefore this measure could be implemented voluntarily or by way of regulation change (the industry submission does not specify).

MPI considers this measure would improve longfin eel abundance and increase longfin eel spawner escapement from fished areas. Currently the proportion of catch between 2 and 4 kg is relatively small as eels smaller than 2 kg are preferred in most markets. However, market preferences may change and this measure would help safeguard large eels from future changes in the market.

*2) Voluntary shelving of Annual Catch entitlement;*

Currently this proposal is not well-specified in eel industry submissions. Voluntary shelving arrangements could be used to ensure catch levels are constrained so that a disproportionate amount of either species is not taken, or to maintain the level of catch below the TACC.

Voluntary arrangements can be difficult to administer and monitor. They rely on strong industry governance to ensure fishers adhere to them. The eel industry has not provided detail on how these issues would be addressed or how the voluntary arrangements would be implemented. In the absence of strong and self-enforcing governance arrangements MPI supports a strong regulatory environment when there are sustainability concerns, and you cannot rely on voluntary shelving to ensure sustainability.

*3) Removal of the 4 tonne minimum holding requirement and carryover entitlements;*

This provision is regulated and means that a fisher cannot fish for eels unless he or she holds a minimum 4 tonnes of ACE for the relevant stock. Carryover entitlements are available for some fisheries and allow a certain amount of uncaught ACE to be carried over to the following fishing year. This provision does not currently apply to eels.

MPI considers removing the 4 tonne minimum holding requirement, under the current combined management framework, and providing for carry over of unused ACE will not improve the sustainability or management of South Island eels. It is likely to increase the number of eel fishers, and may increase the overall catch of eels and make any voluntary agreements more difficult to enforce. However, should the stocks be managed separately, then MPI will approach industry to discuss whether the minimum holding requirement should be reviewed - given that smaller ACE holdings may be available under separate management as the available ANG ACE would be divided between SFE and LFE ACE.

*4) Trap and transfer programs, allowing young eels to move upstream and large migrating eels to move down stream past dams;*

It is not clear, from the industry submissions what new actions or initiatives the eel industry would implement as a result of this proposal.

MPI recognises the eel industry have been working with dam operators to undertake trap and transfer programs, aiding the migration of eels up and down stream. MPI agrees this has a positive impact on eel populations and looks forward to working with both dam operators and eel industry representatives in the future to maximise this opportunity.

*5) Additional voluntary measures; catching a minimum of 20% of SFE, voluntary restrictions on LFE catch;*

Currently this proposal is not well-specified in eel industry submissions. Voluntary restrictions could be used to ensure catch levels are constrained so that a disproportionate amount of either species is not taken.

While this approach could help address sustainability risks, voluntary arrangements are difficult to administer and monitor and rely on strong industry governance. The eel industry has not provided sufficient detail in its submissions to show how the arrangements would be implemented.

In the absence of strong and self-enforcing industry governance arrangements, MPI supports a strong regulatory environment when there are sustainability concerns.

## **5.4 ASSESSMENT AGAINST SECTION 25 & 25B CRITERIA**

Section 25 of the Act allows for species that are currently managed together in combined stocks to be managed separately through alteration of the current QMAs. As set out in the Legal Considerations section of this document (section 3.4) there are a number of prerequisites that need be met before such an alteration can take place. An assessment of these is set out below in the same order that they occur in the Legal Considerations section.

### ***Non-commercial fishing interests***

MPI considers non-commercial fishing interests would not be detrimentally affected by managing the stocks separately as proposed in Option 1. MPI notes that recreational catch of eels is considered to be relatively low (refer Appendix 1), no submissions were received from recreational fishers, and that tangata whenua support the proposal to manage longfin and shortfin eels separately.

### ***Biological characteristics***

The biological characteristics of longfin and shortfin eels (refer Appendix 1) are a fundamental driver for separate management of each species. Longfin and shortfin eels have different growth, maturity and other biological characteristics that support the need to manage them separately.

### ***Consultation***

MPI has undertaken preliminary and statutory consultation with tangata whenua and stakeholders, and has sought submissions from Maori, recreational, commercial and environmental interests on whether the eel species should be managed separately.

### ***Input and participation of tangata whenua***

Tangata whenua for the South Island have provided input and participation on whether the eel species should be managed separately through Te Waka a Māui me ona Toka and Ngāi Tahu Mahinga Kai Hī Ika Kōmiti. Tangata whenua support managing South Island eel stocks as separate species.

The forums noted that the Te Waka a Maui ona Toka Mahi Tuna South Island Eel Management Plan 1996, which was led by tangata whenua provided the basis for including South Island eels in the quota management system, and that this plan recommended separate TACs for shortfin and longfin eels (*“that the stock assessment process establish separate TACs for both shortfin and longfin species”*), which can only be achieved with separate stocks.

### ***Kaitiakitanga***

MPI notes you are required to have particular regard to kaitiakitanga when considering alterations to QMAs. Eels (tuna) are of particular importance to tangata whenua in the South Island, who hold a good understanding of the habits and life history of tuna, and exercise stewardship of the resource in accordance with tikanga Maori. Tangata Whenua, through the joint MPI/ iwi forums noted above, have advised that they support managing South Island eel species separately.

### ***Proposed quota management area alteration plan***

Under section 25B of the Act, you may recommend the alteration of any QMA under section 25(1) without receiving a request from quota owners. To do so, you are required to approve a plan providing for all of the following matters:

- a) The boundaries of the proposed quota management area or areas.
- b) The species that comprise the stock or stocks after the alteration.
- c) The manner in which quota shares are to be apportioned after the alteration.

The proposed plan is set out in Appendix 3. In terms of c) MPI proposes that the existing shares within each existing ANG QMA would be allocated pro-rata to the new LFE and SFE QMAs. That is, if a quota holder holds 20% of quota shares in ANG 11 they would receive 20% of quota shares in each of SFE 11 and LFE 11. This approach enables quota holders to utilise both species (should they choose) in the future, or to buy or sell quota to obtain their preferred mix of longfin and shortfin shares.

In response to the concern in the SIEIA submission that the ‘separation plan’ outlined in the discussion document released for public consultation was deficient, MPI notes the key elements of the plan were set out in the document, and that the plan is relatively simple and does not require detailed explanation.

### ***Alteration necessary to ensure sustainability***

As noted above, section 25B(b) requires you to be satisfied, having considered alternative options, that the alteration as specified in the plan is necessary to ensure sustainability.

“Ensuring sustainability” is defined in section 8 of the Act to mean:

- (a) *maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and*



- (b) *avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment.”*

The alternatives to altering South Island eel QMAs to provide for separate management of longfin and shortfin eels are the status quo (current combined management), or the voluntary and other measures proposals put forward in industry submissions.

Currently, South Island eels are managed as combined stocks; however, there is a continuing risk that either of the species could be overfished as most (or all) of the TAC could potentially be taken as one species. It is currently unlikely that the entire TAC would be taken as longfin due to current market demand and port price being higher for shortfin. Information from fishers suggests that longfin eels over 750 grams are not targeted as they obtain a lower price and are less marketable. However, this could change in the future, which may increase the demand for longfin eels. It is very likely that if all the current TACC in a QMA was taken as longfin eels, abundance would decline.

Sustainability settings for combined stocks can be adjusted in an effort to address this risk; however, this is more complex and less effective for a multi-species stock compared to a single species stock. For example, if the stocks were to remain combined, the TAC for both species would need to be set at a level that, if fully caught, would be sustainable for longfin eels. This creates a potentially significant utilisation cost for those commercial fishers that have historically targeted shortfin.

In terms of the voluntary and other measures proposals put forward in industry submissions (discussed in more detail in section 5.3), MPI considers some of these have merit. However, the industry proposals are not currently well specified and a confirmed plan is required before they can be properly assessed. Importantly, MPI supports a strong regulatory environment when there are sustainability concerns.

Managing the species separately (i.e. Option 1) would allow any current or future sustainability concerns to be more effectively addressed than either of the alternatives. This approach will better maintain the potential of the South Island eel resource to meet the needs of future generations than the alternatives. Separate stock management allows the different biological characteristics; economic, social, cultural and economic values to be reflected in the catch limits, management objectives and other sustainability measures set by the Crown for each species.

## 6 Consequential Regulatory Amendments

To give effect to the alteration of QMAs to separately manage longfin and shortfin eel species (if approved), a number of consequential regulatory and other amendments will be required. These include the following:

### 6.1 CREATION OF QUOTA MANAGEMENT AREAS

The geographical description of the new LFE and SFE QMAs are to be the same as the current ANG QMAs defined in the First Schedule, Part III of the Act. MPI does not propose any changes to the current QMA area descriptions, just that they be applied to both LFE and SFE stocks.

### 6.2 FISHERIES (REPORTING) REGULATIONS 2001

Schedule 3, Part 1, Table 1 of the Reporting Regulations will need to be amended to specify the new fish stock codes to be used when reporting.

### **6.3 INCLUSION ON SCHEDULE 2 OF THE ACT**

SFE 13 will need to be referred to in Schedule 2 of the Act. As a stock with fluctuating abundance, SFE 13 will be added to Schedule 2 (as is ANG 13 currently) to provide for in season increases in the TAC.

### **6.4 INCLUSION ON SCHEDULE 3 OF THE ACT**

All new South Island SFE and LFE stocks will need to be referred to in Schedule 3 to align them with management of eel stocks generally (including the current South Island ANG stocks). This provides for the setting of TACs under s 14 rather than s 13 of the Act.

### **6.5 INCLUSION ON SCHEDULE 5A OF THE ACT**

All new South Island SFE and LFE stocks will need to be referred to in Schedule 5A to maintain the current restriction on carrying over uncaught ACE that applies currently to South Island ANG stocks.

### **6.6 INCLUSION ON SCHEDULE 8 OF THE ACT**

South Island ANG stocks are currently listed on Schedule 8 providing a minimum 4 tonne ACE holding requirement. The new South Island SFE and LFE stocks will need to be listed on Schedule 8 to maintain this requirement. Following further discussions with the eel industry and stakeholders, in the future MPI may review whether the minimum holding requirement should be reduced or removed.

### **6.7 OTHER MEASURES**

Other QMS settings such as the Deemed Values Order will need to be amended to revoke the interim and annual deemed value rates for all ANG stocks and to insert new deemed value rates for each of the South Island LFE and SFE stocks. The setting of deemed value rates, should separation occur, will be considered as part of the sustainability round for 1 October 2016 along with the setting of TACs, TACCs and allowances.

## **7 Other Matters**

Should you decide to approve the separation of South Island eel stocks, MPI will notify the public and those with an interest in South Island eel quota, or leases and transfers, of this intention. The proposed separation of stocks would be effective on and from the first day of the next fishing year, being 1 October 2016 for all stocks except for those stocks created within ANG 13, which has a different fishing year and would come into effect on 1 February 2017.

If, instead, you agree to receive and assess a confirmed industry plan showing how its alternative proposals would be implemented, then there would be insufficient time to alter eel QMAs in 2016, should you ultimately decide to do so. Instead any alterations would come into effect in 2017.

## **8 Conclusion**

The biological characteristics of longfin eel makes it vulnerable to over exploitation, but catch of the species cannot effectively be controlled within a combined catch limit without unnecessarily limiting the catch of the shortfin species. Separate management would allow the different biological characteristics; economic, social, and cultural values; and associated management objectives to be reflected in TACs and other sustainability settings for South island eels.

In particular, the longfin eel population in Southland is likely to decline at recent catch levels, while shortfin eels in Otago are at the soft limit (and therefore in need of rebuilding). In addition, there is little information to assess stock status for ANG 11, 12 and 14, and if catch were to increase to the level of the TAC for any of these stocks then it is likely that overfishing would occur. If a disproportionate amount of the TAC came from one species or the other for several years, then it is very likely the abundance of that species would decline. Separating the species would allow a more effective, targeted response to these sustainability risks.

MPI therefore considers separate stock management is necessary to ensure sustainability of South Island eels; longfin eels in particular. Separate stock management is also consistent with the overall purpose of the Act (to provide for the utilisation of fisheries resources while ensuring sustainability) in that it removes the need to reduce the combined TAC (and the TACC) in response to sustainability concerns over one of the species in the combined stocks.

