

GREY MULLET (GMU 1) – EXECUTIVE SUMMARY

Initial Proposal

- 1 The Ministry of Fisheries (MFish) proposed in its Initial Position Paper (IPP) of 30 June 2005 the following management measures for the GMU 1 stock for the start of the 2005–06 fishing year:

Table 4: Management proposals for GMU 1 stock as identified in Initial Position Paper

Option	Approach to setting recreational allowance & TACC	Proposed TAC (tonnes)	Customary allowance (tonnes)	Recreational allowance (tonnes)	Other sources of fishing-related mortality (tonnes)	Proposed TACC (tonnes)
1a	Proportional	1 101	100	90	33	878
1b	Non-proportional	1 101	100	100	33	868
1c	Non-proportional	1 101	150	150	33	768
2a	Proportional	1 043	100	80	31	832
2b	Non-proportional	1 043	100	100	31	812
2c	Non-proportional	1 043	150	150	31	712
3a	Proportional	985	100	70	30	785
3b	Non-proportional	985	100	100	30	755
3c	Non-proportional	985	150	150	30	655

Key Issues

- 2 The key issues include:
 - Problem definition;
 - Available sources of information to support the problem definition;
 - Tools to manage the problem;
 - Other issues, including level at which the total allowable commercial catch (TACC) and allowances should be set.

Problem definition

- 3 The key issue confronting the use of the GMU 1 stock is whether the present total allowable catch (TAC) is set at a level that will ensure the stock is sustained at a level that will at least produce maximum sustainable yield (MSY). Further, the utilisation opportunities identified in the purpose of the Act may not be being met across the full range of interests. Non-commercial interests from a number of localities on the west coast, as well as East Northland, have noted that the availability of grey mullet is no

longer as good as in the past. Similarly, some commercial fishers in the Kaipara have more recently indicated that they have sustainability and utilisation concerns arising from the level of commercial grey mullet fishing found in the Harbour.

- 4 The present TAC provides for a TACC that on average has been undercaught by 14.5% since the 1998–99 fishing year, although undercatch was only 5% in the 2003–04 fishing year. Commercial catch has not reached the TACC set for the stock in any year since 1986. The fishery had intensive commercial use before being introduced into the QMS.
- 5 Commercial catch per unit effort has declined in at least two sub-areas of the QMA (Kaipara and Manukau Harbours). However, while commercial CPUE information may indicate a decline in abundance, there is no information on the distribution of the biomass within the QMA that would help define this potential decline as a sustainability concern or localised depletion. Best available information indicates that the two harbours in which CPUE has declined are the two key historical fisheries for grey mullet within the QMA, but how these fisheries contribute to overall biomass of the stock is unknown.
- 6 Trends in commercial CPUE in other sub-areas of the stock, vary from a reduction in the Hauraki Gulf, to relatively stable in the northwest coast, as well as the lower Waikato River and southern coastal harbours. There is a lack of information on the interaction of GMU 1 populations between each sub-area.
- 7 The relationship between current biomass relative to the biomass that can produce maximum sustainable yield (B_{MSY}) is not known. Further, reliable estimates of sustainable yield are not known. However, the sub-areas with declines in commercial CPUE on the west coast form a significant percentage of the GMU 1 TAC. In addition, some, but not all, anecdotal information supports the view that the stock may be exposed to a sustainability concern in at least the sub-areas where commercial CPUE trends are declining. Other anecdotes indicate that the fishery is not as productive as it once was in East Northland.
- 8 Given the declining trends in commercial CPUE, the extent of anecdotal information on the decline in abundance, the size of the fisheries where the decline in abundance has occurred and the importance of the fishery to all interests, there is sufficient grounds to consider that there is a sustainability risk to the stock. However, it will be important to consider the weight given to the various sources of information about the status of the stock, particularly the observation that the decline in commercial CPUE is not apparent in all sub-areas of the stock.
- 9 Along with a potential sustainability concern, MFish also considers there is a related utilisation concern in some of the large western harbours where fishing catch and effort has been concentrated.
- 10 Most submissions from the commercial sector see no issues for which sustainability measures (specifically TAC and TACC reductions) are required in the GMU 1 stock. SeaFIC and Northern Inshore consider that MFish is using sustainability measures to try to address utilisation issues. These groups allege anecdotal and local concerns about sustainability and, especially, utilisation have triggered the review of catch limits for the GMU 1 stock. Te Ohu suggests that management reforms might be

progressed more productively as important case studies through objective-based management plans.

