

# FLATFISH (FLA 1) – FINAL ADVICE

## Initial Proposal

- 1 The Ministry of Fisheries (MFish) proposed the following management measures for the FLA 1 fishery for the 2005-06 fishing year:

**Table 1: Proposed TAC (tonnes), TACC (tonnes) and allowances for FLA 1 for the 2005-06 fishing year**

	<b>Proposed TAC (tonnes)</b>	<b>Customary allowance (tonnes)</b>	<b>Recreational allowance (tonnes)</b>	<b>Other sources of fishing-related mortality (tonnes)</b>	<b>Proposed TACC (tonnes)</b>
<b>Option 1</b> (TAC based on recent catch)	1 382	270	270	27	815
<b>Option 2</b> (TAC based on recent catch)	1 307	270	270	27	740

- 2 The current total allowable commercial catch (TACC) is 1 187 tonnes. A total allowable catch (TAC) and other allowances have not yet been set for FLA 1. Both options proposed to base the TAC, TACC, and allowances on recent catches.

## Submissions

- 3 MFish received submissions on the management proposals for FLA 1 from:
- **Aotearoa Fisheries Limited (AFL)**
  - **John Fenwick**
  - **Kaipara Harbour Sustainable Fisheries Management Study Group** (the Kaipara study group)
  - **Hilton Leith**
  - **Muriwai Sport Fishing Club Inc.**
  - **New Zealand Recreational Fishing Council (NZRFC)**
  - **New Zealand Seafood Industry Council Ltd (SeaFIC)**
  - **Northern Inshore Fisheries Management Company** (Northern Inshore)
  - **option4**
  - **Royal Forest and Bird Protection Society and Environment and Conservation Organisations of New Zealand** (Forest & Bird and ECO)

- **Te Runanga A Iwi O Ngapuhi** (Ngapuhi)<sup>1</sup>
- **Sanford Limited** (Sanford)
- **Te Ohu Kai Moana** (Te Ohu)
- **Peter Yardley**

## Key Issues

4 The key issues submitters commented on were:

- Problem definition;
- Available sources of information to support the problem definition;
- Tools to manage the problem; and
- Allocation of the TAC.

## Basis for Management Options

### *Problem definition*

#### *Submissions*

- 5 **SeaFIC, Northern Inshore, Sanford, AFL, and Te Ohu** see no issues for which sustainability measures (specifically TAC and TACC reductions) are required in FLA 1. SeaFIC and Northern Inshore consider that MFish is using sustainability measures to attempt to address utilisation issues. These groups allege anecdotal and local concerns about sustainability and, especially, utilisation have triggered the review of catch limits for FLA 1.
- 6 SeaFIC, Northern Inshore, and Sanford also argue the initial position paper did not provide any analysis about how a TAC reduction will address local access or depletion issues. SeaFIC considers use of TAC reductions as “a *de facto* management tool to manage local access issues, when alternative management tools are available” is not justifiable.<sup>2</sup>
- 7 SeaFIC and Northern Inshore submit the initial position paper failed to provide you with impartial and comprehensive advice because it did not include the *status quo* as a valid management option, even though information supporting a sustainability concern is not compelling.

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<sup>1</sup> Ngapuhi’s tribal lands, shores and waters are in the mid-North region, including Taumarere (Bay of Islands), through to Whangarei, from the Hokianga down the west coast towards Dargaville, and the lands in between those coasts.

<sup>2</sup> Seafood Industry Council submission on review of sustainability measures and other management controls for the 2005-06 fishing year – initial position paper of 30 June 2005. 8 August 2005. Page 11.

- 8 The **Kaipara study group** considers MFish management of FLA 1 needs to address the following issues that it highlights in its strategy document<sup>3</sup>:
- Localised depletion of flounder in certain areas;
  - Increased fishing effort in some areas to maintain catch levels;
  - Spatial conflict; and
  - Inefficient fishing practices, such as high levels of bycatch of juvenile and non-target species.
- 9 **NZRFC** and **option4** submit that the west coast flounder stock in particular has been allowed to become depleted because an excessive TACC was allocated when it was introduced into the quota management system. These groups submit that a declining trend is evident in major fisheries like the Kaipara Harbour. The decline is considered more substantial than a 'localised' depletion, because of the size of the Kaipara Harbour.
- 10 **Ngapuhi** submits that intensive fishing effort has caused serious conflict between commercial and non-commercial fishing interests. The QMS is argued to have failed to deliver fisheries management for flounder that meets the social and cultural expectations of many coastal communities. From Ngapuhi's perspective, the QMA is far too large for effective management of the flounder fishery on a local scale.
- 11 **Forest & Bird** and **ECO** welcome the review of TACs and TACCs in fisheries where they consider the historic catch limit was set out of line with average catches in the fishery. They note that in only two of the last twenty years has the catch exceeded 1000 tonnes, and the average catch has been much less than that. Forest & Bird and ECO consider that the quota management system has effectively failed to manage FLA 1, resulting in community and fisher concerns.
- 12 **Peter Yardley** and **John Fenwick** consider that various fishing practices now used increase the pressure on flounder stocks, particularly in harbours. Mr Yardley submits that flatfish in FLA 1 are smaller than in the past, and there are shorter seasonal runs of fish.
- 13 John Fenwick submits that the management strategy in the past has been to set the catch limit for flounder at a very high level. However, Mr Fenwick argues that the very high catch limit does not take into account that there is a limit to the amount of fish available to be taken in any given area. In popular fishing areas, a very high proportion of the available fish is harvested.
- 14 Mr Fenwick is concerned that the high level of the TACC means that the only control on commercial fishing for flounder is attrition (fishers leaving the industry because they can no longer make a living). Particularly in heavily fished areas, fishers therefore have to increase fishing effort in an attempt to maintain normal catches. This may involve the use of additional gear, or wasteful methods such as using very

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<sup>3</sup> The Kaipara study group has produced a strategy document over a three-year period, with substantial input from commercial, customary, and recreational/community sectors in the Kaipara area. *'Fishing for the future: a strategy for the fisheries of the Kaipara Harbour'* forms part of the Kaipara study group's submission on the initial position paper.

long net lengths, allowing nets to stall on mudflats, or long soakage times. Mr Fenwick notes that North Island harbour fisheries are relatively small areas that are heavily fished, in close proximity to many other user groups.

### *MFish discussion*

15 MFish notes that existing management of FLA 1 relies on a TACC well above current catches, to provide flexibility for fishers to take flatfish in larger numbers in years of high abundance. This strategy has both risks and benefits. Submitters have varying perceptions of both its risks and benefits.

16 Potential benefits of the current strategy include:

- There is a relatively low sustainability risk associated with the current TACC at a stock-wide level, because the main flounder species in FLA 1 have high productivity. Given favourable environmental conditions, flatfish biomass is likely to rebound even if fished to relatively low levels. Most commercial stakeholders emphasised this point.
- A minimum legal size allows most flatfish to spawn once before they can be legally harvested (although it may provide less protection for female yellow-belly flounder).
- Commercial fishers have flexibility to fish FLA in years of higher abundance without the Crown needing to adjust the TACC. Thus, this framework should provide well for commercial utilisation.

17 Potential risks associated with this strategy include:

- In years when recruitment is lower, the high TACC may allow localised depletion of flatfish in areas of high effort. Several commercial fishers submitted that this occurs.
- In years when recruitment is lower, commercial fishers may be able to preferentially harvest flatfish because of their greater fishing power. This may create conflict with other users of the resource, both customary and recreational. Various non-commercial submitters commented on conflict between sectors.
- There is evidence that recruitment and abundance have been declining. It is considered unlikely that commercial fishing has caused this decline. Nonetheless, you need to consider how productive a fishstock is when setting a TAC.
- The minimum legal size limit probably gives considerable protection to immature sand flounder and male yellow-belly flounder. It probably gives much less protection to female yellow-belly flounder. One discussion concluded that most female yellow-belly flounder would become sexually mature before they are caught, unless fishing pressure is extremely heavy.<sup>4</sup> This suggests that management cannot rely solely on the minimum legal size limit to protect flatfish stocks.

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<sup>4</sup> Colman, J.A. (1972) Size at first maturity of two species of flounders in the Hauraki Gulf, New Zealand. *New Zealand Journal of Marine and Freshwater Research* 6(3): 240-245.