Separately managing the stocks will reduce commercial fishers' flexibility to adjust longfin or shortfin catch depending on catchability and seasonal variations, and /or increase transaction costs to industry from increased quota and ACE trading. Therefore, the eel industry has proposed voluntary and other measures as an alternative to separate management. Some of these measures have merit, but further information and analyses would be required to determine whether as a package the proposed measures are a robust alternative to separate stock management.

If you are uncertain regarding the level of sustainability risk under the current combined management approach, and consider that this risk may potentially be managed by further work on the industry measures (in combination with adjustments to the existing framework), then you could provide the eel fishing industry an opportunity to submit a confirmed plan. However, MPI supports a strong regulatory environment when there are sustainability concerns. To receive and assess a confirmed plan setting out the necessary detail and governance arrangements would mean there is insufficient time to alter eel QMAs to separate the species in 2016, should you ultimately decide to do so. Instead any alterations could come into effect no earlier than 2017, which would run contrary to your previous public communications on this review.

## 9 Appendix 1 – Fishery Information

### BIOLOGICAL CHARACTERISTICS OF EELS

New Zealand has two main species of freshwater eel<sup>6</sup>, the native shortfin eel *Anguilla australis* (also found in South Australia, Tasmania and New Caledonia) and the endemic (found only in New Zealand) longfin eel *Anguilla dieffenbachii*.

New Zealand freshwater eels are regarded as temperate species and have a unique life history. They live predominantly in freshwater and undertake a spawning migration to an oceanic spawning ground. The majority of the life cycle is spent in freshwater or estuarine/coastal habitat. Spawning of New Zealand species is presumed to take place in the Southwest Pacific. Offspring undertake a long oceanic migration back to freshwater where they grow to maturity before migrating back to the oceanic spawning grounds.

The habitat of both species overlap, however, shortfins prefer lowland lakes and slow moving soft bottom rivers and streams and are predominant in coastal areas. Longfins prefer fast flowing stony rivers and are dominant in high country lakes.

Growth in freshwater is highly variable and dependent on food availability, water temperature and eel density. Eels, particularly longfins, are generally long-lived. The maximum recorded age is 106 years for longfins and 60 years for shortfins. Longfin eels take approximately 4.7 years longer to reach the minimum legal size (220 g). South Island shortfin eels take, on average, 12.8 years to reach the minimum legal size, compared with 17.5 years for longfins.

Migration appears to be dependent on attaining a certain length/weight combination and condition. The range in recorded age at migration for shortfin males is 5–22 years and 9–41 years for females. For longfin eels the range in recorded age at migration is 11–34 years for males, and 27–61 years for females.

Due to their unique life history, both species of eels are classified as being vulnerable to harvesting and other impacts. The longfin eel is likely to be even more vulnerable to harvest pressures than the shortfin eel because they are slower growing, mature much later, live longer and do not migrate for spawning until later in life.

### COMMERCIAL FISHERY

Virtually all commercially caught eels (98%) are taken with fyke nets. Eel catches are greatly influenced by water temperature, flood events (increased catches) and drought conditions (reduced catches). Catches decline in winter months (May to September), particularly in the South Island where fishing ceases.

The South Island eel fishery was introduced into the quota management system (QMS) on 1 October 2000 with shortfin and longfin species combined into six stocks (codes ANG 11 to ANG 16). TACs, TACCs, allowances and other management settings for management within the QMS were developed in consultation with tangata whenua and stakeholders (Table 1).

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<sup>6</sup> A third species of freshwater eel, the Australasian longfin (*Anguilla reinhardtii*) was identified in the North Island 1996. When caught it is included as part of the shortfin catch as this species has productivity characteristics closer to shortfins than longfins, and because the catch is not sufficient to justify its own separate stocks

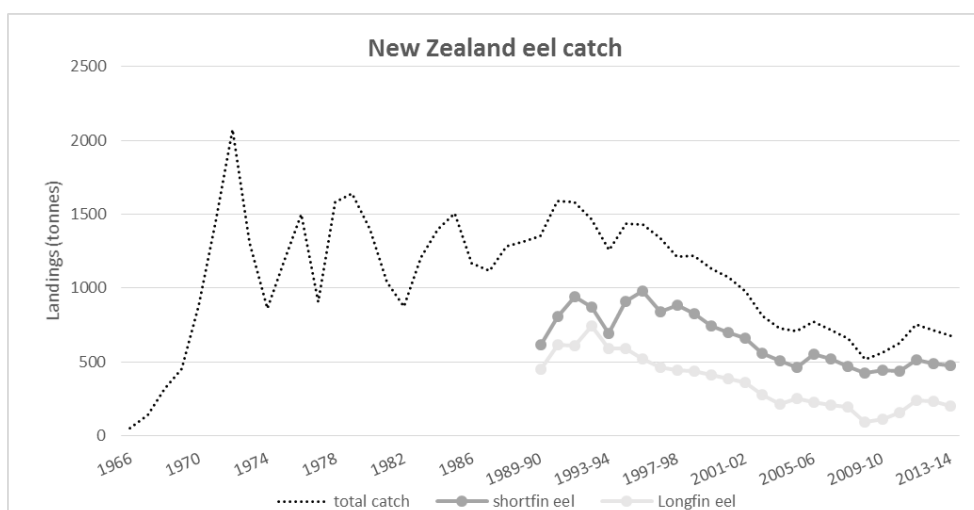
**Table 1: Current TACs, TACCs, and customary non-commercial and recreational allowances (t) for South Island eel stocks. Note as eels are a selective target fishery there is no allowance for other sources of fishing-related mortality.**

	ANG 11	ANG 12	ANG 13	ANG 14	ANG 15	ANG 16
	Nelson/ Marlborough	North Canterbury	Te Waihora Lake Ellesmere	South Canterbury	Otago/Southland	West Coast
<b>TAC</b>	51.29	54.8	156.32	45	150.85	80.41
<b>TACC</b>	40	42.74	121.93	35.1	117.66	62.72
<b>Customary Non- Commercial Allowance</b>	10.258	10.96	31.26	9	30.17	16.082
<b>Recreational Allowance</b>	1.0258	1.096	3.13	0.9	3.017	1.608

The Chatham and North Island eel fisheries were introduced into the QMS on 1 October 2003 and 1 October 2004 respectively using separate quota management areas for shortfin and longfin eels.

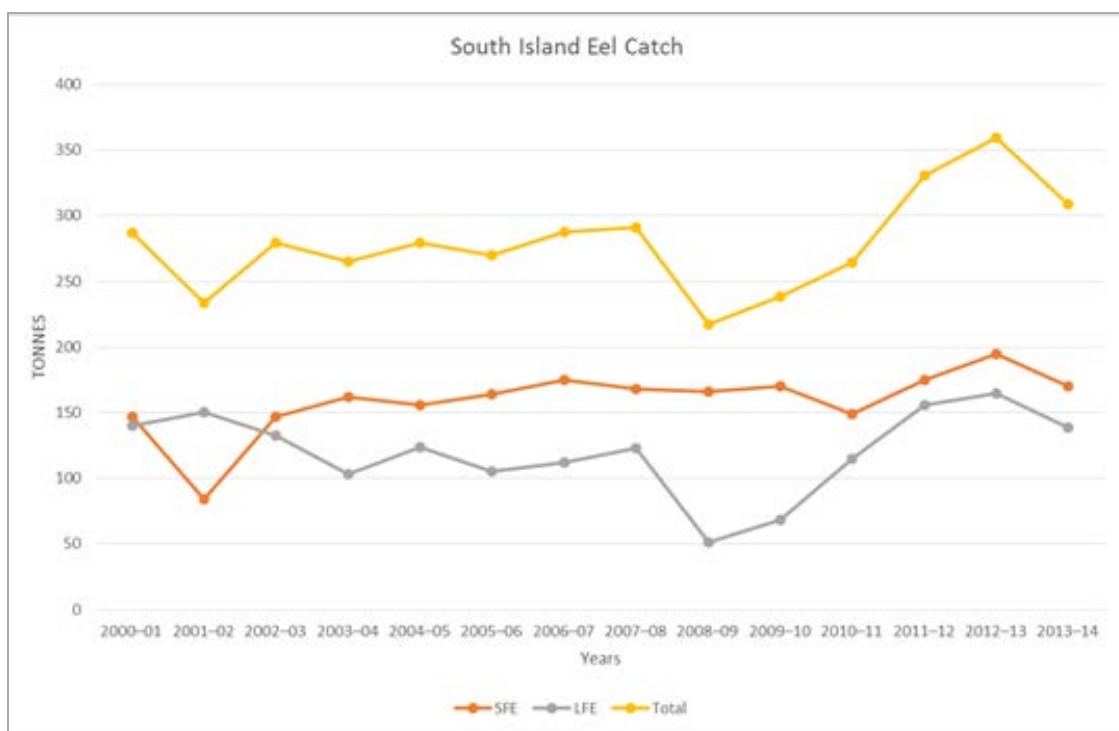
The fishing year for all stocks extends from 1 October to 30 September except for ANG 13 (Te Waihora/Lake Ellesmere), which has a fishing year from 1 February to 31 January (since 2002). Currently, there are minimum and maximum commercial size limits for both longfins and shortfins (220 g and 4 kg, respectively) throughout New Zealand. Quota owners from both islands formally agreed in 1995–96 not to land migratory female longfin eels. Since about 2006 there has been a voluntary code of practise to return all longfin eels caught in Te Waihora/Ellesmere; catches of these longfins are recorded on Eel Catch Effort Returns (ECERs), but not on the Eel Catch Landing Returns (ECLRs).

Commercial catch data is available from 1965 and comes from different sources. Catch data prior to 1988 is for calendar years, whereas those since 1988 is for fishing years (Figure 3).



**Figure 3: Total eel landings from 1965 to 2012–13, as well as separate shortfin and longfin landings from 1989–90 to 2012–13.**

Commercial catch landings for South Island stocks have been reported separately for longfin and shortfin eels since QMS entry in 2000 (refer to Figure 4).



**Figure 4: Total commercial landings (t) for South Island eel stocks (based on ECLR data).<sup>7</sup>**

The species proportion of the landings varies by QMA. From analyses of landings to eel processing factories and estimated catch from ECLRs, longfin are the dominant species in most areas of the South Island, except for discrete locations such as lakes Te Waihora / Ellesmere, Brunner, and the Waipori Lakes, where significant quantities of shortfin are landed.

Graphs showing catch landings by shortfin and by longfin species and TACCs since 2000–01 are presented in Appendix 2. Tables of this data are set out in Appendix 3.

The average port price for South Island eels since QMS entry is \$4.17 per kg, giving an average annual total port price for eel landings of \$501,317.40 for longfin and \$647.184 for shortfin in the South Island.

## RECREATIONAL FISHERY

In October 1994, a recreational individual daily bag limit of six eels was introduced throughout New Zealand. There is no quantitative information on the recreational harvest of freshwater eels, but it is considered to be low and likely to be less than the existing recreational allowance (refer Table 1). The recreational fishery for eels includes any eels taken by people fishing under the amateur fishing regulations<sup>8</sup> and includes any harvest by Maori not taken under customary provisions.

When the South Island eel fishery was introduced into the QMS, an allowance was made for recreational harvest of 2% of the TAC for each QMA, currently equating to 11 tonnes (Table 1). Based on available information, current recreational harvest is within this allowance.

<sup>7</sup> Appendix 3 – Eel catch per QMA

<sup>8</sup> Fisheries (Amateur Fishing) Regulations 2013

## CUSTOMARY FISHERY

Eels (tuna) are considered taonga (treasured) by Maori and are traditionally an important food source. Maori developed effective methods of harvesting, and hold a good understanding of the habits and life history of eels. Maori retain strong traditional ties to eels and their harvest.

In the South Island, a number of areas have been set aside as non-commercial areas for customary (and recreational) fisheries. Additionally, there are seven mātaihai reserves covering freshwater (five that are solely freshwater, and two that cover both freshwater and saltwater bodies) that have been established where commercial fishing is prohibited.

Customary non-commercial fishers prefer eels of a large size, i.e. over 750 mm and 1 kg. There is no complete assessment of the current or past customary non-commercial take for the South Island. However, there is information on customary non-commercial catches from authorisations issued under customary fisheries regulations. These regulations are in force across most of the South Island (not ANG 11). The data collected over the last 17 years shows the majority of customary catch is from ANG 12 (North Canterbury) and ANG 13 (Te Waihora/Lake Ellesmere). The records also suggest that eel customary permit fulfilment (comparison of quantity authorised to that able to be caught under that authorisation) is of particular concern for ANG 12 and ANG 14.

