



Fisheries New Zealand

Tini a Tangaroa

Review of Sustainability Measures for Flatfish (FLA 2) for 2021/22

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1 Stock being reviewed

Flatfish (FLA 2), Pātiki - East Cape, Hawke's Bay, Wellington & Taranaki

yellow-belly flounder, *Rhombosolea leporine* (YBF);
sand flounder, *Rhombosolea plebeian* (SFL);
black flounder, *Rhombosolea retiaria* (BFL);
greenback flounder, *Rhombosolea tapirina* (GFL);
lemon sole, *Pelotretis flavilatus* (LSO);
New Zealand sole, *Peltorhamphus novaezeelandiae* (ESO);
brill, *Colistium guntheri* (BRI);
turbot, *Colistium nudipinnis* (TUR).

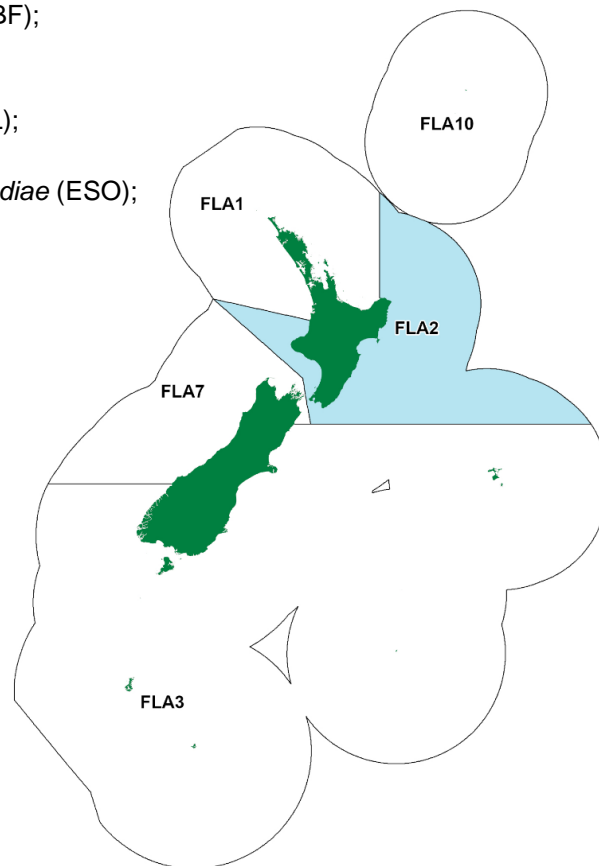
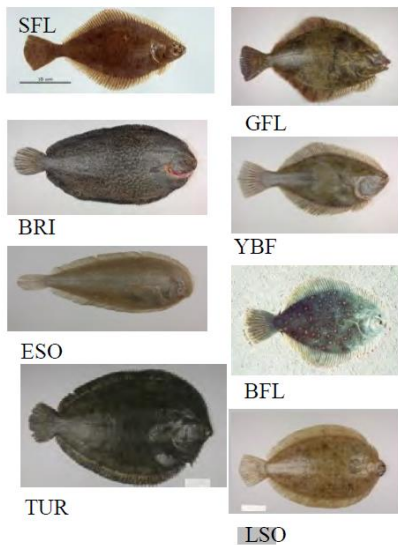


Figure 1: Quota Management Areas (QMAs) for Flatfish, with FLA 2 highlighted.

2 Summary

1. Fisheries New Zealand is reviewing the sustainability measures for flatfish in Quota Management Area FLA 2 for the 1 October 2021 fishing year (Figure 1).
2. FLA 2 is a shared fishery, targeted by customary Māori, recreational, and commercial fishers. Flatfish are principally taken by shallow water set netting by all sectors, bottom trawling by commercial fishers and by hand-spear by non-commercial fishers.
3. Fisheries New Zealand is proposing to set a Total Allowable Catch (TAC) for FLA 2, noting that currently only a Total Allowable Commercial Catch (TACC) is set. This will include the setting of allowances for customary and recreational fishers, as well as other sources of mortality caused by fishing.
4. As part of setting the TAC for FLA 2, consideration is being given to whether a reduction to the TACC is warranted. When FLA 2 was introduced to the Quota Management System (QMS) in 1986, the TACC was set relative to the highest catches on record. Since then, this level of commercial catch has not been reached.
5. Latest Catch Per Unit of Effort (CPUE) data indicates that catch has fluctuated around the target with a slight dip below target in the most recent year of the series. Given that the TACC is set much higher than current catch levels, there is uncertainty as to whether catch at the level of the TACC would be sustainable. This, coupled with declining commercial effort and increasing environmental concerns, has prompted Fisheries New Zealand to review this stock.