- A high TAC may not ensure sustainability of some flatfish species within the FLA grouping that are less productive or not so highly variable. Recent information indicates that of the two most common species, sand flounder may be substantially more variable than yellow-belly flounder.
  - The approach of having a very high TAC and TACC may not fit as well within the legislative framework of the Fisheries Act 1996, which provides several alternative ways of providing for the variability of fishstocks. The lower TAC options may be more consistent with obligations under s 13, and with the intent of the Act in managing variable stocks.
- 18 SeaFIC, Northern Inshore, and Sanford argue the initial position paper did not provide any analysis about how a TAC reduction will address local access or depletion issues. MFish notes the purpose of setting the TAC at a level that reduces the TACC would be to manage the risks of the current management strategy, as outlined above.
- 19 Setting a lower TAC is probably more likely to meet your obligations under s 13. The current TACC is set at the highest yield level, based on catches before 1986. In comparison, MSY is the greatest yield that can be sustainably attained over time. As such, it is more likely to be an average of high and low yields.
- 20 MFish accepts the TAC is unlikely to be the complete answer to resolving the sustainability of FLA 1 fisheries.
- 21 Some stakeholders have interpreted the initial position papers for flatfish, rig, and grey mullet as arising solely from the concerns of a group of stakeholders in the Kaipara Harbour. However, the review of FLA 1 took place in the context of a longer period in which MFish was aware that various communities throughout FLA 1 were concerned about the depletion of socially important inshore stocks including flounder. MFish further notes that FLA 1 has not been reviewed since its introduction to the quota management system in 1986. As such, it was considered timely to reassess its management in terms of the Fisheries Act 1996.
- 22 MFish agrees there is little evidence of a stock-wide sustainability problem caused by fishing in FLA 1. However, MFish notes that catch per unit effort analysis does indicate declining abundance and recruitment in the main fisheries. Regardless of whether these declines are caused by fishing, MFish considers it is a relevant factor when setting the TAC.
- 23 Concerns about localised depletion of flounder have been raised in many places within FLA 1, including both the east and west coasts. High levels of anecdotal concern are evident for fisheries in the Manukau and Kaipara Harbours. These areas account for most of the FLA 1 commercial take, along with the Firth of Thames. Other areas where MFish is aware of concerns about availability of flatfish include the Bay of Islands, Whangaroa Harbour, Whangarei Harbour, Firth of Thames, Raglan/Whaingaroa, and Kawhia and Aotea Harbours.
- 24 Public submissions on the proposed Auckland Fishery Management Plan as far back as 1989 highlighted concerns from harbour communities on both the west and east coast about the availability of fish in harbours. There were particular concerns about the availability of flounder, mullet, and snapper. MFish considers this is an issue of localised depletion, and may relate to both utilisation and overall sustainability.

- 25 Following on from this, a meeting with commercial set net fishers on the west coast in 1998 and 1999 noted that “The flounder and mullet fisheries appear to have declined over the last five years due to a combination of poor environmental conditions and increased fishing pressure.”<sup>5</sup> MFish would characterise this as a perceived problem with both sustainability and utilisation, which stakeholders related to the high level of the TACC.
- 26 The Kaipara study group has outlined what it sees as sustainability problems with flatfish in the Kaipara Harbour in its submission and earlier strategy document. MFish believes the anecdotal information about flatfish in the Kaipara relates to localised depletion and inter-sector conflict.
- 27 Likewise, MFish considers anecdotal information about declines of flatfish in the Manukau Harbour relates both to localised depletion and inter-sector conflict. Marae based around the Manukau Harbour have a long history of concerns about sustainability of the harbour. During the application process for establishing a taiapure in the Manukau Harbour, meetings of a Manukau Harbour Consultative group discussed the relative impacts of commercial and recreational fishing, as well as environmental factors, on fish including flounder in the Manukau Harbour. These meetings included tangata whenua, commercial and non-commercial fishers.
- 28 MFish considers the background to taiapure requests in other parts of FLA 1 is also related to long-standing community concern about the state of local fisheries (including flounder). Taiapure have been established at Waikare Inlet (Bay of Islands), and Kawhia/Aotea. There have been taiapure applications at other places in Northland, including Te Puna (Bay of Islands), Hokianga, and in the Manukau Harbour.
- 29 Some anecdotal information also suggests local depletion of flounder in other areas, such as the Firth of Thames/Hauraki Gulf, and Raglan. The *Hauraki Iwi Environmental Plan* (March 2004) outlines concerns about declines of important fishstocks including flounder in the Hauraki Gulf and Firth of Thames. Stakeholders at Raglan have developed a management plan for the harbour, because of concern about overfishing in the harbour. Flounder is one of the species of interest to this group.
- 30 Ministerials received from time to time over the last five years also highlight public concerns over sustainability of flounder stocks in FLA 1. MFish lacks specific information to substantiate these concerns.
- 31 MFish considers the concerns summarised here are probably more about utilisation – that is, access to flatfish for non-commercial fishers – than stock-wide sustainability problems caused by fishing. Nonetheless, declining abundance and recruitment would worsen these problems, so the problem is also related to overall sustainability. Where flatfish abundance may be declining, non-commercial fishers probably experience disproportionate declines in availability of fish.
- 32 Finally, MFish considers there is evidence of inter-sector conflicts in various parts of FLA 1. The Kaipara study group has documented conflicts between commercial

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<sup>5</sup> Summary of meeting: commercial set netting practices in harbours. November 10 1998.

fishers and marae based around the harbour; and between commercial fishers. MFish considers conflict between sectors is also reflected in the attempts of Manukau Harbour marae to implement customary fishing provisions. The submissions from recreational fishing organisations (option4, NZRFC, Muriwai Sport Fishing Club), environmental groups (Forest & Bird and ECO), iwi (Ngapuhi), and a community group (Kaipara study group) indicate that substantial tensions exist at present because of the high TACC.

## **Section 13/Section 14**

### *Submissions*

- 33 **Northern Inshore** considers that FLA 1 (and the other FLA stocks) should be managed under s 14 of the Fisheries Act 1996, rather than s 13. One of the possible reasons for including FLA 1 on the Third Schedule and managing it under s 14 of the Act is if it is not possible, because of the biological characteristics of the species, to estimate MSY.
- 34 Northern Inshore disputes MFish's assessment that it is possible to estimate MSY for FLA 1, on the grounds that:
- FLA 1 is a mixed species stock, and the MSY will change with the distribution of catch between the species;
  - Even within a species, separate biological stocks are likely to occur. Therefore, the MSY for FLA 1 will change depending on the split of catch between the stocks (because separate stocks of the same species will not necessarily have the same productivity);
  - Reliable sets of biomass indices to use in a stock assessment are not available. Further, overall catches of individual species are not known because some fishers report using the generic FLA code;
  - The two dominant species in FLA 1 appear to have different environmental drivers, and therefore will experience different population dynamics;
  - The MSY level for the two species is not necessarily the same relative to the unfished biomass for each species, even if they do have similar life histories and biological characteristics; and
  - The two species are not homogeneously distributed in either space or time. Sand flounder are more common on the east coast, where they are found in slightly deeper waters than yellow-bellied flounder.
- 35 Northern Inshore believes using s 14 of the Fisheries Act to manage FLA 1 would be a more effective way to achieve the purpose of the Act. Northern Inshore submits that setting a high TAC and TACC under s 14 would allow for utilisation, because fishers could take advantage of the inherent variability associated with flatfish abundance. TACCs would not be expected to be reached each year.
- 36 The main species in the FLA complex are noted to be short lived and fast growing, typically spawning only once or twice in their life cycle. Northern Inshore submits that existing measures already protect juvenile fish, so the fishery becomes by default

a “use it or lose it fishery.” As such, Northern Inshore sees no benefit to constraining catches, and submits that the TAC and TACC can be set at an elevated level.

- 37 Although FLA 1 is listed on Schedule Two of the Act, Northern Inshore submits that provision for an in-season increase to the TAC is not practical for FLA 1. Assessing stock status for a seasonal fishery of possible sub-populations is considered unrealistic and costs outweigh the benefits. Instead, s 14 is considered to provide for the setting of a TAC to provide flexibility for utilisation in years of increased abundance.

### *MFish discussion*

- 38 The scheme of the Fisheries Act 1996 is set up so that s 13 is the primary device for setting the TAC for a stock. Under s 13, you must have regard to the concept of MSY in setting the TAC. In considering the way and the rate at which a stock is moved towards or above MSY, you can take account of relevant social, cultural and economic factors.
- 39 Section 14 provides an alternative tool for setting the TAC for a stock. Section 14 allows you a broader discretion, but only in certain circumstances. Firstly, the stock must be on the 3<sup>rd</sup> Schedule to the Act and therefore have met the qualifying criteria provided in s 14(8)(b) to be added to this schedule. The common element of the criteria in s 14(8) is that there is something exceptional that means setting the TAC under s 13 cannot appropriately meet the management needs of the stock. Secondly, setting the TAC under s 14 rather than s 13 must better achieve the purpose of the Act.
- 40 You do not have equal discretion to use s 13 or s 14 to set the TAC for a stock. New Zealand’s international obligations under the United Nations Convention on the Law of the Sea (article 61) require our fisheries management measures to be designed to maintain or restore fish populations at or above a level that can produce MSY. Both the long title of the Act and s 5 recognise the importance of complying with those international obligations. In MFish’s view, s 14 is designed to cater for exceptional cases that do not fit within the general rule.
- 41 Under s 14(8)(b)(i), a stock may be added to the 3<sup>rd</sup> Schedule if it is not possible, because of the biological characteristics of the species, to estimate MSY. MFish considers that s 14(8)(b)(i) is clear that the reason for being unable to estimate MSY of the stock must be due to “biological characteristics of the *species*.” Any justification about why it is not possible to estimate MSY for a particular stock that is not based on the biological characteristics of the species as a whole is not sufficient to add that stock to the 3<sup>rd</sup> Schedule.
- 42 MFish agrees the points Northern Inshore makes regarding MSY for FLA 1 are valid. However, MFish does not agree that overall, those points confirm that it is not possible to estimate MSY for the species for biological reasons. For example, given the lack of interannual variability in the yellow-belly flounder catch per unit effort, it is theoretically possible to estimate MSY and  $B_{MSY}$  (the biomass that can produce MSY) for biological stocks of this species.
- 43 MFish agrees that the mix of species within the generic FLA code may make management more complex. In the future, it may be necessary to have the different

flatfish species reported separately, possibly with separate QMAs for yellow-belly and sand flounder.