When the South Island eel fishery was introduced into the QMS, an allowance was made for customary non-commercial harvest. It was set at 20% of the TAC for each QMA, currently equating to 107 tonnes (Table 1). Based on available information, current customary harvest is within this allowance.

## 10 Appendix 2 – Submissions

- 1) Shane Anderson – Quota holder
- 2) Ross Campbell – Quota holder
- 3) Shane Metcalf – Quota holder
- 4) Mossburn Enterprises Ltd – Eel processor
- 5) Lake Ellesmere Fisherman's Association – Eel fisherman association
- 6) New Zealand Eel Company – Eel processor
- 7) South Island Eel Enhancement Company (SIEIA) – Eel industry association
- 8) Eel Enhancement Company – Eel processor
- 9) Parliamentary Commissioner for the Environment (PCE)
- 10) Working Waters Trust – Environmental organisation
- 11) Environment Canterbury – Regional Government
- 12) Forest and Bird – Environmental organisation
- 13) Ciaran Campbell - Individual
- 14) Rosemary Clucas - Individual
- 15) Stella McQueen – Fresh water ecologist
- 16) Meridian Energy – Dam operator.



Submitter: Shane Anderson

Date: 1/2/2016

Time: 3.30pm

Method: Phone call

Quota Reference number: 9080034

Submission Points:

- 1) Shane is against the separation of the stocks
- 2) Some catchments are straight long fin and other catchments are straight short fin.
- 3) No market for large long fin. Currently fishers are only receiving \$2 per kilo for long fin >750gm
- 4) Historically long fin was the most valuable.
- 5) Currently longfin stocks are increasing;
- 6) Increasing amount of reserve areas and mataitai reserves, which are closed to commercial eel fishers
- 7) Recruitment is the biggest issue. Subject to recruitment entire catchment can change from long fin to short fin.
- 8) Nobody wants large long fin
- 9) Large long fin eat small short fin and small longfin

Submitter: Ross Campbell

Dear Duncan

Regarding MPI's proposal to split longfin eels and shortfin eels I believe there is no need, as catches of longfin eels and shortfin eels are being recorded separately now. Splitting the stocks will serve no useful purpose. If MPI can access the eel fishers "GPS position data logger information", you will have all the information you need on how many, and where, of all shortfin eel and longfin eel landings in the South Island. Option 2 should remain.

I am very concerned that MPI and others, are not aware of how the commercial eel fishery actually works, so I will explain. The eel fishery is at lower levels now, than prior to 1993. Since 1993, the fishery has been stable and still is. My accurate records that go back to 1975 show the longfin eel is NOT in decline. For MPI to say that there is "sufficient data" to determine ANG15 stocks are "above the stock limit", is an extremely flawed statement, and is incorrect. I believe upper and lower limits should not be used to monitor the eel fishery's health. My records show that the longfin eel stocks in ANG15 are stable and have been since 1993, and the only variances in catch are totally shaped by the season, be it dry years or flood years. During large flood years eels gorge themselves with food, their stomachs become enlarged, then slightly smaller eels are caught in the nets when they would normally escape. My catches increase by 50% on flood years. The years following a flood year eel catches return to lower levels and remain there until the next large flood year. For Southland and Otago (ANG 15) this is 1 year in 3 years average. As you will see from my "Eel Catch All Years" data you can get 3 flood years in a row. This takes out many more eels than normal and will result in even lower catches until the next flood year.

I Have been fishing full time since 1969, catching in mainly the same places for 47 years. I have landed approximately 870 tons. (I do not have exact landing data prior to 1975 as we were not required to put in catch returns). 99% of my catch has been longfin eels. I estimate that at least 90% of my total eels caught were of a size range of between just larger than escapement tube size (31 mm tube, 300 grams approximately) and 700 grams, particularly after 1982. Just what grows one year to the next.

The eel size at escapement tube size, 25 mm was about 220 grams. (Prior to 1990)

Eel catches during flood years (2.0 meters or higher) are approximately 50% greater.

Since 1982 I have fished all of my places to the maximum, fishing the same places many many times in the same season. No matter how hard you fish any river that has been fished hard before, it will not affect the stock left, as all eels I catch annually, are what grows each year, when they reach the escapement tube size in the nets. The eels that are slightly larger than escapement tube size, (up to 700 grams), are what has grown in the months after I last fished a place, until the end of the season, and the months it takes me to get back to the same place, in the following season.

You should be aware that some eels grow extremely fast and some eels grow extremely slow, and the age of the bulk of eels (at current escape tube size of 31 mm) is between 15 years and 25 years old. (This data is readily available). This means that we are only catching 1/20th maximum of the number of eels in all rivers, if we caught them all, which we do not. Conversely if you fish hard other areas that are only fished once in a season, or maybe longer, then this will catch out a lot of the larger eels and reduce the weight of eels in that area. The size of the eels will also reduce. However the numbers of eels will remain the same for some time, then increase, but the weight of eels will reduce. Larger sized eels living in any area will eat most of the small eels out.

Due to no markets for larger sized eels this year and last, many eel fishermen are concentrated into smaller areas and fishing pressure is greater. However this has no effect on the smaller eel population in these areas, all that is happening is each fisherman gets a smaller slice of the pie. This will affect the CPUE and average lift per day data. This is not a problem as this has always happened in the past in some areas. CPUE and average lift data should only be used as a rough guide to the state of the eel fishery. There is NO way of accurately measuring the health of the eel fishery. Having large numbers of 2kg plus longfin eels in the rivers is the only way to be sure of having a healthy longfin fishery. Using electric fishing machines to monitor elver populations is a bad idea as it is extremely inefficient as I have personally seen one in operation many years ago.

If MPI and the government are serious about improving the numbers of longfin eels back to levels prior to 1993, they should listen to what SIEIA has put forward to decrease the maximum size of the longfin eel from 4 kg's to 2 kg's. This will allow many more eels to reach migrating size, and will have increased numbers of elvers returning to all rivers. It was Southland Otago eel fishermen who advocated the 4 kg upper size limit be put into law for longfin eels in 1995 with a voluntary release for 1995-1996 season. We asked Ministry of Fisheries to bring this into law for 1996-1997 season, which happened. The eel fishery would not be as good today if this had

not happened! Some of the eels we are catching now will be from some of those released longfin eels.

This is the perfect time to reduce the size of longfin eels to 2 kg's as large numbers of 750 gram to 4 kg longfin eels were left in the rivers last season, and most will be left in the rivers this season, as there is no market for this size at the moment. However, if you do nothing about this, as soon as the markets come right, the fishermen will land a lot of these large eels as it takes some years for them to reach the 4 kg upper limit.

Eel fishermen will stop catching in areas where they have to return much of the catch to the river. It is a lot of work to physically remove large quantity's of oversize eels from the fyke nets. This is already happening in a few places where the size of eel has increased dramatically due to not being fished for some time. These areas are at CPUE saturation. Reducing the size limit to 2 kg's will hasten this process.

If you look at the data of migrant longfin eels being released from Manapouri and Te Anau 2006 onwards, and the greatly increased numbers of elvers returning (2 to 3 times as many) to the Mararoa Weir in the same period, you will see there is a direct relationship. More large Longfin eels migrating means more elvers returning. These extra elvers return to ALL rivers in New Zealand. It is essential that this continues for ALL TIME. National Parks and other commercially not fished areas MUST be included in any future stock assessment, as they play a significant part of the whole eel fishery in New Zealand.

The only reason that eel numbers were greater prior to 1993, was because there were many more large longfin eels in the rivers and lakes then, therefore greater numbers were migrating. Many of the migrant longfin eels were coming from the lakes in the years 1950-1980. However many of these lakes have since been dammed, and elvers have been prevented from entering these waterways. Large longfin eels are also killed as they travel through the dam turbines. This has caused a huge reduction in large migrating longfin eels.

I believe the government should do more to get ALL dam owners to do something to allow free passage of elvers and migrating longfin eels, if they are serious about doing something to improve the longfin eel fishery.

I believe MPI and Government should also be doing more to encourage regional councils to do more to protect and increase eel habitat in all waterways. More habitat means more longfin eel numbers.

I think to do nothing to increase the number of large longfin eels in our waterways, would be a tragic loss for the Longfin eel fishery.

I have attached records of my landings since 1982, to show what has occurred with heavy fishing in the same areas over many years. I have also included my seasonal catch records since Quota was introduced in 2000 of where all my daily catches, with full information, were landed from.

To cut the TAC will cause a great financial loss to all quota holders, and to other non quota holder fishermen. There will not be enough quota to go around, reducing everyone's earnings some years and causing some to exit the fisheries completely. The uncertainty with MPI's talk of quota cuts has already caused quota to devalue.

This is a bad situation. Cutting the TAC should only be considered as a last resort. As I have shown, there are other ways and better ways of achieving the same results. I believe that if the TAC is reduced without regard for what I have explained in this submission, then compensation MUST be paid to all quota owners.

In about 7-10 years time there WILL be many more large longfin eels in our waterways and extra commercial sized eels being caught, and many many more large female longfin eels migrating. This process will take slightly longer than a TAC cut but will still achieve the same result.

If you cannot read the attachments please let me know and I will photocopy and send to you. I also can send you the other earlier years catch data if you need.

I would like the Daily Catch Data treated as confidential within MPI.

Average eel lifts all rivers can be shown to anyone.

Yours sincerely

Ross Campbell

Submitter: Ross Campbell continued.

Dear Duncan

Further to my submission I sent you yesterday my statement that "there is no way to monitor the eel fishery" may be incorrect.

I have done all my fishing since 1995 by Jet Boat in the main rivers in area ANG15. I have tried over the years to work out what the eel populations are in the rivers that I fish, and whether they are declining or increasing, but I have not been able to work that out.

I am the main user of the main rivers , the other fishermen have been mainly fishing the side creeks and streams and ponds. The problem I have had is that some of the places I fish are being done by the other fishermen. They access the upper reaches of some rivers with 4wd in the river bed. Some fishermen are setting their nets from the banks in the lower areas, and others use dingy's in tidal areas. This makes it impossible for me to know exactly how many eels are coming out of a stretch of water.

However if MPI could get all fishermen in New Zealand to use a GPS position eel catch data logger with the same app as the SIEIA EiEL app, then you would have a 100% clear picture of total eel landings of all waterways in New Zealand. This would enable you to see if there is any changes to the eel population, taking into account the dry seasons and the flood seasons. You would then know the exact commercial stock levels for all shortfin and longfin in every area in New Zealand. If there was any changes in trend in any area, you would quickly know. If you had a drop in catches in many areas then you would know there is a recruitment problem and could quickly react to this. I think it would be in the MPI's interest to have an electronic data logger record as well as catch effort and landing returns.

Some Southland fishermen trialed SIEIA data loggers last season, and most are now using them this season. I know SIEIA are to make a push next season to get most using them. There are some who are resisting using a data logger and this will result in incomplete records which defeats the whole purpose of recording this information. We will not have a clear 100% record of the state of the whole eel fishery.

I think government should give some funding to set up a robust system to record exactly where all the commercial eel catch is coming from, shortfin and longfin. Because the data loggers have two GPS position marks with exact time record, start of lift and finish of lift, it is impossible for a fisherman to give a false record. The data will be completely reliable.

We are also recording how many over 4 kg's eels are released so the data logger shows exactly where these were caught. If MPI was to go with the reduced upper size limit for longfin eels to 2 kg's the data loggers would show exactly how many were being released, and where. This information could then be used to determine whether there were sufficient numbers being released to make the required difference to the longfin eel fishery, or whether there should be a further reduction below 2 kg's to build the fishery back up to prior to 1993 levels.

This may be the best way forward to get an exact idea of where the eel fishery is at , which at the present time we do not.

Yours Sincerely

Ross Campbell

### Submitter: Shane Metcalf

To whom it may concern,

I would like to put forward my submission for the management of eels as a fisherman and quota holder.

I brought quota based on the decisions made by the panel of experts that was made on sustainable eel stocks assessments.

When quotas first came out for eels maybe the panel of experts were wrong then and shouldn't be there this time – maybe they are not experts they like to think they are and they should certainly not be in a position of making decisions that affect people's livelihood's and the long term sustainability of this country's eel stocks.