6. Fisheries New Zealand is proposing three options for FLA 2. All options propose to set a TAC for the first time, while two of the options also propose a decrease to the TACC.
- **Option 1** is to set a TAC for FLA 2 at 782 tonnes. The allowances are to be set based on best available information, as well as retention of the current TACC.
 - **Option 2** is to set a TAC for FLA 2 at 230 tonnes. Again, this will include allowances based on best available information, but for this option the TACC is proposed to be decreased from 726 tonnes to 200 tonnes. This option takes into account uncertainties around the TACC being sustainable and the environmental concerns in this fishery.
 - **Option 3** is to set a TAC for FLA 2 at 163 tonnes. Again, this will include allowances based on best available information, but for this option the TACC is proposed to be decreased from 726 tonnes to 136 tonnes. This option is more conservative than Option 2 and takes into account the most recent decline in CPUE.
7. Fisheries New Zealand is seeking feedback and submissions on the options proposed, or any other alternatives. It is noted that any change to catch settings will come into effect on 1 October 2021.

3 About the stock

8. Flatfish are shallow water swimmers found in inshore areas such as estuaries, mudflats, and sand flats. There are eight species of flatfish¹ and, for management purposes, the commercial landing codes for these species are combined into the flatfish complex code FLA.
9. Most of these flatfish species are fast-growing and short-lived, generally only surviving to three to four years of age, with very few reaching five to six years. Brill and turbot are longer lived, reaching a maximum age of 21 years and 16 years, respectively. Flatfish move offshore for first spawning at two to three years of age during winter and spring.

4 Quota Management System

10. The FLA 2 stock was introduced to the QMS for the 1986-87 fishing year alongside all other flatfish stocks. At that time only a TACC was required to be set. After some minor increases, the FLA 2 TACC has remained unchanged since 1989 at 726 tonnes and no TAC has been set.
11. Upon introduction, the FLA 2 TACC was set at a level of the highest catches on record. This approach recognised that flatfish abundance is highly variable year to year, due to biological characteristics, and a high TACC would allow for increased catches in years of higher abundance.
12. For more information about the QMS go to <https://www.mpi.govt.nz/law-and-policy/legal-overviews/fisheries/quota-management-system/>.

5 Legal basis for managing fisheries in New Zealand

13. The Fisheries Act 1996 provides the legal basis for managing fisheries in New Zealand, including the Minister's responsibilities for setting and varying sustainability measures. See the separate document *Overview of legislative requirements and other considerations* at <https://www.mpi.govt.nz/dmsdocument/43030> for more information.

¹ The eight species are: yellow-belly flounder, *Rhombosolea leporine* (YBF); sand flounder, *Rhombosolea plebeian* (SFL); black flounder, *Rhombosolea retiaria* (BFL); greenback flounder, *Rhombosolea tapirina* (GFL); lemon sole, *Pelotretis flavilatus* (LSO); New Zealand sole, *Peltorhamphus novaezeelandiae* (ESO); brill, *Colistium guntheri* (BR1); and turbot, *Colistium nudipinnis* (TUR).

6 Treaty of Waitangi obligations

6.1 Input and participation of tangata whenua

14. Input and participation into the sustainability decision-making process is provided through Iwi Fisheries Forums, which have been established for that purpose. Iwi Fisheries Forums ideally develop an Iwi Fisheries Forum Plan that describes how the iwi in the Forum exercise kaitiakitanga over the fisheries of importance to them, and their objectives for the management of their interest in fisheries.² Particular regard will be given to kaitiakitanga when making sustainability decisions. Iwi Fisheries Forums may also be used as entities to consult iwi with an interest in fisheries.
15. The proposal to review FLA 2 has been discussed with the Mai Paritu tai atu ki Turakirae Fisheries Forum (Mahia to Wairarapa) and Te Tai Hauāuru (Taranaki to Kāpiti).
16. The Mai Paritu tai atu ki Turakirae Fisheries Forum noted the potential need for a decrease in TACC and provided feedback regarding environmental impacts and the need to work with councils to solve water quality issues.
17. The Te Tai Hauāuru Fisheries Forum supported the setting of a TAC and associated allowances for customary and recreational fishers. It was noted that there was a substantial customary fishery for patiki both in the river estuaries in the region and along the beaches from Kāpiti to Whānganui. The concentration of fishing in these areas exposed this fishery to the environmental effects of land-based activities in the river catchments and adjacent coasts. The forum noted that sedimentation in the Manawatu was a problem, stating that toxic algal and other discharges from the rivers are likely to have adverse effects for the fishery. The forum did not comment specifically on what the TACC should be or settings for the allowances.
18. Fisheries New Zealand welcomes any further input from tangata whenua and the forums on the options presented in this paper and any other alternative options.