- 44 Northern Inshore's comments about whether there is a need to constrain catches in this fishery are discussed further in the TAC section below.

### ***Current stock status***

#### *Submissions*

- 45 The **Kaipara study group**, the **Muriwai Sport Fishing Club**, **option4**, **NZRFC**, **Peter Yardley**, and **John Fenwick**, and **Forest & Bird and ECO** submit that the available information clearly indicates sustainability problems in FLA 1. Peter Yardley submits that he has seen a decline in fish stocks including flounder during the 30 years he has fished on the Kaipara Harbour. The Muriwai Sport Fishing Club submits that FLA 1 is subject to considerable localised depletion of stocks.
- 46 **Forest & Bird and ECO** submit that in the last 15 years there have been declines in catch per unit effort in various parts of the fishery, as shown by:
- A decline of two-thirds in catch rates of sand flounder in the Firth of Thames from a peak in 1994;
  - Current catch rates for yellow-belly flounder in the Firth of Thames about 25% below peak catches in 1992;
  - A decline in catch rates in the Kaipara fishery since the early 1990s.
- 47 **John Fenwick** submits that daily catch landings are not a true measure of catch per unit effort when net length and hours set are not taken into account.
- 48 **Sanford** and **Northern Inshore** do not consider there is a sustainability concern in FLA 1. They have concerns with the catch per unit effort analysis presented. In particular, these groups do not consider that the analysis is representative of the FLA 1 stock, but of a localised area only.
- 49 Northern Inshore considers that catch per unit effort has remained relatively stable over approximately the last ten years, with trends reversing for both coasts and in the main harbours since the 2001–02 fishing year. Because the period of stability that Northern Inshore describes covers two to three lifecycles of flounder species in FLA 1, it is asserted that under current management measures the fishery is self-regulating.
- 50 Northern Inshore submits that new data on mesh size trends in the fishery over time indicate a general trend of increasing mesh sizes in FLA 1, particularly on the west coast. Northern Inshore submits that this trend may confound the observed pattern in the catch per unit effort data that the initial position paper described.
- 51 If catches until the end of June are compared with those in the last few years, Northern Inshore highlights that an upward trend in abundance is evident. The FLA 1 catch until the end of June for the 2004-05 fishing year is 821 tonnes. That amount already exceeds the average catch over the last fifteen years.

- 52 Northern Inshore points out the mixed species nature of FLA 1 may complicate consideration of whether there is a sustainability issue. Two species predominate in the catch, and the contribution of other species to the total catch varies depending on the location. Northern Inshore also considers that the correlation of sand flounder catch per unit effort with water temperature indicates environmental processes largely drive the abundance of sand flounder.
- 53 Northern Inshore reinforces that a stock-recruitment relationship is considered very unlikely for flatfish.<sup>6</sup> Instead, Northern Inshore submits that changes in estuarine habitats offer a plausible explanation for the gradually declining trend in recruitment. Estuarine habitats are considered to be declining over time, particularly in the Manukau Harbour.
- 54 Northern Inshore considers that the 2003 ban on set netting along much of the west coast within fishery management area 9 (FMA 9) is likely to have an indirect effect on FLA 1 stocks. It is concluded that the set net ban, if it affects stocks at all, should be of benefit because it provides further protection from fishing in some areas. Time is needed for this effect to be observed.

#### Use of anecdotal information

- 55 **SeaFIC, Northern Inshore, AFL, and Te Ohu** are concerned that MFish placed undue weight on anecdotal information about FLA 1 stock status. In particular, Northern Inshore questions:
- What areas have localised depletion and increased fishing effort;
  - What proportion of the stock these areas represent;
  - Whether scientific evidence supports these claims;
  - Whether MFish has placed the claims in context with the known natural variability of the stock; and
  - Whether MFish has presented all anecdotal opinions on the state of the fishery.
- 56 Northern Inshore notes an MFish policy preference to give anecdotal evidence lower weight relative to the available scientific evidence, simply because of the inherent subjectivity of anecdotal evidence. Further, Northern Inshore believes that insufficient information was presented to you to allow you to consider the anecdotal evidence and accord it any weight in your decision-making.
- 57 **Te Ohu** has two main concerns about the use of anecdotal information. First, MFish has developed a generic policy for the hierarchy of information and how it should be applied in the setting of TACs. Te Ohu argues that MFish's use of the available information is inconsistent with its own policy. Information adopted in the plenary report is accorded greater weighting in the MFish policy. Conversely, anecdotal information – particularly if it has not been adopted in the plenary report – should be taken into account, but not provided the same weighting. However, it is clear to Te Ohu that greater weighting has been placed on the anecdotal information.

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<sup>6</sup> A stock-recruitment relationship is the relationship between the level of parental biomass (e.g. spawning stock size) and subsequent recruitment level. Northern Inshore considers that the level of parental biomass is unlikely to have a large effect on how many flounder recruit to the fishery in the following year.

- 58 Second, Te Ohu feels MFish has used the anecdotal information as a rationale to support claims of uncertainty about stock status. This uncertainty is then used to justify the proposed precautionary options.

### *MFish discussion*

- 59 MFish considers that its interpretation of the catch per unit effort data does not differ from that presented in the final Inshore Fisheries Assessment Working Group minutes. The Northern Inshore description is a somewhat more optimistic interpretation of the data than that recorded in the working group minutes. The initial position paper presented potential limitations with the scientific information, and fairly represented the conclusions of the inshore working group.
- 60 MFish considers that because of the clear dominance of yellow-belly flounder in fisheries other than the Firth of Thames, the mixed species nature of FLA 1 does not appear to have complicated consideration of whether there is a sustainability issue. Sand flounder was assessed separately for the Firth of Thames, where it is a common component of the catch.
- 61 Northern Inshore submitted a trend of increasing mesh sizes may confound the observed pattern in the catch per unit effort data. The research Northern Inshore refers to indicated average mesh size used in the fishery might have increased approximately 0.5 cm over the period of the analysis. The working group concluded that the small change in mesh size was unlikely to have driven the strong trends in catch per unit effort that were observed.
- 62 Northern Inshore highlights the level of commercial fishing is considered unlikely to be causing the gradually declining trend in recruitment. A loss of suitable habitat might be an alternative explanation. Nonetheless, MFish considers that a potential decline in recruitment is a relevant factor for you to consider, because it relates to overall productivity of the stock.
- 63 MFish acknowledges that catches to June 2005 are higher than past catches over the same period. However, increased catches in the most recent fishing year are not necessarily evidence of an upward trend in abundance. Increased catches could simply be because of increased effort. Because the 2004-05 fishing year is incomplete, it was not used in the recent catch per unit effort analysis. It is therefore difficult to assess the significance of the high catches between October 2004 and June 2005. Nonetheless, when making your decision, you may wish to bear in mind that catches have been higher in the most recent fishing year, which a commercial stakeholder attributes to increased abundance of flatfish.

### Use of anecdotal information

- 64 Section 10 of the Fisheries Act 1996 requires that decisions should be made on the best available information. MFish considers the best available information is the scientific information about a stock. However, you should also take into account the other information sources, including anecdotal information. You need to consider the uncertainty in information when giving weight to various information sources as part of your decision making process. MFish considers that scientific information should be given more weight than anecdotal information that is inherently less certain.