DOC are closing up more and more waterways which as a result increases the pressure on the remaining areas where fishing is still permitted – it would seem they are not thinking of the eels.

The University paper writers that I have come across conducting their studies on the eels are hopeless and their absolute lack of understanding of the habits the animals they are trying to study is abundantly obvious.

I personally have had to assist them in their efforts to catch the eels, trout and whitebait they are seeking to study as it is very apparent they have no understanding of how these animals actually exist in the real world outside of the classroom and based on the lack of species they are catching due to their lack of practical knowledge they leave their study areas and return to write up very long in depth (albeit misguided) papers about how the eel stocks are in

imminent danger which is put to the general public and associated government departments as facts.

The Green movement in NZ do want anyone it would seem working in these environments – they are a great advertisement for the NZ economy.

I do support MPI in their efforts in the sensible management and sustainability of the SFE and LFE species.

I do not support the bullying tactics of the Greenies , DOC and the Universities who only have their own misguided agendas at heart and will only listen to what they want to hear or deem “correct”

On careful consideration I support OPTION 2 – the only reasonable choice for the long term sustainability of LFE and SFE.

Yours Sincerely

Shane Metcalf

## Submitter: Mossburn Enterprises Ltd

o

Attention: Duncan Petrie Senior Analyst  
Inshore Fisheries Management  
Ministry for Primary Industries  
PO Box 2526  
Wellington 6140

Dear Duncan,

Re: Submission on: Proposed Separation of South Island Eel Stocks MPI paper No: 2016/01

Mossburn Enterprises Ltd,(MEL) for the last fifty years has processed eels from the South Island. Buying eels from over the entire Island. In this time we have seen the fisheries go from a wild fisheries of poor quality to a fisheries well managed producing wild eels that can compete on the world markets.

I have read your two options presented in the discussion paper, and I'm strongly opposed to option 1, as outlined in the discussion paper but support option 2.

The eel industry started in the South Island in late 1948 till the early 1950, in this time eels were taken by my father and canned in Bluff for the Chinese markets

It was not until the late 1960's before it got under way again, at this time I got involved catching eels for Mossburn Enterprise Ltd. For the next thirty two years I caught for this company until the year 2000, when my wife and I purchased the company outright.

In the early stage of the fisheries, it went through a fish down stage. This being our large Southern Lake which are closed off from the sea by Hydro station. It was later determined that 30% of landed eels were coming from this area. By the late 1980's, this fisheries was all but gone through no recruitment.

In the late 1980's early 1990's, the eel industry lead by MEL were pushing Government for better management. At that time multiple permits were being used, using multiple names.

MEL using its fishermen, formulated the SIEIA and approached the then Fishing Industry Board to view our case on management. This brought about the formation of Te Waka a Maui me ona Toka Mahi Tuna or better known as TWM.

TWM comprised of Iwi, Industry, DOC, and Ministry of Fisheries. TWM applied to the government for funding under the Green package and were given \$1.2 million dollars to look at management of the South Island eel stocks. Eel management plans were produced for the future management of the South Island eel stocks. I should point out that this was the first fisheries to involve iwi/ industry 50/50 for the entire South Island to look at the management of a fish stock.

It was through this group (TWM) that the recommendation that the quota management system was the best system for managing eels, but not the only method. They also recommended that both stocks be managed as one under ANG 11-16. Many recommendation came out of this working group which MEL embraced to further develop the company. THE MANAGEMENT OF THE SI EEL STOCKS AS ANG was the most important of these.

TWM, main goal was to reduce effort from the multiple use of permits. Some permits had up to ten names listed to take eels. Of the 280 names listed then, we now have approximately 35 fishers for the whole of the SI. This all happened in the 1990's, the so called decline in the longfin fisheries.

Along with the reduction of fishers, TWM recommended an upper size limit of 4kgs. (As eels over 4kg produce 80% of our egg production.) At this time also Industry was experimenting with escapement tubes sizes to maximise yield per recruit. This went from 25mm to 31mm, or from 220grams to 300 grams. In heavy fished areas this had a big impact.

To balance all this TWM recommended that Stocks be managed as ANG. This was to take advantage of climatic conditions (floods) went Shortfin feed and Longfin are hard to fish for. By doing this it would lower the take of Longfin.

I could go on and explain more about the fisheries, but the issue is the splitting of the eel stocks from ANG to SFE and LFE. As stated I am strongly opposed to this happening. As you may take from the above I



have been involved with this fisheries for a long time. I have worked with a lot of scientists, research providers and iwi all in relation to eel management.

It is with disbelief that a government funded organisation being the Parliamentary Commissioner for the Environment can make statements regarding the split of the eel fisheries from ANG. MPI run an eel work shop, as you well know, this forum looks at all issues with eel stocks.

However, PCE choose to go public and call for the suspension of the longfin eel fisheries. I'm sure you will have read the "Path way to extinction" an investigation that has cherry picked information from industry research for their own needs.

PCE reports leads me to ask the questions of why we as an industry have spent hundreds of thousands of dollars on research to have this organisation take a hostile stance against commercial fishers and shy away from the real issue of habitat loss.

I feel sorry for all the research provider that have carried out eel research in the past now to have their work challenged and cannot respond. Most I have spoken to, and they are concerned that we are even thinking of splitting the eel stocks. A lot of this information will be lost or be of little use.

There are issues out there as well with Shortfin, this comes about in the way of a Mataitai in ANG 14. I raise this issue as it was not resolved at the time. The area concerned was a lagoon set aside under the deed of settlement, Wainono lagoon. At TWM level industry signed off on this. However after

the issuing of quota, the local iwi applied for the catchment of the Waihou river which drains the Wainono lagoon for a Mataitai. Industry strongly opposed this Mataitai as it was a Shortfin fisheries

producing up to seven tonnes of Shortfin eels each year. Seven tonnes of eels on a thirty five tonne TACC is 20 %. Industry is not opposed to Mataitai's. But our submissions were completely ignored.

Catch effort and CPUE are two different things in the eel industry. More than 20% of ANG stock has no landing recorded against it. This is because some Quota holder choose not to have it caught. This is because they have brought it as an investment and in some cases they know little about the fisheries act and are expecting elvers to be exported.

Also these non-effort people have no catch history of Shortfin, as do some fishers. This means that the quota holder that has put effort into taking shortfin will find he is issued with longfin.

MPI seem to have introduced a hard, soft and target level. To date industry is having some reservations about this. It seems to have been set with little understanding of the fisheries. The CPUE has change little from when the industry first started. The amount of eels landed over the years has fallen, as explained earlier, but CPUE has tracked along the soft limit. Eel fishers will always go to the easiest area to catch eels. A little less eels for a lot less cost is how it works.

The eel fisheries is quite short in the South Island because of climate and temperatures. Once the water temperatures reach 14degrees catches increase and CPUE goes up. This rise in temperature does not happen until about December and falls again the end of March. So in real terms the season is only four months. Maybe the soft and target levels should be taken over these four months.

In conclusion, I am disappointed that the South Island eel industry is getting tied up in a political arena, which is going to effect a lot of lively hoods. There is already uncertainty among fishers and catches will be well down this season. Which will be a loss to MEL.

It is well known that PCE has taken advice from activists when making their claims in her report.

Should option 1go ahead some fishers will be issue with Longfin quota which they have no catch history for.

MEL will have to restructure its quota base at a huge costs to the company.

MEL supports the submission presented by SIEIA.

Yours Faithfully  
Victor Thompson  
Owner Mossburn Enterprises Ltd

### **Submitter: Lake Ellesmere Fisherman's Association**

The Lake Ellesmere Fisherman's association fully supports the submission made by the South Island Eel Association.

We would like to further point out that lake fishers have had a voluntary agreement for at least ten years not to take Longfin eel. meaning that all the quota in that time had been caught on Shortfin eels.

Therefore in the event of a split we would want all our present quota to be turned into shortfin quota.

Clem Smitj

**Submitter: New Zealand Eel Company**

Attention: Duncan Petrie – Senior Analyst,  
Inshore Fisheries Management,  
Ministry for Primary Industries,  
PO Box 2526,  
Wellington 6140.

12<sup>th</sup> February 2016

Dear Duncan

**Re: Submission on: Proposed Separation of South Island Eel Stocks  
MPI Discussion Paper No: 2016/01**

NZ Eel Processing Ltd, managed by Southfish Ltd, processes shortfin and longfin eels which are caught commercially throughout the North Island. Eel fisheries in the North Island are separated into LFE and SFE for various regions, as opposed to single stock management (as ANG) for various regions in the South Island.

We have considered the options presented in your Discussion Paper, and would like to advise that a separation of ANG eel stocks into SFE and LFE (Option1) would be counterproductive to the South Island fisheries. Our advice is that Option 2, the status quo, should be retained, and Option 1 should be set aside.

The reasons for this are because:

1. Commercial eel fishing in the North and South Islands is fully sustainable under the existing regulatory regime. Scientific studies support this fact. In other words, if it isn't broke, don't try to fix it.
2. NZ Eel Processing Ltd takes particular offense at the implication from the Discussion Paper that longfin eels are somehow endangered and/or are not being sustainably harvested. CPUE data from the North and South Islands reveal that this is not true. The Parliamentary Commissioner's Report got it wrong, and is now out of date anyway.

The Peer Review Panel's Report looked properly into the scientific evidence and concluded that longfin eel populations have stabilised since they were brought into the QMS, and increased in some areas. Our fishermen agree with this conclusion, and frequently report that there are larger populations of longfin than before, in the areas they fish.

3. Eel fishermen stick to their favoured fishing areas and many waterways are closed by the Department of Conservation and private landowners, and are therefore left untouched. Fishermen are now encountering much higher populations of very large longfins, and in general the size frequency of longfins has improved markedly. In many areas longfins are actively avoided by fishermen. The area of fishery that had previously been targeted for longfins has now reduced very much. We are aware that a recent MPI report indicates that less than 20% of longfin eel habitat is commercially fished. It is difficult to see how

separation of ANG stocks would have any influence on NZ-wide eel populations under that scenario.

4. The separation of eel stocks in the North Island has had its problems. Fishermen have to juggle their ACE in accordance with their catch, and there are times when shortfin eels cannot be taken during ideal flood conditions because of a lack of ACE. These problems are manageable in the North Island, mainly because of the year-round fishing season. However, such problems would be considerably greater in the South Island, which has only a 6 – month season (4 months in Otago-Southland). The ability to juggle ACE under these circumstances would be much harder.

The relative take of shortfins versus longfins is highly reliant on the weather. Shortfin eels are always preferred as they always command a better price than longfins. If there is a shortage of shortfin ACE during good weather conditions for catching them, then the fishery as a whole will be much less efficient.

5. We experienced major difficulties with comparing year-on-year CPUE datasets after the North Island regulations were changed ~ 10 years ago. Similar problems with data comparability are likely in the South Island if the proposed ANG stock separation goes ahead.

6. The North Island Eel Enhancement Company Ltd (supported by NZ Eel Processing Ltd) spends a great deal of money on eel enhancement in the Waikato, and other catchments. NZ Eel Processing Ltd also spends a lot of money on advocacy for eel habitats, submissions to Regional Plans etc. These measures provide far better alternatives for enhancing longfin eel populations than separation of ANG stocks, or any other piecemeal regulatory measures the Ministry might wish to implement. There are some very good initiatives for enhancing longfin eel populations in the South Island as well, largely assisted by commercial fishermen. We strongly suggest that MPI gets in behind these measures, rather than taking a punitive approach towards commercial fishermen for no apparent gain.

Yours faithfully

Phil (Walt) Walters  
NZ Eel Processing Ltd,

Rata Street, P.O. Box 43, Te Kauwhata 3741, New Zealand

Ph 07-826 3616. Fax 07-826 3617.  
Email [nz.eel@xtra.co.nz](mailto:nz.eel@xtra.co.nz)

**Submitter: South Island Eel Industry Association**

South Island Eel Industry Association  
P O Box 1673, Invercargill.  
telephone 03 230 4608  
fax 03 230 4475  
Email: [waituna@xtra.co.nz](mailto:waituna@xtra.co.nz)

Attention: Duncan Petrie – Senior Analyst,  
Inshore Fisheries Management,  
Ministry for Primary Industries,  
PO Box 2526,  
Wellington 6140.