6.2 Kaitiakitanga

19. Information provided by Forums and iwi views on the management of fisheries resources and fish stocks, as set out in Iwi Fisheries Plans, are the way that tangata whenua exercise kaitiakitanga in respect to fish stocks.
20. Flatfish (pātiki) are valued taonga species for tangata whenua and have traditionally been a popular source of food that can be easily caught by netting and spearing. The flatfish and flounder species included under the QMS code of FLA 2 have been identified generally as taonga species under the Iwi Forum Fisheries Plan of Te Tai Hauāuru.
21. The Mai Paritu tai atu ki Turakirae forum does not yet have an Iwi Fisheries Plan, though flatfish are highly likely to be considered taonga. This is evident through an initiative being undertaken by a member of the Kohupātiki Marae near Clive who wanted a survey to better understand the existing population of pātiki, or black flounder, in the Clive River, which is still referred to by its traditional name, Ngaruroro Tawhito.
22. Fisheries New Zealand considers that the management options presented in this consultation paper are in keeping with the objectives of relevant Iwi Fisheries Plans which generally relate to the maintenance of healthy and sustainable fisheries but seeks further input from iwi to help inform this review.
23. Mātaitai reserves, taiāpure and temporary closures are customary management tools that also provide for kaitiakitanga. The Minister is required to take these into account when making allowances for customary non-commercial fishing interests. There are six mātaitai reserves (where commercial fishing is not permitted) and two taiāpure within FLA 2 (Table 1). Outside of the broad prohibition of commercial fishing activity within mātaitai reserves, none of these customary management areas have any restrictions on the taking of flatfish. The overall aim of the options is to ensure sustainability and the ongoing availability of flatfish.

² Not all Iwi Fisheries Forums have developed plans at this stage, though work in this area is ongoing.

Table 1: Customary fisheries areas within FLA 2.

Name	Management type
Hakihea Mātaitai	Mātaitai Reserve
Horokaka Mātaitai	
Toka Tamure Mātaitai	
Te Hoe Mātaitai	
Moremore Mātaitai(a)	
Moremore Mātaitai(b)	
Porangahau Taiāpure	Taiāpure
Palliser Bay Taiāpure	

7 Relevant plans, strategies, statements and context

7.1 National Inshore Finfish Fisheries Plan

24. Flatfish will be managed under the National Inshore Finfish Fisheries Plan (the Plan) once finalised. The Plan outlines the management objectives and strategies for finfish fisheries for the next five years and was consulted on in early 2020.
25. The Plan is aimed at progressing New Zealand towards more ecosystem-based fisheries management. Stocks are grouped within the Plan, with management approaches and objectives tailored accordingly for each group.
26. Flatfish fall under Group 2, which recognises that Fisheries New Zealand intend to manage these stocks to provide for moderate levels of use with moderate levels of information to monitor its stock status (e.g. a partial quantitative assessment compared against trends over time). To highlight this, Section 9 below discusses trends within the CPUE data and signals how this information has been used to help inform the proposed options.

8 Recent catch levels and trends

8.1 Commercial

27. Commercial reporting data including catch estimates, fishing effort data and landing information provide information on commercial catch trends.
28. The FLA 2 target fishery is mainly confined to the inshore domestic trawl and set net fleet, commercial catch effort data indicates this fleet makes up 76% of all commercial flatfish take, with 87% of this attributed to bottom trawl. There are three main areas of commercial interest in FLA 2, these are the Hawke's Bay where bottom trawl is the predominant fishing method and the Wellington Harbour and Manawatu river mouth where set netting is the predominant method. Estimated catch data suggests that the majority of FLA 2 catch comprises mainly sand flounder and New Zealand sole.
29. Flatfish bycatch in FLA 2 mainly occur from the targeting of gurnard, snapper and trevally. Other small quantities of bycatch are caught by offshore trawlers and include soles, brill and turbot.
30. The commercial catch history of FLA 2 is illustrated in Figure 2 below and shows a gradual decline in commercial catch since 1995, generally fluctuating between 200 and 300 tonnes. In the last five years, however, the average annual catch has occurred at lower levels (on average 131 tonnes).
31. Additional analysis indicates, the decline of the catch of flatfish is unlikely to be influenced by port prices as catch in recent years has continued to decline, despite a relatively high port price. Port prices have fluctuated between \$2 – \$5 but have shown a general increasing trend since 1996.