- 65 Nonetheless, anecdotal information can provide a different insight into the state of the fishery, from a different perspective than that contained in the Plenary Report and working group reports. The Plenary Report generally reflects the state of the commercial fishery. However, the stock assessment working group process and the Plenary Report do not necessarily reflect the views of recreational and customary fishers about the status of the stock or the availability of the stock in areas of importance to them.
- 66 It is quite plausible for the information contained in the Plenary Report on a stock-wide basis not to reflect local variations in catch rates of each fishing sector. Further, the catch per unit effort analysis uses fishery-dependent data, rather than independent information sources. Anecdotal information can provide a useful additional snapshot of the fishery. Both the scientific and the anecdotal information need to be considered and weighed accordingly. The problem definition section has provided further information to help you evaluate the anecdotal information presented (see paragraphs 22 to 32).
- 67 MFish notes that the available scientific information is largely consistent with the anecdotal information, in that both sources indicate declines in the availability of flatfish. The observed pattern was not confined to the Kaipara Harbour, where anecdotal concerns have most recently been raised. Non-commercial stakeholders attribute declines in flatfish abundance to excessive commercial fishing. The Inshore Fisheries Assessment Working Group considers environmental factors were a more likely cause of decline. Nonetheless, commercial fishing may limit the availability of flatfish to non-commercial fishers.
- 68 Northern Inshore questions whether the claims are placed in context with the known natural variability of the stock. The most recent working group report indicates that flatfish variability is not as high as has previously been assumed. Nonetheless, MFish considers that the initial position paper provided you with sufficient information to indicate that sub-populations within a given harbour might fluctuate without necessarily a corresponding decline in the overall FLA 1 stock.
- 69 As Northern Inshore pointed out, there are differing anecdotal opinions about the state of the fishery. For example, the minutes of a meeting of rig, grey mullet, and flatfish quota holders and annual catch entitlement (ACE) fishers that took place on 18<sup>th</sup> October 2004 show lack of consensus among fishers.
- 70 Some fishers believed the current quota levels were not controlling the fishery because the gap between TACC and current catch levels created excess ACE, and created an open access fishery environment. The fishers thought this situation in turn created an open access fishery environment. Such concerns would probably be a stock-wide concern, but relate to utilisation as well as sustainability. Conversely, a view was expressed that lowering the TACC does not necessarily fix the problem of fishers' behaviour and access patterns. Some fishers reported that flounder were abundant.
- 71 In summary, various sources of anecdotal information suggest sustainability concerns in FLA 1. Equally, some anecdotal evidence suggests the fishery is healthy. Sometimes anecdotal evidence can be unreliable, but some of this anecdotal information appears to be supported by scientific evidence of declining abundance

and recruitment. MFish recommends that you consider the anecdotal information presented here and in submissions when making your decision.

## Assessment of Management Options

### TAC

#### *Submissions*

- 72 The **Kaipara study group** submits that the TAC should be set at 1 190 tonnes for FLA 1. This proposed TAC is lower than either Option 1 or 2 in the initial position paper.
- 73 The study group has reviewed all scientific and anecdotal information available to it. It submits that there is sufficient information to suggest that FLA 1 stocks are declining and it is therefore logical that the TAC should be set at a level that will reduce current harvests. The study group argues that setting the TAC below current harvest levels is necessary to allow the fishery to recover sufficiently to maintain or enhance historic levels of catch per unit effort.
- 74 **Forest & Bird and ECO** and the **Muriwai Sport Fishing Club** support a reduction in catch limits as outlined in Option 2 in the initial position paper.
- 75 The **NZRFC** appreciates your recent statement that in shared fisheries, if stocks are below the biomass level that can produce the MSY, you will take steps to restore the biomass to above this level.
- 76 **NZRFC** and **option4** are concerned that neither of the two proposed options may fully address community concerns about access to and sustainability of the FLA 1 fishery. Option 1 is considered unlikely to constrain commercial catches at all. It is considered that Option 2 may constrain commercial catch in some years. While option4 and NZRFC appear to favour greater catch reductions, they support Option 2 out of the options presented. NZRFC considers that closer monitoring and review of the fishery should occur in conjunction with Option 2.
- 77 **Hilton Leith** submits FLA 1 has remained undercaught since it has been in the QMS. He considers the flounder fishery would benefit from a reduction in effort to allow a rebuild. Mr Leith holds 30.5 tonnes of quota in FLA 1.
- 78 **Ngapuhi** considers sustainable quotas need to be allocated to contentious areas so that these fisheries can rebuild and non-commercial fishing can be properly allowed for.
- 79 **Northern Inshore** notes that neither option reflects that commercial catch information for the 2004–05 fishing year has shown a significant increase in total FLA 1 catch. Northern Inshore believes that this increase in catch is probably associated with an increase in abundance. Adopting an approach that caps catch at current levels is considered to unnecessarily constrain commercial utilisation during periods of higher abundance.

- 80 Northern Inshore submits that if – as the inshore fisheries assessment working group suggested – there is little relationship between stock and recruitment, then the proposed measures will have little effect on the decline in catch per unit effort indices.
- 81 Northern Inshore rejects both options presented in the initial position paper, and instead proposes an alternative option. As discussed, Northern Inshore submits that FLA 1 should be managed under s 14 of the Fisheries Act, to recognise the variability in performance of the fishery and the fact that MSY cannot be estimated for the species in the stock complex.
- 82 Under s 14 of the Act, Northern Inshore proposes that you:
- a) Set a TAC of 1 703 tonnes for FLA 1, and within that TAC set:
    - i) A customary allowance of 270 tonnes;
    - ii) A recreational allowance of 270 tonnes;
    - iii) An allowance of 27 tonnes for other sources of fishing related mortality; and
    - iv) A TACC of 1 136 tonnes.
- 83 The TAC proposal of 1 703 tonnes includes commercial catch of 1 136 tonnes, based on the catch at the peak of the latest abundance cycle in 1993–94. Northern Inshore submits that this approach would better allow for commercial utilisation of the fishery during periods of high abundance.
- 84 The company believes that all sectors would share benefits from higher abundance when this eventuates. Northern Inshore considers the recreational and customary catch is not monitored or constrained. Consequently, these fishers will simply catch more in times of greater abundance. Northern Inshore thinks both commercial and non-commercial catches are likely to reduce in periods of lower abundance. Northern Inshore considers that the existing proposals fail to adequately provide for utilisation.
- 85 **Sanford, SeaFIC, Te Ohu, and AFL** do not support any option that will reduce the existing commercial catch limit.

### *MFish discussion*

- 86 Flounder has social and cultural significance for some stakeholders. Those stakeholders consider that Option 2 is better able to meet their needs. Conversely, MFish is also aware that Options 1 and, particularly, 2 may have a greater economic impact on some commercial stakeholders than the status quo. In making your decision, you will need to balance these considerations.
- 87 The discussion of TAC options has been extended to include analysis of a status quo option in the final advice (Option 3).

### Status quo option (Option 3)

- 88 You could choose to set a TAC for FLA 1 that incorporates the existing TACC of 1 187 tonnes. If the other proposed allowances were used, this would result in a TAC of 1 762 tonnes (including a higher estimate of other sources of fishing related

mortality for a higher commercial catch limit). Alternatively, Northern Inshore proposes a TAC of 1 703 tonnes (incorporating a TACC of 1 136 tonnes). Either of these options would effectively maintain the existing management framework.

- 89 There are both benefits and risks associated with the existing management framework. The main benefit of the current management is that commercial fishers have flexibility to increase catches in years of higher flatfish abundance. Sustainability at the stock level is probably not compromised, because the minimum legal size limit is likely to allow flatfish to spawn at least once before they are harvested.
- 90 MFish notes Northern Inshore's comments that relatively stable catches over the last two decades indicate that the fishery is effectively self-regulating. The main species in the FLA complex are short lived and fast growing, typically spawning only once or twice in their life cycle. Because existing measures already protect juvenile fish, you can maximise utilisation from the fishery without necessarily reducing the abundance of flatfish in the following year. Even in the absence of mortality from fishing, it is considered unlikely that many flatfish in FLA 1 would survive to spawn more than once or twice.
- 91 However, MFish notes several risks with this approach. The original TACC was set under the Fisheries Act 1983. The Fisheries Act 1996 provides several ways of providing for the variability of fishstocks that were not a part of the 1983 Act. MFish considers that the intent of the Fisheries Act 1996 is to use a TAC set under s 13 of the Act as the primary tool in most instances. Other options – including an in-season increase to the TAC for stocks listed on the Second Schedule, and potentially a TAC set under s 14 of the Act – can deal with interannual variability that might otherwise constrain utilisation.
- 92 There is no provision for a TAC set under s 13 of the Act to be set at an elevated level to provide for additional utilisation in years that abundance is high. As such, you would need to be confident that any TAC you set for flatfish would be sustainable if it were consistently caught from year to year. MFish lacks information on where FLA 1 is in relation to the biomass that can produce MSY. However, the 2005 Plenary report noted that: "...a constant catch at the level of the current TACCs is unlikely to be attainable or sustainable, nor would it be likely to allow the stock to move towards a size that will support the MSY. It is unknown if recent catches will allow the stock to move towards a size that will support the MSY."
- 93 MFish also notes that the most recent scientific information on FLA 1 indicates a lower level of interannual variability than was previously assumed. MFish considers that setting a high TAC based on an assumption of highly variable abundance may not be justified.
- 94 Northern Inshore argued that all sectors would share benefits from higher abundance in years it occurs. While this could happen, equally, in each year of less than high(est) abundance, non-commercial fishers would be likely to experience lower catches. Recreational fishing is controlled primarily through various effort controls, including a daily bag limit, and limitations on the types of gear that can be used. For example, recreational fishers are limited to a 60 m net. Conversely, commercial fishers may set up to 1000 m of net in harbour areas.