12<sup>th</sup> February 2016

Dear Duncan

**Re: Submission on: Proposed Separation of South Island Eel Stocks**  
**MPI Discussion Paper No: 2016/01**

The South Island Eel Industry Association (SIEIA) represents commercial eel fishermen who utilise the eel resource (shortfin and longfin eels) in freshwaters and coastal estuaries in the South Island. Our members comprise the majority of eel permit holders, and take the majority of the commercial shortfin and longfin eel catch in the South Island.

SIEIA has carefully considered the two options presented in the Discussion Paper, and can advise that its members are OPPOSED to Option 1 outlined in the Discussion Paper, and SUPPORT Option 2.

The reasons for this are summarised as follows:

1. Option 1 fails to meet the criteria set by the Fisheries Act S 25B (b)
2. The PCE Report has conclusions based on faulty data and it is out of date. Hence the rationale for implementing Option 1 does not exist.
3. Option 1 is unnecessary in terms of ensuring sustainability because SI eel (ANG) has better longfin CPUE trends than the separated NI eel stocks.
4. QMS manipulations are unlikely to significantly affect (or improve) NZ-wide longfin eel populations.
5. Threats to longfin eels have been misidentified. Commercial fishing does not significantly threaten longfin stocks in NZ.
4. Option 1 will significantly reduce catch efficiency, increase costs to commercial fishermen and reduce the ability to fulfil international eel markets.
5. Option 1 will adversely affect the long-term CPUE database
6. Option 2 was preferred by all parties when eels were introduced into the QMS, and has stood the test of time.
7. The “Plan” for separating ANG stocks, as required under S 25B of the Fisheries Act, is severely deficient.
8. Other measures are available, and are supported by SIEIA, which would provide for greater sustainability of the LFE fishery, and improve customary expectations.

**1. Background:**

The South Island eel fishery was introduced into the Quota Management System (QMS) on 1 October 2000, with the code ANG (for *Anguilla*). All eel species (*Anguilla* spp.) are combined under fish stock codes ANG 11 to ANG 16. The fishing year extends from 1 October to 30 September except for ANG 13 (Lake Ellesmere/Te Waihora) with a fishing year from 1 February to 30 January (which began on 1st February 2002). In reality, however, no fishing occurs over the winter months (May to September inclusive), as the eels do not readily feed or move about at this time.

The reasons why the commercial catches are less than the TACC are varied. Reduction in eel stocks is not a reason, as catch per unit effort (CPUE) is improving, indicating that the eels are becoming easier to catch, and hence more plentiful. Access to waterways has declined in some areas as a result of a general reluctance by rural landowners and Government agencies (such as the Department of Conservation) to allow commercial activities on their properties. Other reasons include:

1. A number of quota holders have purchased quota for their capital value, rather than for their harvest value. Hence, they are not fully utilising their harvest.
2. Overseas eel markets, and subsequent prices for South Island eels, have not been sufficient to encourage full harvest of existing stocks.
3. A number of mataitai areas have been gazetted, and some key waterways managed by the Department of Conservation (DOC) have been gazetted as National Park or Reserve, or otherwise closed. At this time, DoC does not normally allow commercial eel fishing.

## **2. Option 1 is not supported by the Fisheries Act S 25B (b)**

S 25B (b) states:

*The Minister may recommend the alteration of any quota management area under [section 25\(1\)](#) without receiving a request from quota owners ... if the Minister ... is satisfied, having considered alternative options, that the alteration as specified in the plan is **necessary to ensure sustainability**; (emphasis added)*

Despite the Discussion Paper implying support for Option 1 from the Parliamentary Commissioner for the Environment (PCE), Ngai Tahu and the Ministry itself, there is no robust information which supports Option 1. The key rationale for favouring Option 1 is that all ANG quota could be caught as longfin, but this has never happened, as the eel harvest is entirely dependent on the catch efficiency and value of each species. There are other mixed-species fisheries (e.g. FLA, HPB) which can be sustainably managed as such, and separating them on the basis that one species may be excessively harvested over another is also untenable.

Furthermore, the Discussion Paper does not effectively **consider alternative options** for ensuring sustainability of longfin populations. These alternatives are explored in Section 10 of this submission.

There is plenty of information which demonstrates that Option 1 is not **necessary to ensure sustainability** of longfin populations. This information has been presented to MPI Science Working Groups, and we are disappointed that, despite all of this recent work, the Ministry has seen fit to waste time in pursuing this unnecessary and potentially damaging proposal to split ANG stocks. Of particular note is the report of the Peer Review Panel, which now

surpasses the PCE Report. This clearly stated that any decline in longfin eel populations ceased in the year 2000, and in some areas populations are now increasing. This report recommended a number of studies to ensure sustainability of longfin eels, and these studies have now largely been completed. These include:

(i) Ongoing CPUE analyses. Currently, CPUE data shows that South Island shortfin and longfin populations have been either stable or increasing since their introduction into the QMS in October 2000. It was concluded that the present level of fishing is consistent with a sustainable fishery. Where data is available, CPUE analyses demonstrate that no areas have

**It is SIEIA policy to continue to maintain the present levels of fishing as outlined in the QMS, when CPUE and recruitment monitoring indicate stable or increasing eel populations. This recommendation is to be reviewed on an annual basis.**

had any sustained decrease since the introduction of the eels into the Quota Management System as ANG quota.

Furthermore, a comparison between South Island and North Island CPUE shows that the combined ANG stocks for SI eel has better longfin CPUE trends than the separated NI stocks.

(ii). Recruitment of freshwater eels. Reported from the MPI Eel Working Group meetings that monitoring of longfin eel populations from elver captures below hydro dams are extremely variable, and require additional corrections for age frequency before this information can provide reliable assessment of longfin eel population trends. Despite this, these data indicate that elver returns have been reasonably consistent since eels were first brought into the QMS in 2000.

(iii). Site specific selectivity of electric fishing gear – Stop Nets. The MPI Eel Working Group reports that use/non use of stop nets in electric fishing surveys prevented comparison between these electric fishing surveys. The conclusions of the PCE Report were therefore erroneous, because they were largely based on trends from electric fishing surveys which were not comparable.

(iv). Proportions of longfin eel habitat unfished: Reported from the MPI Eel Working Group that area of longfin habitat fished ranged from 13 to 18% for lakes and rivers. This excluded areas upstream of hydro dams. It was also reported from the MPI Eel Working Group that the area fished in the last five years was considerably smaller than the areas that fishermen had fished prior to that.

### **3. The Parliamentary Commissioner for the Environment (PCE) Report is not relevant to longfin management**

The Minister for Primary Industries has recommended these investigations on separating South Island ANG quota, as a result of recommendations from the Report on the longfin eel by the Parliamentary Commissioner for the Environment (PCE Report). We believe that the PCE Report contains faulty analyses and logic, and that separation of ANG stocks will hinder fishing effort, and provide no better management of both species than already occurs.

The PCE Report mentions: *Eels in the South Island were introduced into the QMS in 2000 as a combined fishery, but with the intention that longfin and shortfin fisheries be separated in*

time. This is referenced (182) by The 1997 Deed of Settlement between the Crown and Ngai Tahu, which states: *Shortfin and longfin should be managed separately where practicable.*”

However, the PCE Report fails to recognise that this statement is qualified by “*where practicable*”, and that the introduction of combined ANG eel quota in the South Island in 2000 was done with the full participation and agreement of Ngai Tahu. The only SI quota management area where separation is “practicable” is ANG 13 (Te Waihora/Lake Ellesmere) which is a shortfin-only fishery.

The PCE Report then self-justifies its own recommendation by stating separation should occur if there are fisheries sustainability concerns, and that it has found: “...*very good reasons to be concerned about the sustainability of the longfin eel – as a species and as a fishery*”. In other words, the PCE Report makes the conclusion that separation is justified, wholly on the basis of its own (faulty) findings.

The PCE Report conclusions are based on comparisons between electric fishing surveys (Figures 4.2 and 4.3) which indicate a recent drastic reduction in longfin elver recruitment. This Report failed to recognise the problems with using electric fishing data, i.e. that it can be corrupted by environmental factors and sampling error. We now know that electric fishing surveys are not comparable with each other (See Section 2 (iii) above) because of the variable use of stop nets. Further, the PCE Report failed to note the high variability in longfin recruitment below hydro dams, as outlined in MPI Eel Working Group reports, and that in some areas (e.g. Piripaua Hydro Station) longfin elver recruitment has substantially increased.

We are of the opinion that the PCE Report defies the test of scientific credibility, and that it is dangerous to allow reports of such low calibre to feature in the complex task of fisheries management. The 2013 Report of the Peer Review Panel has essentially surpassed the PCE Report, and the PCE Report should now be considered as of historic value only.

Consequently, there is no other worthwhile justification for proceeding with a separation. While SIEIA is not opposed in principle to separating stocks for management purposes when necessary, in this case it is clearly unnecessary in terms of ensuring sustainability.

#### **4. The Discussion Paper contains faulty rationale**

The Discussion Paper presents two options:

- Option 1: Split ANG stocks into SFE and LFE
- Option 2: Retain status quo

The Discussion Paper openly states that Option 1 is preferred by MPI, which suggests a level of undue bias against Option 2 and other potential options. This is reflected in the faulty logic used in the Discussion Paper to justify a preference for Option 1. Examples are provided below:

(i) The Discussion Paper states:

*Longfin and shortfin eels have different growth, maturity and other biological characteristics that support the need to manage them separately.*

This is incorrect. Growth and maturity in longfin eels are a function of habitat quality and have little to do with fisheries management. Spawner escapement (and subsequent recruitment) is a factor which can be considered. However, there is no definitive information



which suggests that any population of longfin eels, with upstream access from the sea, is suffering through a lack of recruitment. For example, studies on the Ashley River (Canterbury) demonstrate that, despite negligible longfin recruitment (as “measured” by electric fishing), the upstream eel population is predominantly longfin. MPI are aware of these and other examples, yet they are not presented in the Discussion Paper.

(ii) The Discussion Paper states:

*...managing the species separately is necessary to ensure sustainability of the longfin eel fishery in particular*

This statement is absurd. South Island eel stocks have been managed as one stock for the last 16 years. During this time, the decline in longfin eel CPUE through the period 1970-1999 had been halted, and in many quota management areas longfin CPUE has increased. The “necessity” for separate species management is simply not there.

(iii) The Discussion Paper continues:

*Stock separation will enable MPI to better respond to changes in longfin eel abundance and local sustainability concerns.*

The commercial South Island longfin harvest is measured separately to shortfin, so all Fisheries Act mechanisms remain available to manage longfins should their abundance significantly change. Similarly, local sustainability concerns are effectively managed through gazettal of mataitai, and other closure mechanisms available in the Fisheries Act. SIEIA has a clear track-record of supporting measures which protect and enhance longfin fisheries sustainability, providing there is evidence that such measures are effective. In this regard, splitting ANG stocks is not an effective measure.

(iv) The Discussion Paper states:

*If South Island eels continue to be managed as combined stocks there is a continuing risk that either of the species could be overfished as most (or all) of the TAC could potentially be taken as one species.*

This “continuing risk” is more imagined than real. The simple fact is that the take of shortfins versus longfin is a function of catch efficiency and port price. The landed price of longfins has and always will remain lower than that of shortfins. Therefore, in all ANG QMA’s, shortfins are preferentially taken over longfins. This means that, under ANG quota, the minimum number of longfins is always taken in each South Island QMA. This situation has been ongoing for the last 16 years, and is unlikely to change.

(v) The problems with Option 1, and benefits of Option 2, are poorly analysed in the Discussion Paper. The situation with eel stocks is that the shortfin/longfin fisheries are closely intermixed. If more shortfins are taken from a waterway, then more longfins will result, and vice-versa. This currently happens with North Island eel stocks. Under Option 1, fine-scale adjustments to TACC’s will be necessary to manage the continuing changes in SFE/LFE stocks in fished areas (13-18% of longfin habitat). Under Option 2, TACC’s are self-adjusting, so their fine-scale management is not necessary.