- 11 Conversely, recreational submissions consider that the stock is subject to considerable localised depletion, as commercial catch has not been restrained, and commercial fishers are capable of maintaining low stock levels given the availability of commercial harvesting rights, and their mobility. Forest & Bird and ECO similarly highlight the observed decline in commercial CPUE in western sub-areas of the stock, and the shift in commercial fishing effort to waters of East Northland. The Kaipara study group notes that the IPP does not conclude that the GMU 1 stock is depleted. The Kaipara study group acknowledges the observation in the IPP that the Kaipara Harbour is considered depleted.
- 12 The commercial CPUE index provides information to suggest that the relative abundance of grey mullet populations has declined within important sub-areas of the stock. These areas have been of importance historically for commercial fishing, and contribute a significant portion of the overall commercial landings for the stock. Whether the catch taken from these sub-areas is indicative of the relative distribution and abundance of grey mullet populations on a biological basis is unknown. However, the size of the Kaipara and Manukau Harbours, compared to other harbours or embayments within the stock, is likely to provide an extensive amount of grey mullet habitat.
- 13 MFish considers that if the TAC was fully caught on a consistent basis, there may be a risk that the stock is exposed to sustainability concerns at the level of the stock. The TACC component of the TAC has not been fully caught since the stock's introduction into the QMS, although current commercial catch is increasingly close to the TACC.
- 14 MFish considers the reduced availability of grey mullet in some important areas of the stock has manifested itself in conflicts within and between sector groups. While some additional measures may be required to address local issues, increasing the relative abundance of the stock is likely to assist in preventing localised depletion events being a regular occurrence throughout the stock.

Available Information

- 15 Many submissions were concerned about the nature and weighting given to information used to support the problem definition. The interpretation of the CPUE data, the performance of the commercial fishery since 2001–02, the application of anecdotal information, and the relative reliability and certainty surrounding the recreational catch estimates for the GMU 1 stock were all discussed.
- 16 MFish considers there is a range of information sources to consider in reaching your decisions about the relative risk that the GMU 1 stock may be exposed to if the TAC is fully caught on a consistent basis.
- 17 Section 10 of the Fisheries Act 1996 (the Act) 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. You should be cautious when information is uncertain, unreliable, or inadequate. 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. MFish considers that scientific information should be given more weight than anecdotal information that is inherently less certain.

- 18 There are a range of views about the relative performance of the fishery over the last 30 years. Recreational and commercial fishers are at odds over the status of the stock. Recreational fishers (and some commercial fishers) suggest there has been a decline in abundance, whereas other commercial fishers dispute this view. MFish consider that you should take into account the uncertainty in information on degree of risk to the stock when determining the costs and benefits of management action.
- 19 MFish agrees that more information would be useful in considering what action, if any, to take at this point in time. Some research is planned to update and improve the information available to fishery interests about the GMU 1 stock.

Tools to Manage Potential Sustainability Risk to Stock

- 20 As the current biomass relative to B_{MSY} is not known, nor is there reliable estimates of sustainable yield, it is not known whether commercial CPUE trends compel you to act immediately.
- 21 A range of tools are available to address sustainability concerns. The purpose of the TAC is to manage the stock at or above B_{MSY} or to move a stock whose biomass is below the B_{MSY} to at or above that level. An adjustment to the TAC, unless the reduction substantially reduced current catches, is not likely to address the conflict / localised depletion issues raised by submitters. However, any management action that results in an increase in abundance of grey mullet will have utilisation benefits.
- 22 Having considered the best available information, MFish believes that there are two approaches to progressing management of the GMU 1 stock. MFish proposes to either retain the TAC at 1 125 tonnes, or reduce the TAC to either 1 053 (revised Option 2) or 994 tonnes (revised Option 3).
- 23 A reduction to the TAC would be a risk adverse measure on the basis of possible declines in abundance associated with key historical portions of the stock. However, there is uncertainty in the degree of risk and the necessity of immediate action. In this scenario you should carefully consider the benefits of any reduction and particularly the impacts on existing users.
- 24 The benefits of a reduction to the TAC may include reduced risk of sustainability concern, and increased biomass. However, in the absence of estimates of sustainable yield, such benefits are uncertain. The cost of a TAC reduction is lost opportunity to harvest the resource. The cost would depend on the magnitude of the TAC reduction and whether the TAC was constraining total removals. In the short term, and depending on the TAC option you choose, the opportunities for use of the resource

may be either reduced to average recent annual catch or below that level. Where catch is reduced below existing levels, this may have consequences for the economic viability of existing commercial operations, and potentially the measures used to constrain non-commercial catch in the future.