- 95 In years of lower flatfish abundance, the commercial sector might find it easier than recreational and customary fishers to harvest the available flounder. While commercial fishers can increase their effort in order to maintain catches, non-commercial fishers have less capacity to increase their fishing effort.
- 96 The submissions from recreational fishing organisations (option4, NZRFC, Muriwai Sport Fishing Club), environmental groups (Forest & Bird and ECO), iwi (Ngapuhi), and a community group (the Kaipara study group) indicate that substantial tensions exist at present. If the TAC is set at an elevated level, MFish considers that the social and cultural impacts will potentially be high.
- 97 Nonetheless, you might wish to set a TAC at a higher level at this stage, perhaps while other management options are investigated. In particular, MFish notes that ensuring the sustainability of separate species within multi-species stocks may be difficult. Information suggests some species have different productivity, variability, and spatial distribution. Investigation of area and species splits may help better ensure sustainability while providing for utilisation.

### Reduction options (Options 1 and 2)

- 98 MFish considers setting a lower TAC is more consistent with the purpose of the Fisheries Act 1996. It may also be more likely to meet the obligation under s 13 of the Fisheries Act in relation to MSY. Utilisation could still be provided for through in-season increases to the TAC in years of high abundance, as allowed for under the Second Schedule. Another benefit is that if commercial fishers have less ability to expand effort to maintain their catches in years of lower abundance, tension between sectors may be reduced.
- 99 The risk associated with this approach is that commercial utilisation may be constrained in some years. There may be a delay in increasing the TAC in-season, so available yield would be foregone. There are currently uncertainties about how to assess fluctuations in abundance in order to use the Second Schedule provisions.
- 100 The extent of this risk depends on which option is chosen (if you choose one of the two options for setting a lower TAC). The risk also depends on how variable flatfish abundance is in FLA 1. MFish notes that catches appear to have been stable for the last decade, with a peak before that in 1993–94. The catch per unit effort analysis also showed substantially less variation from year to year than was expected. The risk to utilisation is probably lower than if catches fluctuated greatly each year.
- 101 Northern Inshore notes that neither option reflects higher catch in the 2004–05 fishing year to date. If the catch to June 2005 were pro-rated up to estimate 2004–05 catches, the total catch would be 985 tonnes.<sup>7</sup> This value is higher than the TACC proposed under either Option 1 (815 tonnes) or Option 2 (740 tonnes). If the pro-rated figure is used to calculate the average catches used as the basis of Options 1 and 2, alternative figures of 823 tonnes and 759 tonnes are reached.
- 102 In summary, Options 1 and 2 both propose to base the TAC on estimates of current commercial and non-commercial catch. Option 1 makes greater provision for flatfish

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<sup>7</sup> Catches up to June have been on average 83% of total yearly catches in the last three full fishing years.

variability, and incorporates past years in which commercial catches have been higher than at present. Option 2 averages commercial catches over a shorter period. Using the more recent period makes more allowance for the apparent decline in flatfish abundance and recruitment. Option 2 reflects catches that have been stable for the last decade.

- 103 Option 1 has a lesser impact on utilisation. This option takes into account the uncertainty of information about the potential sustainability risk associated with higher catches in FLA 1, given the productivity of the main flatfish species, and the protection the minimum legal size limit provides.
- 104 Option 2 implies a greater constraint on utilisation (particularly in years when flatfish abundance is higher). Conversely, a lower TAC may more successfully control problems of localised depletion that are commonly raised in many parts of FLA 1, and in particular in the main fisheries, where fishing effort can be intensive. Given the large size of the existing QMA, a substantial reduction to the TAC would probably be necessary to have any great effect on localised depletion. Such a reduction would probably unnecessarily limit utilisation. Nonetheless, Option 2 may help to prevent the problem of local depletion (and inter-sector conflict) from being exacerbated, while other tools may be needed to control it further.

#### Other options

- 105 NZRFC considers FLA 1 is one of the shared fisheries that you should consider managing above  $B_{MSY}$ . Such an intention was not signaled in the initial position paper, and would need to be the subject of further consultation. Further, there is currently inadequate information to determine at what level the TAC would need to be set to ensure management above  $B_{MSY}$  for FLA 1.
- 106 MFish also notes submissions from the Kaipara study group, option4, NZRFC, and Forest & Bird and ECO that the TAC should be brought below recent catches to allow the fishery to rebuild. These groups argue that there is a clear sustainability problem. In addition, neither of the proposed options is considered likely to fully address the existing conflicts between commercial and non-commercial sectors.
- 107 In proposing the TAC options outlined in the initial position paper, MFish considered the biological characteristics of flatfish. Social, cultural, and economic factors were also considered. MFish notes in particular that yellow-belly and sand flounder have high fecundity, and are short lived. These characteristics indicate that flatfish stocks are relatively resilient to high levels of fishing.
- 108 There is uncertainty about the extent to which current removals affect flatfish recruitment and abundance. Nonetheless, recruitment may be declining in FLA 1, and it is desirable to constrain the potential for any additional effort and catch to occur. The options in the initial position paper were designed to achieve this balance.
- 109 If you wished to be more cautious about a potential sustainability risk in FLA 1 (in the absence of an estimate of MSY), you could consider a reduction below current catches. MFish suggests such a reduction could be made if it was considered necessary after monitoring the fishery's status under one of the TAC options proposed here.

## ***Recreational and customary allowances***

### *Submissions*

- 110 **NZRFC, option4,** and the **Muriwai Sport Fishing Club** submit that flounder are easily accessible species that are important for the social and cultural well being of many local communities. Members of the Muriwai Sport Fishing Club value flounder as a food source. The **Kaipara study group** submits that the lack of abundance of commercially targeted species including flounder is of serious concern within Kaipara communities.
- 111 option4 submits that commercial fishing interests have had a priority in this fishery since the introduction of the QMS. option4 considers that the high level of quota allowed for commercial fishers subsequently determines the biomass available to non-commercial fishers. In general, option4 does not support setting non-commercial allowances based on estimates of current catch in the context of a depleted fishery, where low stock abundance is likely to have hindered non-commercial catches.
- 112 Because you will be setting initial allocations for non-commercial fishers in FLA 1, option4 requests that you consider its submission on proportional allocation. option4 considers that Option 2 is a minimum first step because you have an obligation to “allow for” non-commercial fishing interests. Option 2 is considered more likely to reduce the risk of further escalating the conflict in communities that have borne the brunt of poor management of the flounder fishery to date.
- 113 option4 and Muriwai Sport Fishing Club recommend that you set the non-commercial allowances at a level sufficient to cover current or expected non-commercial catch. These groups note that recreational catch estimates and allowances are uncertain and should be subject to review when better catch information is available. option4 considers that the recreational allowance should not be a fixed proportional division of FLA 1.
- 114 Muriwai Sport Fishing Club requests that you make no changes to recreational bag limits, size limits, or gear restrictions. The club submits that lack of constraint on commercial catches adversely affects recreational access. However, the club supports recreational and customary allowances of 270 tonnes each.
- 115 option4 submits that flounder are considered a taonga (treasure). Flounder are an important food source for local communities in many harbour and estuarine areas. Historically, flounder was readily available, easily caught, and accessible. However, option4 submit that because of depletion of flounder stocks this is no longer the case, and Maori can no longer meet their social and cultural needs in FLA 1.
- 116 option4 reports the comment of Sonny Tau, Chairman of Te Runanga A Iwi O Ngapuhi, that “We treasure flounder and mullet as an integral part of our ability to manaaki our manuhiri.” The concept of manaakitanga relates to hospitality, generosity and kindness to guests (manuhiri). Two hui have recently been held with Ngapuhi, other northern iwi, and recreational non-commercial fishing interests. Both hui agreed on a goal of achieving “more fish in the water” to resolve their concerns.

- 117 The **Kaipara study group** and **Forest & Bird and ECO** support customary and recreational allowances of 270 tonnes each.
- 118 **SeaFIC** and **Northern Inshore** submit that MFish has failed to adequately monitor recreational fishing, and estimates of recreational catch are poor.
- 119 **Northern Inshore** submits there are known methodological errors associated with the available recreational catch estimates. However, the catch estimates from these surveys indicate that recreational catch in FLA 1 appears to have been relatively constant between 1994 and 2000. Northern Inshore suggests that the relatively constant recreational catch estimates provide no evidence that there have been increasing problems for recreational fishers trying to access FLA 1 at the stock level.
- 120 Northern Inshore supports setting customary and recreational allowances of 270 tonnes as part of the alternative option it proposes. However, Northern Inshore considers that unless non-commercial fisheries are actively managed and monitored, there is no value in setting allowances for these fisheries as part of overall sustainability measures.
- 121 **Te Ohu** notes the customary estimate and allowances are based on a proportion of the recreational estimates/allowances. Te Ohu considers this method of establishing catch and then determining allowances for customary fishing unacceptable because it is premised on the assumption that the recreational information is valid or reliable. Te Ohu disagrees with the MFish policy on estimating customary catch (based on poor information derived for recreational catch) and notes the inconsistent application of that policy.