The 2015 Plenary Report states:

*There are no Level 1 Full Quantitative Stock Assessments on which to base specific recommendations on eel catch levels.*

How then, could Option 1 be implemented? The Discussion Paper does not provide an answer to this, and we presume that the allocation of SFE/LFE quota under Option 1 would be done on a guesswork basis. The self-adjusting nature of ANG stocks under Option 2 allows for ongoing maintenance of a sustainable harvest in fished areas (13-18% of longfin habitat), at least cost. The Discussion Paper makes no mention of this obvious benefit to fisheries management, in this situation where robust eel stock assessments are not easily available.

For all South Island longfin and shortfin stocks except Lake Ellesmere (ANG13), the Plenary Report states:

*Because the commercial eel fishery has had a long history (beginning in the late 1960s), and indices of abundance are only available from the early 1990s, it is difficult to infer stock status from recent abundance trends.*

Without the ability to determine TACC's from robust stock assessments, the implementation of Option 1 would be much more difficult than the Discussion Paper infers. Furthermore, ongoing fine-scale TACC adjustments, which would be necessary after Option 1 was implemented, would increase the MPI workload (and therefore increase quota management levies), and probably require decision rules. From the North Island LFE/SFE experience, it would appear that MPI has no appetite for making fine-scale TACC adjustments, nor any desire to allow for TACC increases in LFE no matter how justified they might be. In addition, despite a sustained trebling in ANG 13 CPUE over five years ago, MPI have not made the necessary TACC adjustment. Decision rules are not advisable without robust stock assessments, so this tool would not be easy to implement under Option1.

## **5. QMS manipulations cannot significantly affect (or improve) longfin eel populations**

Page 3 of the Discussion Paper states:

*As an alternative, the Minister decided to progress a package of management measures to ensure an increase in the number of longfin eels and their long-term sustainability. These management measures include:*

- 1. A review to consider the separation of South Island longfin and shortfin stocks to support improved management of each species.*
- 2. A review of catch limits for North and South Island longfin eels to ensure that they will support/promote an increase in longfin eel abundance.*

Graynoth (2008) concluded that 49% of longfin habitat (excluding waterways above hydro dams) is not commercially fished. More recently the MPI Eel Working Group concluded that only 13-18% of longfin habitat is currently commercially fished. Therefore, it is virtually impossible to have any tangible affect on NZ-wide longfin eel populations, their sustainability or their catchability through manipulations of TAC's or TACC's. Consequently, the separation of South Island stocks would achieve nothing towards managing longfin eel populations.

## **6. Threats to longfin eels have been misidentified**

There is no information which would suggest that longfin eel populations have declined as a result of commercial overharvest under the current QMS system using a combined ANG stock. Indeed, all CPUE analyses clearly demonstrate that, since the inclusion of longfin and shortfin eels into the QMS in the South Island in 2000, all eel populations have either stabilised or significantly increased.

Threats to longfin populations have been clearly identified in many other freshwater management studies. The 2015 Plenary Report states:

*Other sources of mortality, such as culling (primarily 1930s to 1950s) and habitat alteration (historical and current) have also reduced abundance prior to the CPUE series.*

The principal threat is hydro-electric dam development, which destroyed one third of longfin eel habitat (Graynoth 2008). Other well-documented threats include other migration barriers such as culverts, stop gates etc, water quality deterioration, water abstraction, wetland drainage and habitat destruction from in-river works (especially flood works including willow removal). All of these factors have considerably more influence on longfin eel populations than commercial harvest, and it is specious for the Discussion Paper to imply that any improvement could possibly be gained by manipulating ANG stocks.

Any decline in longfin eel populations over the last 40 years is therefore likely to have been caused by the exclusion from their habitat by hydro dams and habitat loss, rather than commercial harvesting. There are numerous studies describing the massive disruption of longfin habitat through land development, wetland drainage and water abstraction. This clarifies the real threats to longfin eels. The commercial eel fishery has correspondingly reduced as a result of these impacts; but to blame commercial fishing as a principal agent of decline is to wantonly misidentify the real threats to the fishery.

Misidentified threats are a triple tragedy for longfin eel management because:

1. The problem does not go away.
2. Someone or something else suffers for the sins of others (in this case, commercial fishermen).
3. The resources spent trying to fix the “problem” are wasted, and could have been spent elsewhere to better effect. We suggest that MPI stops wasting its scarce resources on such a pointless task as splitting ANG stocks, and focus on the alternatives we suggest in Section 10.

## **7. Option 1 has the potential to adversely affect catch efficiency**

Eel catches are greatly influenced by water temperature, flood events (increased catches) and drought conditions (reduced catches). Shortfins are opportunistic feeders and are easily caught in flood conditions. This allows fishers to take more shortfins (and fewer longfins) as part of their ANG quota when weather conditions allow.

The Discussion Paper briefly describes that more shortfins are taken in wetter fishing seasons, and more longfins in drier seasons. It states:

*From an utilisation perspective, commercial eel fishers currently benefit from having both species managed as one stock. This framework allows flexibility for fishers to switch between species, either:*

- *increasing the catch of the highest value species, as market demand changes; or*
- *targeting the species with the highest availability given prevailing environmental conditions.*

The Discussion Paper invites fishermen to provide information on the benefits of this. This submission shall do so, as below:

The effect of Option 1 on the cost-effectiveness on fishing can be measured through assessing the variability of the eel catch around the average catch over the 14 years of catch records since eels were introduced into the QMS. After discussions with commercial fishermen, it was determined that a change of plus or minus 25% of their average catch might be tolerable, but any greater change would have a significant adverse affect on their catch efficiency.

For each stock, using the 25% efficiency tolerance around the average catch, the number of years when the catch exceeded this 25% tolerance were counted. These are then expressed as a percentage of the total number of years fished, and this percentage is presented as the calculated reduction in catch efficiency if ANG stocks were separated. Results are presented in Table 1 and Table 2.

**Table 1:** Calculation of % reduced efficiency of **Shortfin Eel** catch if ANG separation occurs

ANG Area “less efficient” years	11	12	13	14	15	16
	8 of 16	9 of 16	0 of 15	10 of 16	7 of 16	11 of 16
<b>% years less efficient</b>	<b>50%</b>	<b>56%</b>	<b>0</b>	<b>63%</b>	<b>44%</b>	<b>69%</b>

**Table 2:** Calculation of % reduced efficiency of **Longfin Eel** catch if ANG separation occurs

ANG Area “less efficient” years	11	12	13	14	15	16
	10 of 16	10 of 16	N/A	9 of 16	3 of 16	5 of 16
<b>% years less efficient</b>	<b>63%</b>	<b>63%</b>	<b>N/A</b>	<b>56%</b>	<b>19%</b>	<b>31%</b>

**NB:** For ANG 13 longfin, precise records are not available, as commercial catches for most years are listed as “<1 tonne”.

The full analysis is presented as a spreadsheet attachment to this submission.

It can be seen that for all stocks except ANG 13 Shortfin (Lake Ellesmere), if Option 1 was implemented on the basis of the average catch, the catch efficiency is reduced. For most these stocks, except ANG 15 Longfin, the catch efficiency is severely reduced (>30%). These reduced efficiencies are the result of reducing the ability to vary the shortfin/longfin catch in a fishery where relative SFE/LFE catch rates are highly dependent on weather conditions.

Option 1 will therefore greatly increase costs to commercial fishermen, reduce catch rates and adversely affect our ability to fulfil overseas eel markets. There is anecdotal evidence that these adverse effects on catch-efficiency occur in the North Island eel fishery, despite it being a year-round fishery (as opposed to a summer-only fishery in the South Island).

## **8. Adverse effects on CPUE dataset**

ANG separation will cause significant problems with continuity of monitoring CPUE catch data. This is because all fishermen would need to considerably change their behaviour to accommodate the changes to their quota/ACE holdings. It is likely that we will end up with similar comparability problems with the CPUE data that has occurred between pre-and post-QMS data. Evidence of this comes from the 2015 Eel Plenary Report, which states:

*Given the potential negative impact of North Island regulation changes on CPUE as an index of abundance ....*

The Peer Review Panel Report also recognised the inability to compare pre- and post-QMS abundance using CPUE, and this is mirrored in the Discussion Paper.

The CPUE dataset represents a significant capital asset for commercial ANG fishermen. The North Island example demonstrates that separation of stocks would destroy the utility value of this capital asset. If this occurred, SIEIA would seek compensation from MPI for the damage to their capital asset, the CPUE dataset.

## **9. Deficiencies in fulfilling the planning requirements of the Fisheries Act**

For Option 1 to proceed, under section 25B of the Fisheries Act the Minister is required to approve a Plan that provides for the manner in which quota shares are to be apportioned after the alteration. The Discussion Paper provides no mechanism for calculating the proportion of SFE and LFE in each ANG area, but “...invites submissions on the manner in which quota shares could be apportioned in the event the stocks are separated.”

Calculating the proportion of LFE and SFE quota from each ANG stock is critical to this whole exercise. The Discussion Paper provides zero information on how this might be done, what factors might apply to this calculation and/or how the separation would assist with future sustainable management of eel stocks. The Discussion Paper also fails to recognise the conclusions in the 2015 Plenary Report that “it is difficult to infer stock status from recent abundance trends.” Accordingly, the Discussion Paper fails to recognise that the necessary information is not available for the development of a Plan in accordance with S 25B of the Fisheries Act.

Without this information, it is not possible for SIEIA to provide a definitive or informed submission on how Option 1 might actually work, other than to reiterate that it probably wouldn't. Nor is it possible for SIEIA to speculate on *the manner in which quota shares could be apportioned in the event the stocks are separated*. Inviting submissions on this crucial aspect of the Plan is not sufficient to fulfil the requirements of S 25B. Hence, this entire process is legally deficient.

## **10. Other measures are available which would provide for greater sustainability of the LFE fishery, and improve customary expectations.**

The Fisheries Act S 25B (b) requires the Minister to **consider alternatives** before altering any QMA under S 25 (1). The Discussion Paper does not adequately consider the many alternatives which are available to the Minister and other Crown agencies, and supported by SIEIA, which would have far greater positive effects on longfin eel sustainability than the separation of ANG stocks. These include:

(a) Reduce the maximum LFE size limit below 4 kg. This option has previously been put by SIEIA to MPI but it does not feature in the Discussion Paper. This option would improve spawner escapement, and rapidly increase the number and size of eels available for customary and recreational fishers. Indeed, it is probably the quickest way to increase the number of larger eels in commercially fished areas. Information on the success of such a measure would be readily available from the SIEIA datalogging records, as happens now with our records of >4kg eels released from fished areas. Approximately 1000 >4kg eels are released from commercial fishing nets every year in the South Island.

(b) Voluntary shelving of ACE (as currently occurs with paua fishermen in some areas). This already occurs in an informal way but it is not recorded, so no credit is given to those who practice it.

(c) A closer look is needed at the 4 T minimum holding, and making provision for unders and overs. The variable nature of the shortfin-longfin catch, because of weather conditions, markets etc; means the system must retain the flexibility for efficient harvest.

(d) Commercial eel fishermen are closely involved with hydro power companies in transferring small eels upstream to better habitats, and allowing migrating longfins to escape to sea to breed. In the Clutha catchment, Contact Energy Ltd and commercial eel fishermen have agreed to undertake upstream transfer of small eels to re-establish an eel fishery upstream of the Clutha hydro dams. In the Waiau catchment (Southland), Meridian Energy Ltd has engaged commercial eel fishermen to catch and transfer downstream migrating longfin eels. Over 5400 mature longfin female eels were released last year. At an average of 80 million ova per female, this means that an additional 432,000,000,000 (432 billion) ova were added to the longfin recruitment pool as a result of this initiative.

(e) There are other ways to counter the potential for ANG being fully caught as all one species, although this does not happen anywhere except ANG 13, which is a shortfin-only fishery. For example, SIEIA already has a policy that at least 20% of all eels caught in each QMA should be shortfins. SIEIA could also agree to voluntary restrictions on the longfin take if there were local sustainability problems, or the landed-price of longfin eels exceeded shortfin. However, shortfins consistently fetch better prices than longfin, so this is unlikely to ever be necessary.

These measures have vastly greater benefits to longfin eel populations than Option 1. The fact that they all closely involve the commercial fishing fraternity demonstrates that we are fully committed to the ongoing sustainability of longfin fisheries. Furthermore, any measures (such as Option 1) which reduce the viability of the commercial fishery will also adversely affect our ability to support these enhancements to the longfin fishery, thereby obstructing the Minister's stated purpose of improving longfin sustainability, and acting in contravention of the purpose of the Fisheries Act to maintain and enhance utilisation of fisheries resources.