32. Fisheries New Zealand recognises that commercial fishers are not obliged to fully catch their entitlement, and there are various reasons unrelated to the abundance of the stock that can affect how much flatfish fishers choose to target (for example, ACE availability and market demand for the fish).

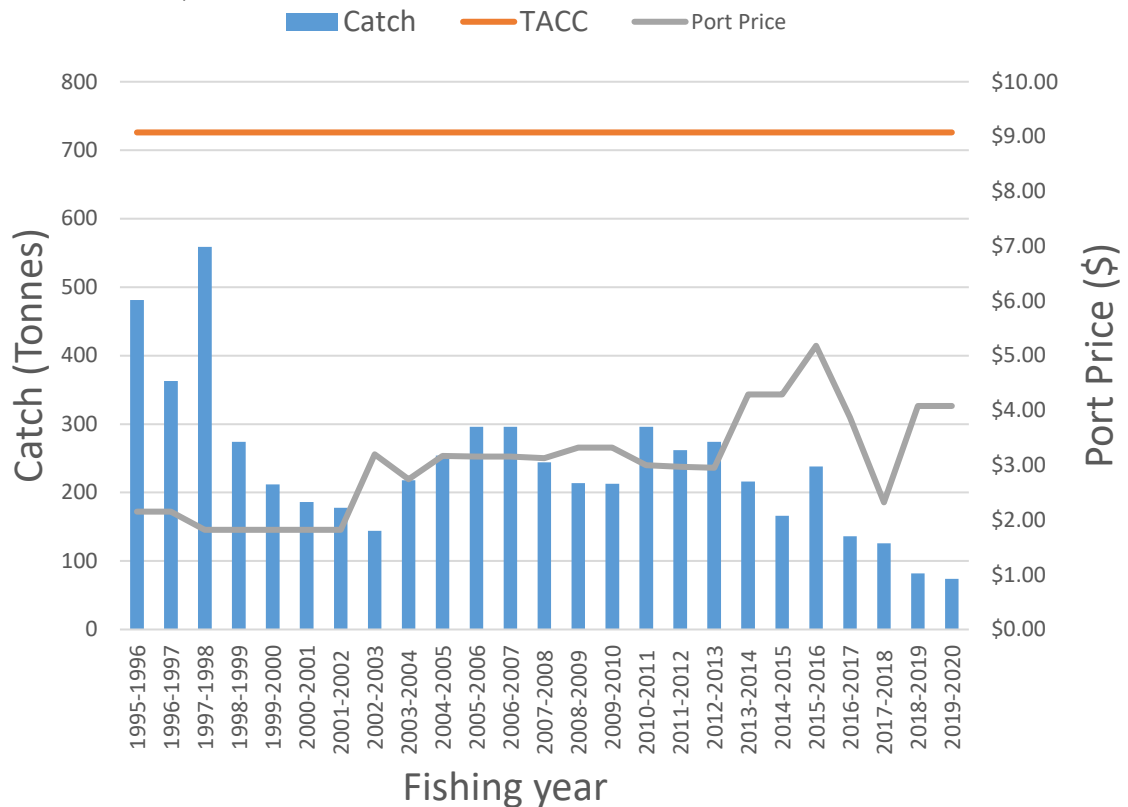


Figure 2: Annual catch in tonnes of flatfish since 1995 (blue bars), with the TACC indicated in orange. Port price is overlaid in grey.

8.2 Customary Māori

33. Current customary reporting for flatfish in FLA 2 is incomplete, with only 13 reported customary authorisations for FLA 2 over the last 10 years. Based on this information, being the best available information, customary reported catch is less than one tonne annually.
34. The incompleteness of customary reporting information is also influenced by the fact that large areas of FLA 2 have yet to be gazetted as rohe moana under the customary regulations. In these areas, customary catch is likely taken under regulations 50 and 51 of the Fisheries Amateur Fishing Regulations 2013, which do not have reporting requirements.
35. Fisheries New Zealand understands that current information on customary catch may not appropriately reflect the true take of flatfish for customary purposes and welcomes feedback from tangata whenua and iwi in order to address this knowledge gap.