### *MFish discussion*

- 122 MFish accepts that estimating recreational and customary take involves a degree of imprecision. However, MFish considers that the best available information is taken into account. Allowances can be reviewed when better information on non-commercial catches is available.
- 123 The front section of this document further discusses the availability of non-commercial catch information. MFish notes that despite general comments in submissions from Northern Inshore, SeaFIC, Te Ohu, and option4 about the poor quality of information on levels of recreational fishing, most submissions supported the proposed allowances for customary and recreational catches.
- 124 Implementation of the new customary regulations and the appointment of kaitiaki have proceeded steadily but slowly. MFish is implementing steps to ensure kaitiaki report on the extent of catch authorised under the customary regulations. In the absence of specific information, guidelines have been developed for setting customary allowances. MFish has followed these guidelines in proposing a customary allowance for FLA 1.
- 125 MFish acknowledges option4's concerns about setting non-commercial allowances for the first time, based on recreational catches from a depleted fishery. Allocation issues are discussed in more detail in the front section of this document. MFish lacks sufficient information to propose an alternative allocation model. Further, both

Options 1 and 2 already incorporate substantial cuts to the TACC. The impact of a further cut, in order to increase the non-commercial allowances, could be high. In general, submissions have supported the proposed non-commercial allowances, and MFish considers the allowances are based on the best available information.

126 Finally, Northern Inshore suggests that there is no active management and monitoring of the recreational sector. MFish disagrees. Various controls limit recreational effort in the FLA 1 fishery. In particular:

- Various controls apply to amateur net fishing, including a limit of one net per person; nets to be hauled by hand; nets not to extend across more than one-quarter of the width of any channel; net not to exceed 60 m in length; nor be set within 60 m of another net; stranding is not allowed;
- Flatfish is one of the species included in the daily combined bag limit of twenty fish;
- The minimum set net mesh size for flatfish is 114 mm in the Auckland and Kermadec fisheries management areas;
- Amateur set netting is prohibited in defined areas, including within four nautical miles of much of the west coast within FMA 9, and within the entrance to the Manukau Harbour.

127 MFish also commits a considerable portion of available compliance resources to monitoring of recreational and customary take.

### ***Other sources of fishing related mortality***

#### *Submissions*

128 The **Kaipara study group** submits that the figure used for other sources of fishing related mortality is arbitrary, as well as being much too small. This position is based on the work the study group undertook in preparing the document '*Fishing for the future: a strategy for the fisheries of the Kaipara Harbour.*' The study group submits that if current, wasteful fishing practices are allowed to continue in these fisheries, the true figure of fishing related mortality is likely to be closer to 50 tonnes.

129 **Peter Yardley** and **John Fenwick** both submit that they consider fishing practices cause high levels of fish wastage in this fishery.

130 **Northern Inshore, NZRFC, Muriwai Sport Fishing Club, and Forest & Bird and ECO** support an allowance of 27 tonnes for other sources of fishing related mortality.

#### *MFish discussion*

131 MFish has had additional internal discussion about the proposed allowance for other sources of fishing related mortality, particularly with compliance staff. It is acknowledged that the allowance initially proposed may be an underestimate. Submissions from two commercial fishers (John Fenwick, Peter Yardley) indicate that fish wastage might be high, at least in parts of FLA 1.

- 132 However, in the absence of quantitative information on other sources of fishing related mortality, MFish considers it reasonable to set the allowance as proposed in the initial position paper. This is the proposal that has been consulted on, and various submissions have supported it.
- 133 If you choose the status quo option (Option 3), MFish advises that the equivalent estimate of other sources of fishing related mortality is 35 tonnes. This figure is based on 2% of the combined TACC and estimates of non-commercial catch.

## **TACC**

### *Submissions*

- 134 **John Fenwick, Hilton Leith, the Kaipara study group, option4, NZRFC, Muriwai Sport Fishing Club, and Forest & Bird and ECO** support a reduced TACC.
- 135 **Mr Fenwick, Forest & Bird and ECO, and the Kaipara study group** note that the TAC and available ACE for FLA 1 can be adjusted upwards if necessary, in years when flounder is very abundant.
- 136 **NZRFC and option4** submit that because the TACC has never constrained commercial catch in FLA 1, it has always been intensely fished. The intensive fishing effort has caused serious conflict between commercial and non-commercial fishing interests. NZRFC, option4, and Ngapuhi argue that the combination of excess quota and the large size of the QMA have led to the development of a mobile fleet of set netters. A mobile fleet is capable of depleting entire harbours, until they become uneconomic to fish. NZRFC and option4 submit this behaviour is detrimental to local non-commercial interests, and sometimes, local commercial set netters.
- 137 NZRFC and option4 consider that reducing the TACC to current catch levels will possibly prevent conflict between fishers from escalating, but is not likely to decrease current levels of conflict.
- 138 Of the two options presented in the initial position paper, **option4, NZRFC, and Forest & Bird and ECO** support Option 2. The **Muriwai Sport Fishing Club** supports the TACC being set at a level commensurate with what is being caught. The club recommends a TACC of 740 tonnes (Option 2).
- 139 However, **option4** submits that you should reduce the TACC to significantly less than 740 tonnes to allow this fishery to rebuild. option4 is concerned that neither option put forward in the initial position paper may fully address community concerns about sustainability of, and access to, the flounder fishery. NZRFC shares this view.
- 140 **Forest & Bird and ECO** note that Option 2 does little more than reduce the TACC to existing catch levels based on the 10 year average, without addressing the serious concern of declining catch per unit effort, as well as the different species involved in the multi-species FLA code. Forest & Bird and ECO would prefer the TACC was set more conservatively, to address concerns of both the community and some commercial fishers.

- 141 The Kaipara study group submits that the TACC should be set at 600 tonnes for FLA 1. This figure is approximately 50% of the proposed TAC. The figure represents the current catch in low years, and is a reduction of 587 tonnes (approximately 50%) of the current TACC.
- 142 **Sanford** submits that although the current TACC has not been caught since it was set, a sustainability concern does not drive the situation in this fishery. Rather, Sanford argues that fishers have made commercial decisions that have led to the TACC being under caught. Historically Sanford has not targeted nor leased a majority of its FLA 1 quota because it was not economically viable to do so.
- 143 In the past, there were limited market opportunities to sell flatfish product. However, since the development of the Auckland Fish Market, Sanford has leased ACE to fishers who are actively catching flounder, and selling it through the Auckland Fish Market. Sanford also supports the more specific comments that Northern Inshore has made.
- 144 **Northern Inshore** does not accept that the use of long term catch averages is a reasonable approach to setting allowances in a fishery that has high variability in abundance, few year classes, and supporting sustainability measures (minimum legal size and mesh size limits) already in place. Northern Inshore supports the statement in the 2005 Plenary that flatfish TACCs have been set at high levels to provide fishers with the flexibility to take advantage of the inherent variability associated with annual flatfish abundance. On this basis, it would not be expected for TACCs to be reached every year.
- 145 Northern Inshore proposes an alternative TACC of 1 136 tonnes based on the catch at the peak of the latest abundance cycle in 1993-94.

### Economic impacts

- 146 **SeaFIC** notes the impacts of a TACC reduction can be assessed by evaluating short-term forgone revenues to the commercial fishery, based on a comparison of the value of current catches and the proposed TACC. MFish should evaluate the present value of the stream of forgone revenues from fish and ACE sales. However, SeaFIC considers that this is only part of an appropriate valuation of the impacts. SeaFIC considers it unlikely that the TACC will be adjusted upward in the event of an increase in biomass.
- 147 SeaFIC also notes that because flatfish is sold primarily on the domestic market, there may be consumer surplus that would be lost if catches are constrained in years of high abundance.<sup>8</sup> Constraining catch may keep prices from falling, but this may come at the expense of the New Zealand seafood consumer, and reduce overall net benefits to the nation.
- 148 Northern Inshore notes the initial position paper refers to possible benefits of TACC adjustments: avoiding market saturation at certain parts of the year, better product flow to domestic markets, and therefore more favourable prices. Northern Inshore

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<sup>8</sup> The consumer surplus is the amount that consumers benefit by being able to purchase a product for a price that is less than they would be willing to pay.

submits that this advice ignores that these fisheries are distinctly seasonal and therefore it is difficult for fishers to spread their catch.

- 149 Northern Inshore believes that in considering the economic impact of options on a stock basis, MFish has ignored the cumulative effect of reductions on set net fisheries and associated quota owners in the northern set net fishery who target grey mullet, rig, and flatfish as a portfolio of species.