**If a hearing is to be held, SIEIA would like to attend and be heard in support of this submission.**

Yours faithfully



pp: Victor Thompson  
Chairman – South Island Eel Industry Association Inc

Submitter: Eel Enhancement Company

12 February 2016

Duncan Petrie, Senior Analyst

Inshore Fisheries Management Ministry for Primary Industries, PO Box 2526

WELLINGTON 6140.  
Duncan.Petrie@mpi.govt.nz

FMSubmissions@mpi.govt.nz

Dear Duncan

**Re: Proposed Separation of South Island Eel Fishery, MPI Paper 2016/01**

Thank you for the opportunity to submit on the important issue of South Island Eel (*Anguilla*) management. Our Eel Enhancement Company Limited (EECo) welcomes this opportunity to submit, and although we do not have a direct interest, we seek to offer constructive comment and raise concerns where issues may impinge on North Island management. Our Appendix One provides detail of our EECo objectives and perspectives.

Our principal submission is that we have carefully read the Discussion Paper and the Submission on it of SIEIA and in conclusion, **EECo supports the Submission of SIEIA**. SIEIA soundly reviews the issues and provides commentary and points and in particular most pressingly they raise their concern re the legality of the change/s proposed. It is vitally important that the Minister moves with all care and robust processes along the path of the strict legal tests for such a s25B change. Such a change must be “necessary to ensure sustainability” and the discussion paper does not fully/clearly, nor adequately even, enunciate the case for that. The strict legal tests and requirements are further made more pressing in this case by the system having already acknowledged that ANG is both on Schedules 2 & 3.

The remainder of our points are in the nature of (hopefully) helpful commentary.

**Comment #1:** It is now the situation in the North Island that fishermen are encountering much higher populations of very large LFE and also in general the size frequency of LFE has increased/improved markedly. Also, the area of fishery that had previously been targeted for LFE has reduced very much, to the extent that LFE are actively avoided.

What has become very apparent in the North Island, both from the perspective of a fisherman and quota owner, is the importance of getting the TACC's right when managing a mixed fishery. We are getting serious imbalances of stock in waters that are mixed species. Also this is compounded by fishermen avoiding targeting and/or landing LFE due to their ongoing very low prices and buyer demand. Because of the predatory nature of large LFE they are taking over in mixed species waters by simply hassling or eating all the Short-fin. This is not helped by the LFE catches being so low. The TAC's were set in 2004 and re-set in 2007 to expedite the 2

rebuild of LFE stocks. That rebuild is now well underway and that should give all considerable confidence in LFE's stock status, and to the degree that LFE TACC's should be reassessed.

**Comment # 2:** The one issue we raise with the SIEIA submission, which flows on from the nature of our first comment (# 1), is that EECO is absolutely and entirely opposed to any lowering of the Maximum size limit (4kg) in the North Island. It would be a bad management measure in the North Island in all respects.

**Comment # 3:** The MPI discussion paper, as SIEIA notes, is very light on what might be the approach to TACC setting in the South Island if ANG is split into LFE & SFE. From our North Island experience it is vital that the TACC's are set by a transparent and robust science-based process.

**Comment # 4:** If the stock separation proceeds, the 4T minimum ACE holding may or even will lead to considerable practical problems with the establishment of over-lapping and also possibly smaller TACC's. We suggest this requires serious consideration. From our North Island experience we do not have such a rule, and its absence has created no problems and we do not want such a measure.

Please get in touch anytime, to discuss any of these submissions/comments, thank you.

Kindest regards

**Mike**

Mike Holmes

Chairman, EECO

Submitter: Parliamentary Commissioner for the Environment (PCE)

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Wellington 6143

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9 February 2016

Hon. Nathan Guy  
Minister for Primary Industries  
Parliament Buildings  
Wellington

Dear Minister

### **Proposed Separation of South Island Eel Stocks**

I am heartened that the Government is continuing to respond to my 2013 report on longfin eels. In my 2014 update report, I acknowledged the establishment of an independent review panel, and the announcement of a package of proposed measures aimed at improving the sustainability of the longfin eel population.

I am writing in response to the MPI discussion paper on one of these proposed measures – the separation of the management of longfin and shortfin eels in the South Island. I strongly support the proposal – option one in the discussion paper. This will allow for changes to the total allowable catch for longfins in the South Island as well as the North Island.



I note that there will be further consultation regarding a review catch limits and will be following that process closely. It is vital that this review be undertaken with special regard to the unique characteristics of this vulnerable species.

The New Zealand longfin eel is indeed an extraordinary creature and it is imperative we do all we can to ensure its survival.

Yours sincerely,

Dr Jan Wright  
Parliamentary Commissioner for the Environment

**Submitter: Working Water Trust**

Dear Duncan,

Thank you for your correspondence. Please see below our submission on MPI's proposed separation of South Island eel stocks.

**Working Waters Trust's Submission on MPI'S Proposed Separation of South Island Eel Stocks**

Working Waters Trust is a charitable trust dedicated to celebrating the wonders of New Zealand's native freshwater fish and restoring and protecting their habitats. Our projects are spread across numerous catchments in Canterbury, Otago and Southland. We work alongside runanga, private landowners, councils, government departments and school and community groups on various freshwater restoration/rehabilitation projects which benefit native freshwater fish, including longfin and shortfin eel.

We support and applaud the efforts of MPI in your preferred option of splitting longfin and shortfin South Island eel stocks in response to the Parliamentary Commissioner for the Environment's report.

We appreciate the need for our native freshwater fish species to be managed in a way that ensures they maintain viable populations for future generations. As you have clearly stated in your discussion document, longfin and shortfin eels have entirely different habitat requirements and biological and life history characteristics. We can appreciate that in the past, information was limited regarding New Zealand eels and that bundling the two species into one quota may have seemed appropriate. Today however, freshwater and fisheries scientists have enough information about these two very distinct and unique species, that to continue to lump them together in the same management programme would be simply archaic.

We applaud the Ministry's move to enact this long overdue change and although we agree with the proposed implementation dates of Option 1 - the 1 October 2016 for Ang11,12,14,15,16, and 1 February 2017 for Ang 13, due to the seriousness of the decline of the longfin population (Goodman et al, 2013) we strongly encourage that this change takes effect with urgency.

Thank you for contacting us as stakeholders and please continue to do so when further issues arise involving New Zealand's native freshwater fish.

Kind regards,

Lan Pham (Director, Working Waters Trust)

## Submitter: Environment Canterbury

Page 1 of 2

**THE BIODIVERSITY AND ECOSYSTEM HEALTH WORKING GROUP  
SUBMISSION  
PROPOSED SEPARATION OF SOUTH ISLAND EEL STOCKS, FEBRUARY 2016  
12 February 2016**

1. The Biodiversity and Ecosystem Health Working Group (the Working Group) is a working group of the Regional Water Management Committee of Canterbury Regional Council, functioning under the non-statutory Canterbury Water Management Strategy framework.
2. The Working Group thanks the Ministry for Primary Industries for the opportunity to make a submission on the Proposed Separation of South Island Eel Stocks, January 2016.
3. The Canterbury Water Management Strategy was signed by the Canterbury Mayoral Forum in 2009. It is a partnership between Environment Canterbury, Canterbury's city and district councils, Ngāi Tahu, and water stakeholders.
4. There are 10 water management zones throughout Canterbury – each has a committee made up of community and rūnanga appointees as well as regional and local council representatives.
5. The following submission is offered on the basis of Canterbury Regional Council's roles, functions and responsibilities under the Resource Management Act 1991 and the Local Government Act 2002. We also note our formal obligations and policies under the *Canterbury Regional Policy Statement 2013* (Chapters 9 and 10 cover ecosystems and indigenous biodiversity and beds of rivers and lakes and their riparian zones, respectively).

### ***Background:***

6. In June 2015, the Regional Water Management Committee recommended: "That the Environment Canterbury Commissioners lead a process to develop a sustainable management approach for longfin eel/tuna in Canterbury by October 2015 and is jointly agreed upon by Environment Canterbury, Papatipu Rūnanga, MPI, commercial eel fishermen, local communities, etc."
7. The Working Group has been recently been acting to explore and promote the sustainable management of longfin eel in Canterbury with the aim of facilitating increased species numbers throughout Canterbury.
8. The Working Group has since hosted a series of workshops to inform this approach. These workshops have included presentations from commercial eel fishers, ngā rūnanga from three case-study catchments, the Department of Conservation, the Hurunui-Waiāhu, Selwyn-Waihora and Upper Waitaki Zone Committees, NIWA, Fish and Game, Forest and Bird, Meridian Energy, and the Hurunui District Council.
9. The Working Group provided a submission to the Fisheries Management System Review 2015 summarising information gathered by the Working Group to date to help inform the review with regards to the management of longfin eel in Canterbury.

**Submission Points:**

10. The Working Group supports the progression of a package of management measures to increase the longfin eel population and improve the long-term sustainability of longfin eels.
11. The Working Group supports the preferred **Option 1** with a view to providing the best framework to promote the long-term sustainability of longfin eels.

**Recommendation:**

12. The Working Group recommends that the Ministry for Primary Industries: a. Adopts **Option 1** and separates eel stocks
- b. Continues the progression of the package of management measures to increase the longfin eel population and improve the long-term sustainability of longfin eels.

**Conclusion:**

13. The Working Group is pleased to offer this submission on the Proposed Separation of South Island Eel Stocks, January 2016. We look forward to further engagement with the Ministry for Primary Industries as the review is finalised and the package of management measures is progressed.
14. For further queries please contact:

Steve Lowndes, Biodiversity and Ecosystem Health Working Group  
Chairperson

Email: [lowmo@xtra.co.nz](mailto:lowmo@xtra.co.nz)

**Submitter: Forest and Bird**

**Submission by the Royal Forest and Bird Protection Society of New Zealand Inc.  
(Forest and Bird)**

**On the proposal by MPI**

**To separate the management of longfin and shortfin eel in the South Island.**

1. The Parliamentary Commissioner for the Environment (Report on longfin eel management (PCE 2013<sup>9</sup>) contained a recommendation for the MPI that is directly relevant to this consultation and the MPI's management of the longfin eels:

On a pathway to extinction?

An investigation into the status and management of the longfin eel

PCE Report December 2014

*"That MPI should suspend the commercial catch of longfin eels until longfin eel stocks are shown to have recovered."*

2. In an updated report (PCE 2014<sup>10</sup>), the PCE added that,

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<sup>9</sup> On a pathway to extinction? An investigation into the status and management of the longfin eel, PCE Report April 2013

*“Under law, the Minister must take a cautious approach to the management of longfin eels. In the Commissioner’s view, this requires the suspension of commercial fishing until it is clear that a recovery is happening and harvest can sustainably resume.”*

3. Forest and Bird supports the PCE’s view that there should not be any commercial exploitation as long as the longfin eel remains a species classified as ‘at risk/declining’ and before populations have demonstrably recovered.

4. Although catch limits are not strictly the subject of this consultation, Forest and Bird notes that a separate longfin eel management regime is established, MPI will provide further opportunity for public comment about catch limits for each species. Forest and Bird would welcome that opportunity.

5. MPI has put forward 2 options:

**Option 1:** (MPI’s preferred option) Manage South Island longfin and shortfin eels separately as 6 shortfin (SFE 11-16) and 6 longfin (LFE 11-16) stocks; and

**Option 2:** Continue to manage South Island longfin and shortfin eels as 6 combined stocks (ANG 11-16).

6. The MPI has decided to review rather than suspend catch limits for longfin eel. The corollary to this is MPI’s view that managing longfin and shortfin eels in the South Island as separate stocks (Option 1) is necessary to ensure the sustainability of the South Island freshwater eel fisheries:

7. Forest and Bird agrees that In order to manage catch limits, MPI needs to be able to separate longfin and shortfin eel management.

8. Notwithstanding our view that there should not be any commercial fishing of longfin eel, Forest and Bird supports Option 1 as a step in the right direction

9. Separating longfin and shortfin eel management will enable each of the two species to be managed on its merits. This is appropriate given that each has distinctive biological characteristics, life-cycle, habitat preference and conservation status.