- 25 Reducing the TAC would reduce the risk that the stock is exposed to some sustainability risk, in the absence of information about the size of the stock relative to the level that can produce maximum sustainable yield. Reducing total removals from the stock may correct declining trends in commercial CPUE, assuming that fishing effort is proportionally reduced over the stock, or at least in those areas where catch rates have fallen. Reducing total removals may also prevent commercial CPUE trends from declining in those sub-areas of the stock where such trends are presently stable, even where there is an increase in (commercial) fishing effort in those areas. MFish retains options to reduce the existing TAC by either 10 or 15%.
- 26 Retaining the existing TAC is a viable option to consider particularly given the degree of uncertainty around current sustainability risk to the stock. You may elect to choose this option should you consider that the sustainability risk to the stock is acceptable in the short to medium term, and/or there are other alternative options to explore.
- 27 MFish proposes to undertake an update of the commercial CPUE index so that trends are available through to the end of the 2005-06 fishing year. Some characterisation of the use of the fishery will also be undertaken as part of this proposed research. This research is likely to be available by early 2008.
- 28 Other research avenues (eg, tagging or movement studies, net selectivity work) have been discussed that may assist in the undertaking of a stock assessment. A stock assessment is also dependent on there being sufficient contrast in the commercial CPUE index. Completion of such research initiatives is unlikely before 2010, partly given the affordability of undertaking research work concurrently in the GMU 1 stock.
- 29 Undertaking the commercial CPUE index update project will give fishery interests an understanding of the relative performance of the stock in more recent years. However, it will not further our understanding about the status of the stock relative to Bmsy. The additional characterisation of the commercial fishery may assist in interpreting some of the trends in commercial CPUE.

Alternative Tools

- 30 Reducing the TAC is one management option to address the sustainability of the stock. Alternatively, you may elect to retain the TAC and explore alternative options that might better achieve longer term objectives for the fishery.
- 31 Submitters proposed or commented on a range of management measures they considered would address some of the problems in the GMU 1 stock, whether alongside a TAC reduction, or instead of any reduction. Proposals included developing an objectives-based management plan, sub-dividing the existing quota management area (QMA), a review of regulations, increasing the minimum net mesh size for commercial fishers, development of a compliance plan to address other

sources of fishing-related mortality, controls on recreational fishing, additional research on stock assessment and environmental impact, adoption of voluntary agreements between sectors to address local issues, and further engagement by MFish with community groups.

- 32 MFish has not had an opportunity to fully analyse the costs and benefits of several of the alternative measures suggested.

Allocation

- 33 When making a decision on the TACC for the GMU 1 stock, you need to make various allowances. Should you decide not to retain the status quo, MFish notes that an allowance for other sources of fishing-related mortality is recommended to be set for the first time. This allowance has been slightly increased in the Final Advice Paper, and other allowances and TACC recommendations differ slightly as a result.
- 34 The recreational allowance for the GMU 1 stock of 100 tonnes was set in 1998. At that time, the amount of recreational catch removed from the stock was considered to be in the order of 100-150 tonnes. The basis for selecting 100 tonnes as the recreational allowance was that it was the closest figure to the latter of the two recreational catch surveys of the time. Subsequently, an assessment of recreational catch estimates derived from the 1993–94 and 1995–96 recreational catch surveys has suggested that both surveys may underestimate the actual catch taken by recreational fishers.
- 35 You need to consider whether to partially or fully satisfy the needs of recreational interests when determining a recreational allowance. Either a proportional or non-proportional approach to determining the allowance relative to the TACC was proposed. The proportional approach outlined in the IPP would see the recreational allowance decrease to 90, 80, or 70 tonnes (options suffixed with the letter ‘a’).
- 36 The non-proportional approach was further subdivided into two options. The first retained the existing recreational allowance (options suffixed with the letter ‘b’), and therefore partially satisfied the needs of recreational interests. The second option increased the recreational allowance to 150 tonnes in order to satisfy the needs of recreational interests based on the best available information (options suffixed with the letter ‘c’).
- 37 Submitters do not agree on whether a proportional or non-proportional approach should be applied to the recreational allowance and TACC, should the TAC be reduced. Commercial submitters strongly support the proportional approach, while non-commercial fishers observe that the present state of the fishery has been disproportionately affected by the commercial sector, and that their ability to access the resource has diminished.
- 38 The estimates of recreational catch are inaccurate. MFish considers that the recreational use of the GMU 1 stock is likely to be within the range of 100–150 tonnes. Making an allowance of 150 tonnes, in contrast to the present allowance of 100 tonnes set in 1998, does not imply that recreational catch has increased. It would however alter the proportion of the stock that commercial fishers

have access to relative to the TAC. However, a recreational allowance of 150 tonnes might better reflect the actual recreational use of the fishery over the last 12-15 years. Conversely, the forgone ACE sales revenue, assuming that all ACE generated by the existing TACC is sold, varies from approximately \$107 000 (Option 2c at 711 tonnes) to \$135 500 (Option 3c at 654 tonnes).

- 39 Retaining the existing recreational allowance of 100 tonnes, while technically a non-proportional option, is less likely to affect commercial use of the resource, while still only partially satisfying recreational needs. The impact on recent commercial use (in comparison to harvesting rights under the existing TACC) is relatively neutral where any revised TACC is set near the annual average recent commercial catch of approximately 800 tonnes. The forgone ACE sales revenue, assuming that all ACE generated by the existing TACC is sold, varies from approximately \$57 000 (Option 2b at 811 tonnes) to \$85 000 (Option 3b at 754 tonnes).