### *MFish discussion*

- 150 As noted in the TAC discussion, there are conflicting viewpoints about management options for FLA 1. Sanford, SeaFIC, Northern Inshore, AFL, and Te Ohu support the status quo. Conversely, the Kaipara study group, option4, NZRFC, Muriwai Sport Fishing Club, Forest & Bird and ECO, Peter Yardley, John Fenwick, and Hilton Leith support a reduction in catch levels, preferably to below current commercial catch levels.
- 151 Catches were averaged over fifteen years (**Option 1**) or ten years (**Option 2**) for the proposed TACC options. This approach was used because catches in the fishery had been stable for the past decade. A fifteen-year option was proposed because it accommodated any cyclical changes in abundance over time. Because the fishery has been relatively stable over the last decade, choosing an alternative period over which to set catches does not change the value much. For example, the average of the last five years (including the pro-rated 2004-05 catch) is 770 tonnes. This falls between the options proposed in the initial position paper that MFish consulted on.
- 152 Northern Inshore suggests an alternative of using the past maximum catch in 1993–94 (1 136 tonnes) to set the TACC. MFish has provided analysis of the status quo (Option 3), which is similar to Northern Inshore’s proposal. The benefit of this option is that it provides well for commercial utilisation. The risks are that in years when recruitment is low, the high TACC may allow localised depletion in areas of high effort. In years of lower abundance, commercial fishers may be able to preferentially harvest flatfish, disadvantaging non-commercial fishers.
- 153 In an important shared fishery like FLA 1, there are implications of having a TACC that does not effectively constrain commercial catch in most years. Commercial and non-commercial fishers have differing ability to catch the available flatfish. A high TACC may mean that commercial fishers maximise their fishing effort (particularly in less abundant years), and harvest a greater portion of the available resource in comparison to non-commercial fishers. This is because non-commercial fishers are constrained to using far smaller nets with less catching capacity than commercial fishers.
- 154 option4 submits that because the TACC has never constrained commercial catch in this fishery it has always been fished intensely. MFish agrees that complaints from communities have been made in response to what they claim to be excessive commercial fishing effort (see paragraphs 22 to 32). In a few cases, such as at Tinopai on the Kaipara Harbour, there have been physical confrontations. There have also been ongoing tensions between local and non-local commercial fishers. A perceived scarcity of flatfish has been a common feature of these situations.

155 The discussion about the TAC is also relevant in relation to the submissions that suggest the TACC should be set below current catches (see paragraphs 106 to 109). MFish agrees that other measures might be needed in some areas to better manage the interaction between commercial and non-commercial fishers. Other management measures might also be needed to address some of the concerns about fish wastage that John Fenwick, Peter Yardley, and the Kaipara study group discuss.

### Economic impacts

156 Northern Inshore and SeaFIC commented that the economic analysis of any change to the TACC was inadequate. They consider that a TACC reduction might have greater financial impact than the initial position paper suggested.

157 MFish accepts that it may be useful to also provide an analysis of potential foregone earnings against the full existing TACC. The full TACC has been on average 33% under caught between 1986–87 and 2003–04. Table 2 shows this additional analysis for the 2005-06 fishing year, using the most recent port price information (2005–06 survey – \$3.35 per kg). The table also shows potential foregone earnings for quota holders. A reduction to the TACC would reduce the amount of ACE each quota owner would receive, potentially reducing profits from ACE sales.

**Table 2: Potential lost revenue from TACC reduction for the 2005-06 fishing year**

	TACC (tonnes)	TACC reduction (tonnes)	Foregone catch earnings (\$)*	Foregone ACE value (\$)***
<b>Option 1</b>	815	372	\$124, 7205	\$139, 613
<b>Option 2</b>	740	447	\$1, 498, 455	\$167, 738

\* Based on 2005-06 port price of \$3.35 per kg. Assumes existing TACC is fully caught; average undercatch between 1986-87 and 2003-04 is 33%.

\*\*\* Potential loss to quota holders because each share is equivalent to a smaller amount of ACE. Based on a 90<sup>th</sup> percentile value of \$0.375 per kg. The average trade price is \$0.37 per kg.

158 MFish disputes that a TACC reduction would not be reversed in a timely fashion if the stock biomass did increase. As part of the annual review of sustainability measures, MFish routinely proposes TAC and TACC increases where there is information to suggest that stock sizes have increased above MSY.

159 Because the majority of landings are sold on the domestic market, SeaFIC submits that constricting future landings is likely to reduce consumer surplus. MFish notes that this may occur in some years in which flounder abundance is high and the TACC constrains catches. MFish accepts that, as Sanford submits, commercial decisions may have contributed to undercatch of the TACC in the past.

160 Overall, MFish notes that the potential cost to industry of a decrease to the TACC may be higher than the initial position paper implied. This is particularly the case if in the future industry wished to increase catches above the level seen in the past decade. You might also wish to consider the cumulative effect of reductions on set net fishers and quota owners who have interests in grey mullet, rig, and flatfish.

## Summary

- 161 Options 1 and 2 both propose to base the TACC on estimates of current catch. Option 1 averages commercial catches over a longer period, incorporating past years in which commercial catches have been higher than at present. Option 2 averages commercial catches over a shorter period. Commercial catches have exceeded the TACC proposed under Option 2 in recent years. As such, the cost to commercial fishers is higher under Option 2.
- 162 Conversely, MFish considers Option 2 may be more able to provide for the social and cultural needs of non-commercial stakeholders. The TACC provided for in Option 1 would not have constrained commercial catches over the last decade. This option might not limit the problem of excess effort in important fisheries, because of the easy availability of ACE. Non-commercial stakeholders have submitted that the high level of the TACC creates considerable conflicts in some areas.
- 163 MFish has also provided you with analysis of the status quo TACC (Option 3). This option has the benefit of providing well for commercial utilisation. However, MFish considers that allowing for such a high TACC does not fit as well within the framework of the Fisheries Act 1996. MFish also considers that a TACC at that level would affect the ability of non-commercial fishers to provide for their social and cultural well-being.

## **Environmental Considerations**

### ***Submissions***

- 164 **Peter Yardley** submits that the greatest changes facing the Kaipara fishery are all man-made. He notes the catchment of the harbour is substantial, with significant levels of run off from the land. The nutrient-rich run off and sediment provides food for various algae and seaweeds. At times algae and seaweeds grow over the mudflats and make feeding grounds almost inaccessible to fish. A major infestation of Asian Date Mussel is also covering large areas of mudflats and changing the shape and drainage of the mudflats.
- 165 **Northern Inshore** observes that estuarine habitat may be important for flounder species. This hypothesis offers a plausible explanation for the gradually declining trend in recruitment, given the steady alienation of this type of habitat in certain estuaries, particularly in the Manukau. Northern Inshore submits that MFish needs to consider how best to gain information on the health of the Manukau Harbour.

### ***MFish discussion***

- 166 MFish acknowledges that environmental factors are likely to play a part in the health of harbour fishstocks including flounder. Management of environmental impacts is outside the scope of the Fisheries Act. It is primarily the responsibility of territorial authorities and the Ministry for the Environment. Because MFish's management responses are limited in this area, MFish has in the past done limited research on environmental impacts on fishstocks. Some research is done through MFish's biodiversity fund. MFish is aware that research providers including the National

Institute of Water and Atmospheric Research are doing research in this field. MFish will monitor the outcomes of such research.

- 167 Northern Inshore suggests environmental changes, rather than commercial fishing, may be contributing to localised area depletion of marine life. Regardless of the cause, the effect needs to be managed. If a fishery is declining, appropriate measures need to be implemented to ensure that the resource is not further affected.

## Other Management Issues

### *Submissions*

- 168 **Northern Inshore** supports on-going monitoring and review of FLA 1. Northern Inshore supports the use of non-regulatory tools to address proven local sustainability and utilisation issues, for example codes of practice or voluntary agreements. Northern Inshore considers proven local sustainability and utilisation issues should be addressed through tools other than TAC adjustments. Such tools may include differential bag limits, fishing restrictions, minimum legal size, or area closures.
- 169 **NZRFC** supports close monitoring of the fishery, and more regular reviews.
- 170 **Forest & Bird and ECO** consider that the proposed future management discussion does not adequately reflect community concerns about the state and management of the fishery. Forest & Bird and ECO consider there is community desire for more effective control of this shared fishery. They submit MFish needs to engage with communities to actively consider the use of localised management tools to address these concerns.
- 171 Forest & Bird and ECO submit that flatfish species should be managed individually, as eight separate quota management species rather than as a generic 'flatfish' grouping.

### *Deemed value*

- 172 **SeaFIC** submits that if the TACC is reduced and becomes constraining, the deemed value should be re-evaluated next year to ensure it still provides incentives to acquire ACE. **NZRFC** submits that the deemed value needs to be set at twice the port price in order to constrain the fishery.

### *Size of quota management area*

- 173 The **Kaipara study group, option4, NZRFC, Muriwai Sport Fishing Club, Forest & Bird and ECO, and Ngapuhi** submit that the existing QMA for FLA 1 is too large to give practical effect to the purpose of the Fisheries Act. The FLA 1 management area is thought to be too large to control harvest levels or ensure sustainability in local areas. These groups submit that, as a minimum, the existing FLA 1 QMA needs to be bisected into separate west coast and east coast fisheries. The Kaipara study group also notes that increasing fishing effort is being applied to the Kaipara Harbour.

174 option4 and Ngapuhi submit that the QMA needs to be subdivided, and sustainable quotas allocated so that fisheries can rebuild, and non-commercial fishing can be properly allowed for. NZRFC and Muriwai Sport Fishing Club support option4's submission.

175 The Muriwai Sport Fishing Club considers significant harbours such as the Kaipara and Manukau should have individual commercial extraction limits.