10. The MPI consultation document notes:

*In general, the longfin eel is characterised as more vulnerable to harvest pressures than the shortfin eel because they are slower growing, mature much later, live longer and do not migrate for spawning until later in life.*

11. Separating the management of the two species will also bring their management into line with the North Island, where that separation has been useful to specifically protect longfin eel in some catchments (pers. comm. Dr Don Jellyman 2016)

12. In conclusion, Forest and Bird remains concerned that the MPI has not followed the PCE’s recommendation to halt all commercial fishing of longfin eel until stocks are definitively shown to have recovered.

13. However, **Forest and Bird supports Option 1** as a positive step towards the conservation management of longfin eel as a distinct and at-risk species.

Chris Todd

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<sup>10</sup> Update Report On a pathway to extinction? An investigation into the status and management of the longfin eel PCE Report December 2014

Group Manager Conservation and Volunteers,  
Forest and Bird  
February 11<sup>th</sup> 2016

**Address for Service:**

Forest and Bird  
PO Box 631  
Wellington 6140  
c.todd@forestandbird.org.nz  
.”

Submitter: Ciaran Campbell

Attention: Duncan Petrie – Senior Analyst  
Inshore Fisheries Management  
Ministry for Primary Industries  
PO Box 2526  
Wellington 6140.

11th February 2016

Dear Mr Petrie,

I, Ciaran Campbell, wish to independently submit feedback on the "Proposed separation of South Island eel stocks" to the Ministry for Primary Industries as a citizen of New Zealand.

In **SUPPORT** of **OPTION 1**, there is merit for recognising the different pressures affecting the two species, and managing commercial fisheries for them separately. Significant pressures include habitat availability (quantity), habitat quality, predation, competition and harvesting.

Habitat quantity has changed drastically for both species with the historic draining of the wetland systems of New Zealand. In addition, longfin eel habitat has been severely reduced by the damming of our largest and several of our smaller catchments. Trap and transfer of elvers allows a small percentage of the longfin eel population to utilise available habitat upstream of dams, however it is rare for these individuals to contribute to the sustainable breeding population due to fish passage complications.

Water quality in New Zealand is at a documented all time low. Urban population booms, industrial expansion, intensified farming practices, deforestation and exponential fertiliser application rates have turned pristine waterways into highly sedimented eutrophic sewage systems. Our waterways no longer have overhanging vegetation acting as fish cover and maintaining a cooler water temperature. With no shading and increased nutrient loading they support dense and rapid growth of invasive macrophytic weeds, and algal blooms are not infrequent. The vegetative loading of our waterways increases sedimentation processes, preventing flow of water, encouraging pooling of water, and rapidly removing the natural rhythm of dissolved oxygen supporting our freshwater vertebrate and invertebrate fauna.

Predation of eels is not often discussed in New Zealand. Longfin eels evolved in New Zealand as the apex predator of our freshwater fishes. The introduction of salmonids as sports fishes has likely had impacts on the survival rates of elvers (who have evolved to detect larger eels, and large bodied galaxias fishes) that are unable to be measured. Longfin elvers are unlikely to have had sufficient evolutionary time given their relatively long lifecycle to have

appropriate responses to the presence of salmonid fishes introduced to NZ waters in the last ~150yrs.

Interspecific competition between shortfin eels, longfin eels and salmonids for recognition as the apex predator of specific niches, particularly with longfin eels being the slowest growing and greatest affected by habitat exclusion (above), has likely altered the behaviour dynamics of individual longfin eels within a reach.

**I am firmly of the opinion that none of the above pressures that severely impact the longfin eel population of New Zealand (in addition to affecting the shortfin eel population) has any current modern-day significance when compared with commercial fishing. Commercial eel fishing has devastating and irreversible impacts on the viable breeding population of eels in New Zealand.** Commercial fishing of eels is an incredibly short-sighted business scheme. The domestic market is almost non-existent and the international market only exists in countries that have previously ruined their own eel stocks through the same biotic and abiotic pressures we are imposing in New Zealand.

From one location in ANG15 they removed 85 tonnes of eel during the first year of harvest. Now it is no longer harvested as fisherman struggle to get 3 tonnes for similar effort. There is no thriving population of adult longfin eels to depend on in the future, whether for fisheries values or not. By separating the ANG areas of the South Island into LFE and SFE, as proposed by MPI, appropriate population and quota measures can be investigated by independent research bodies and a likely outcome could be a benefit from ceasing all longfin eel fishery activities. Longfin eel are endemic and we understand their lifecycle better than ever before. New Zealand must protect the taonga/treasures we have, not find easy ways to exploit them for short-term gain.

I am **OPPOSED** to **OPTION 2**. The current management for commercial fisheries impacting populations of longfin and shortfin eels in New Zealand needs an overhaul, and it is a small step in the right direction to separate the ANG areas of the South Island into LFE and SFE areas and manage the fisheries of these two species separately.

Thank you for the opportunity to provide feedback.

Ciaran Campbell  
1121 Oropi Road, RD3, Tauranga.

### Submitter: Rosemary Clucas

If longfin eel are to be independently managed then the quota need to be set and managed separately from that of shortfin eel. The longfin eel is an indigenous species assessed with the Threat Status of 'at risk and declining'. They are a characteristic species of our waterways and their decline needs not only to be halted but also in many places reversed. For such an important species the 'precautionary approach' is needed to ensure they are there for everyone's benefit and as kaitiaki of te mana o te wai. Here I interpret te mana o te wai in a spiritual dimension but also recognising their role in trophic effects and ecological structure.

My concern is that this proposal signals that Westland Ang 16 and Ang 15 Otago Southland longfin eel have not been in decline and will not be under review. These are the largest and most significant

longfin fisheries by a longshot. There is consistent evidence of demographic problems to the southland/otago longfin eel stocks that includes low numbers of females and poor female escapement from the fishery. In addition, recruitment as measured via elver recruitment is highly variable and measured at only a few dams sites, with data having being inconsistent (incomplete data sets at some sites). Robust independent data and analysis of CPUE is needed to validate industry data before CPUE on its own. This is an opportunity to act in good faith to all New Zealanders. Longfin eel are an iconic species and also a taonga species.

Concern in recent years reflects the changing attitude of the New Zealand public with regard to these longlived kaitiaki of our rivers.

This concern and greater interest needs to be recognised and given serious consideration when determining the future abundance and size of longfin in our waterways.

I support the separation of longfin and shortfin eel stocks and look forward to meaningful adjustment of the quota.

Rosemary Clucas  
120 Pine Hill Rd  
Dunedin

### Submitter: Stella McQueen

Duncan,

Thank you for drawing my attention to MPI's proposed separation of South Island eel stocks. Please find my submission below.

I am a freshwater ecologist specialised on New Zealand's native freshwater fishes. I have published two books, 'A Photographic Guide to the Freshwater Fishes of New Zealand' and 'The New Zealand Native Freshwater Aquarium'. I work as a freelance fish expert, mainly employed by the Department of Conservation and also by environmental consultancies. I am also very active in public education about the wonders of native fishes and the threats they face, especially through my Facebook page 'New Zealand Native Fish' and on Radio New Zealand National.

I wholeheartedly support and applaud MPI in their preferred option of splitting the South Island longfin and shortfin eel stocks, in response to the report by the Parliamentary Commissioner for the Environment.

Responsible fisheries recognise the need to be sustainable in the long term. To be sustainable requires in-depth knowledge of the biology and ecology of the target species. Knowledge about the basic biology of many of our native fish species has been very patchy until recently, including knowledge of the longfin and shortfin eels.

Now these two species are much better understood. Despite broad physical similarities, their ecology, habitat, adult size and spawning migrations are very different. This knowledge warrants separating the quota for the two species so that the impacts of the fishery can be monitored and managed in a sustainable manner.

Furthermore, in light of concerns in recent years over the decline of longfin eels, separating the South Island eel stocks allows the population and harvest of each species to be monitored with greater clarity, and it should be considered a matter of urgency.

The historical joint management of the two species is akin to managing cows and sheep as if they were identical. This system made sense when much less was known about the two native

eel species. However it is now outdated and MPI's proposed separation is the next logical and responsible step forward to a properly sustainable fishery.

Thank you for contacting me as a stakeholder and please continue to do so in the future with regards to New Zealand's native freshwater fish.

Kind regards,

Stella McQueen

### Submitter: Meridian Energy

Meridian also works closely with iwi-related interests and we are reassured to see that wide consultation by the Ministry with Ngāi Tahu interests has already occurred.

We look forward to remaining an interested party in the proposal and consultation process. Please contact me should you have any queries.

Yours sincerely

Dave Herrick  
Sustainability and Environment Team

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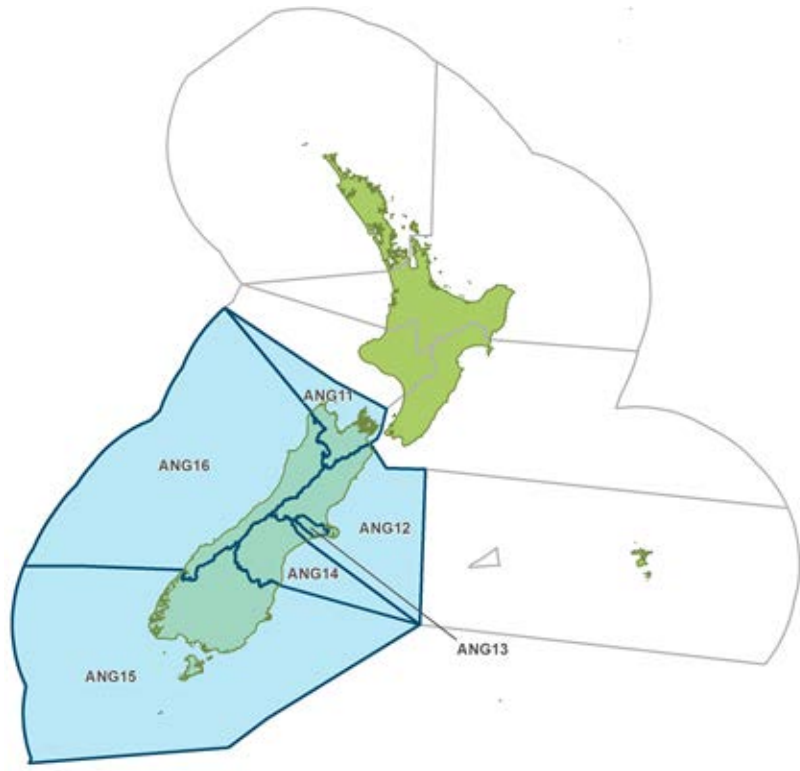
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## 11 Appendix 3 – Stock Separation Plan

### 11.1 BOUNDARIES OF THE PROPOSED QUOTA MANAGEMENT AREAS.

MPI proposes that the boundaries for the separate longfin and shortfin QMAs will remain the same as they are under the current combined stocks (ANG 11-16) (Figure 1). For example, if separated the QMA boundary for LFE 12 and SFE 12 will be the same as the current ANG 12 (Figure 2).



**Figure 1: The six South Island Quota Management Areas (QMAs) for freshwater eels (shortfin and longfin).**



**Figure 2: The twelve proposed South Island QMAs for shortfin (SFE) and longfin (LFE) eels under Option 1.**

## **11.2 SPECIES THAT COMPRISE THE STOCK OR STOCKS AFTER THE ALTERATION.**

The species will be shortfin eel *Anguilla australis* (SFE 11-16) and longfin eel *Anguilla dieffenbachii* (LFE 11-16).

## **11.3 MANNER IN WHICH QUOTA SHARES ARE TO BE APPORTIONED AFTER THE ALTERATION**

MPI proposes that stock separation take effect from 1 October 2016 for all stocks except ANF 13, which has a February to January fishing year therefore it will commence on 1 February 2017.

On the close of the day prior to the date on which the amalgamation takes place (i.e. 1 October 2016), all existing ANG quota shares will be cancelled in accordance with section 26(4) of the Act. New quota shares will be allocated on and from 1 October 2016 for the new LFE and SFE stocks (except for LFE and SFE 13, which are managed under a 1 February fishing year).

Existing shares within each ANG QMA would be allocated pro rata to the new LFE and SFE QMAs. That is, if a quota holder holds 20% of quota shares in ANG 11 he or she would receive 20% of quota shares in each of SFE 11 and LFE 11.