### *Minimum mesh size*

176 The **Kaipara study group, option4, NZRFC, Muriwai Sport Fishing Club, and Ngapuhi** consider that an increase in the minimum set net mesh size is necessary in the commercial fishery. option4 considers that this measure would increase the biomass and availability of flounder. Non-commercial fishers would benefit from this measure, because availability would increase.

177 Increasing the minimum mesh size is considered likely to increase commercial yield per recruit in the fishery. The capture and mortality of small flounder would be reduced at higher mesh sizes. There would also be a significant reduction in the mortality of other juvenile fish, including snapper, trevally, dogfish, and gurnard found in harbours.

### *Soak time*

178 The **Kaipara study group, Peter Yardley, John Fenwick, option4, NZRFC, and Muriwai Sport Fishing Club** support a decrease in the existing soak time for commercial fishers. option4, Muriwai Sport Fishing Club, and NZRFC consider set netting an extremely wasteful method when nets are left to soak for extended periods in areas where sea lice are present. If current soak times can be reduced, then wastage to scavenging will be reduced and productivity will increase. The Muriwai Sport Fishing Club supports introduction of a maximum soak time for commercial set nets of a single tide cycle.

179 Mr Fenwick submits that when long soak times are used, wastage and bycatch in proportion to the targeted species is about ten times greater than what it should be. Fishers who use long soakage times tend to dominate the fishing ground because they occupy areas for a long time and this puts other fishers at a disadvantage.

### *Fishing practices*

180 **Peter Yardley and John Fenwick** submit that further management of wasteful fishing practices used in this fishery is required.

181 Mr Yardley argues misuse of monofilament nets has a substantial impact on harbour fisheries. He submits that the current legal soak time, and insufficient enforcement of the soak time, along with superfine monofilament net, together cause substantial loss of juvenile and adult species.

182 Mr Yardley submits that there is a trend to use the finest nets available for flounder, and to leave the nets in the water for as long as possible. These practices are alleged to result in sea lice and crabs killing adults and juveniles, contributing to fish wastage.

- 183 Mr Yardley further submits that the minimum fish size is too small for flounder, and damages flounder breeding cycles. Mr Yardley argues that when fishers target fish of the minimum legal size, many fish do not get old or large enough to breed before they are caught.
- 184 Mr Fenwick notes a tendency for fishers to use very long lengths of nets, allow nets to stall on mudflats in the middle of the night and not clearing them until the next day, or use very long soakage times.

### *Kaipara Harbour strategy*

- 185 As noted, the **Kaipara study group** are concerned that no reference was made to the Kaipara Harbour strategy document in the initial position paper, although the strategy was formally presented to you over a year ago. The study group notes that the strategy was produced with extensive consultation with all stakeholders. The group seeks a formal response to the strategy as part of the current review of sustainability and other management measures.

### *Reporting*

- 186 **NZRFC** notes that some commercial fishers are failing to correctly report their catch by individual species code for FLA 1. NZRFC observes that this is a breach of the Fisheries Act, and needs to be rectified. **Northern Inshore** proposes a nationwide education programme be developed to assist with compliance with reporting codes. It is suggested that all inshore commercial stakeholder organisations could be involved in the process.
- 187 Northern Inshore recommends consideration be given to collecting information on type of fishing gear on the new set net catch and effort forms MFish is currently developing.

### *MFish discussion*

- 188 MFish considers the existing deemed value is likely to provide sufficient incentive for fishers to obtain ACE at present. As SeaFIC suggests, this will be monitored after any change to the TACC, to determine it retains this function. MFish notes FLA 1 does not fit within the 'single species high value' framework for setting the deemed value at twice the port price as NZRFC suggests. Most fishers cover catches with ACE at present.
- 189 Many of the other issues that submitters raised are outside the scope of this final advice paper. Setting a TAC for FLA 1 that lowers the existing TACC is unlikely to address all the problems some stakeholders are raising. MFish continues to consider that setting an appropriate TAC is a reasonable first step. Other changes may be needed over time, including some measures that are more closely focussed on local area problems.
- 190 In particular, MFish notes that ensuring the sustainability of separate species within multi-species stocks may be difficult. Information suggests some species have different productivity, variability, and spatial distribution. Investigation of area and

species splits may help better ensure sustainability and provide for utilisation. This process would likely take several years.

- 191 MFish notes that various submitters support an increase to the minimum mesh size for commercial fishers. MFish has recently commissioned a qualitative analysis of gear usage in FLA 1. The study indicated that fishers generally used mesh sizes greater than the minimum legal size of 114 mm. The average mesh size used on the east coast was found to be 125 mm. On the west coast, the average was around 120 mm.
- 192 Nonetheless, MFish acknowledges that some fishers are likely to use the minimum legal mesh size. MFish lacks quantitative information on whether this is likely to cause fish wastage as alleged. Earlier work in the Manukau Harbour indicated that a mesh size of 115 mm is effective for allowing fish less than the legal length of 25 cm to escape.<sup>9</sup>
- 193 MFish is also aware that the Kaipara group and Northern Inshore have both been developing codes of practice that cover some of the measures discussed above, including mesh size and soak times.
- 194 MFish acknowledges the development of the Kaipara Harbour Strategy. The primary aim of the current initiatives is to review the TACs for three stocks, including flounder, in area 1. The intention was not to implement a fisheries management strategy for the Kaipara harbour in the course of the current sustainability process.

## Conclusion

- 195 MFish proposes that you set a TAC for the first time for FLA 1. In doing so, MFish believes you should consider the following factors:
- The current management of FLA 1 relies on a TAC well above current catches, to provide flexibility for fishers to take flatfish in larger numbers in years of high abundance.
  - There is a relatively low sustainability risk associated with the current TAC at a stock-wide level, because the main flatfish species in FLA 1 have high productivity. Given favourable environmental conditions, flatfish biomass is likely to rebound even if fished to relatively low levels.
  - A minimum legal size allows most flatfish to spawn once before they can be legally harvested.
  - The existing way of managing FLA 1 has the benefit that commercial fishers have flexibility to fish FLA in years of high abundance without the Crown needing to adjust the TAC.
  - However, managing FLA 1 in this way also has several risks. In years when recruitment is lower, the high TAC may allow localised depletion of flatfish in areas of high effort. It may also create conflict with other users of the resource, both customary and recreational. There is evidence that recruitment and abundance have been declining.

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<sup>9</sup> MAFFish North (1989) Effects of commercial fishing on the fisheries of the Manukau Harbour and lower Waikato River. Unpublished report, MAFFish North, Auckland. 118pp.

- The high TAC may not ensure sustainability of some flatfish species within the FLA grouping that are less productive or not so highly variable. Recent information indicates that of the two most common species, yellow-belly flounder may be substantially less variable than sand flounder.
  - The existing approach may be less consistent with the framework the Fisheries Act 1996 has established for managing variable stocks. Further, a TAC that incorporates the existing TACC is considered less likely to be at a level that will provide MSY, as s 13 requires.
- 196 MFish has provided additional analysis on a status quo option (Option 3). This option has the benefit of providing flexibility for commercial fishers. However, the Fisheries Act 1996 provides alternatives means for providing that flexibility other than setting a high TAC. In addition, a high TAC and TACC may have greater impacts on recreational and customary fishers (particularly in years when abundance is lower).
- 197 Option 1 and 2 both propose to base the TAC on estimates of current catches. **Option 1** makes greater provision for flatfish variability, and incorporates past years in which commercial catches have been higher than at present.
- 198 **Option 2** chooses a shorter period to average commercial catches. Option 2 more closely reflects recent catches in the commercial fishery. Using the more recent period also makes more allowance for the apparent decline in flatfish abundance and recruitment. However, commercial catches have exceeded the TACC proposed under Option 2 in some years. As such, the cost to commercial fishers would be higher under Option 2. Conversely, Option 2 is likely to have greater benefits for non-commercial fishers. Option 2 may also be more likely to have some impact on localised depletion problems that currently occur in heavily fished parts of FLA 1.

## Final Recommendations

199 MFish recommends that you:

EITHER

- a) **Option 1** – set a TAC of 1 382 tonnes for FLA 1 and within that TAC set:
  - i) a customary allowance of 270 tonnes;
  - ii) a recreational allowance of 270 tonnes;
  - iii) an allowance of 27 tonnes for other sources of fishing related mortality; and
  - iv) a TACC of 815 tonnes.

OR

- b) **Option 2** – set a TAC of 1 307 tonnes for FLA 1 and within that TAC set:
  - i) a customary allowance of 270 tonnes;
  - ii) a recreational allowance of 270 tonnes;

- iii) an allowance of 27 tonnes for other sources of fishing related mortality;  
and
- iv) a TACC of 740 tonnes.

OR Retain the existing TACC and set allowances as follows:

- c) **Option 3** – set a TAC of 1 762 tonnes for FLA 1 and within that TAC set:
  - i) a customary allowance of 270 tonnes;
  - ii) a recreational allowance of 270 tonnes;
  - iii) an allowance of 35 tonnes for other sources of fishing related mortality;  
and
  - iv) a TACC of 1 187 tonnes.