8.3 Recreational

36. The National Panel Survey of Marine Recreational Fishers 2017-18 (NPS) highlights the importance of flatfish to the recreational sector. The NPS reports that flatfish are taken from most areas around New Zealand, with 23% of recreational catch taken from FLA 2.
37. Flatfish are caught by a variety of methods with netting being the most frequent (63%). Approximately 53% were recorded as being caught from the shore (including 'hand gathering from shore') which is distinct from most other finfish species, where catch by boat is predominant. Spearfishing accounted for 12% of catch, but it is likely much of this would have been caught via handheld spear (and should more accurately be counted as floundering from shore/hand gathering).

38. The main methods used to manage recreational harvest of flatfish are Minimum Legal Sizes (MLS) and daily bag limits. General spatial and method restrictions also apply, particularly to the use of set nets. The flatfish MLS for recreational fishers is 25 cm for all species, except sand flounder for which the MLS is 23 cm. Fishers can take up to 20 flatfish as part of their combined daily bag limit in the Central Fishery Management Area.
39. The best available information on current recreational catch is from the 2017/18 NPS, which estimated the total recreational catch of flatfish in FLA 2 to be 9.1 tonnes, totalling approximately 22,324 fish. Fisheries New Zealand acknowledges that recreational harvest is likely to fluctuate from year to year, and therefore requests feedback on recreational harvest estimates and the proposal for setting the recreational allowance.

9 Current state of the stock

40. Abundance of the FLA 2 fishery is assessed based on analysis of commercial CPUE information for the target bottom trawl flatfish fishery. The most recent CPUE update for FLA 2 occurred in 2018 and informs a CPUE series dating back to 1989/90.
41. An agreed B_{MSY}^3 compatible target proxy has also been established based on the mean CPUE over the period from 1989/90 to 2012/13. This includes a soft limit of 50% of target, a hard limit of 25% of target and an overfishing threshold of F_{MSY}^4 .
42. The 2018 update to the CPUE index is shown in Figure 3 and indicates that the relative abundance of flatfish has fluctuated around the target and without trend since 1989/1990. Current projections also indicate that the stock is likely to fluctuate around current levels, based on current catch.

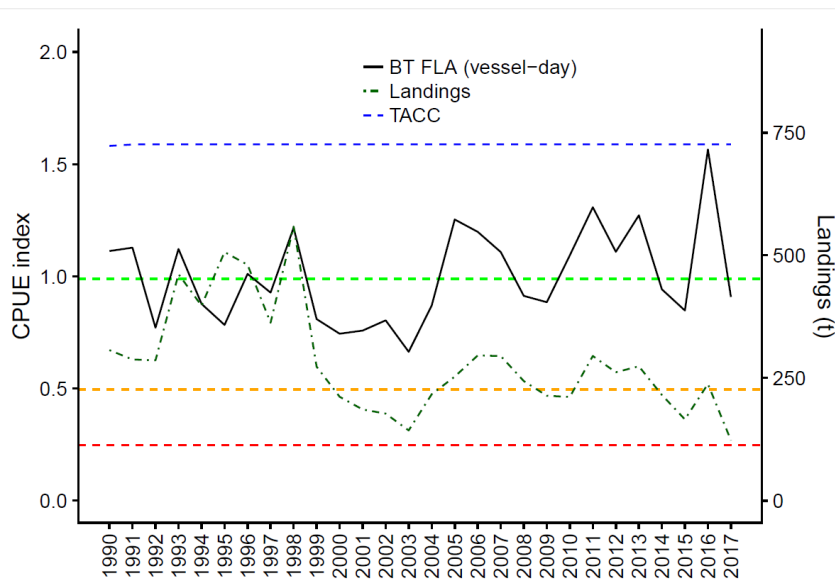


Figure 3: The accepted CPUE index for FLA 2 relative to the target (green), the soft limit (orange) and hard limit (red), together with the TACC and landings

43. Since the mid-1990s, fishing mortality and the exploitation rate (fishing intensity) of flatfish has trended downwards. Fishing intensity is currently below the 1990-2013 average and has been since 2000 (see Figure 4). This most likely indicates a shift in fishing behaviour which could be

³ B_{MSY} : The average stock biomass that results from taking an average catch of Maximum Sustainable Yield (MSY) under various types of harvest strategies. Often expressed in terms of spawning biomass, but may also be expressed as recruited or vulnerable biomass.

⁴ F_{MSY} : The fishing mortality rate that, if applied constantly, would result in an average catch corresponding to the MSY and a B_{MSY} . Usually expressed as an instantaneous rate.

due to a range of factors such as effort moving away from targeting flatfish and towards more lucrative species, or a general decline in the numbers of fishers in the fleet.

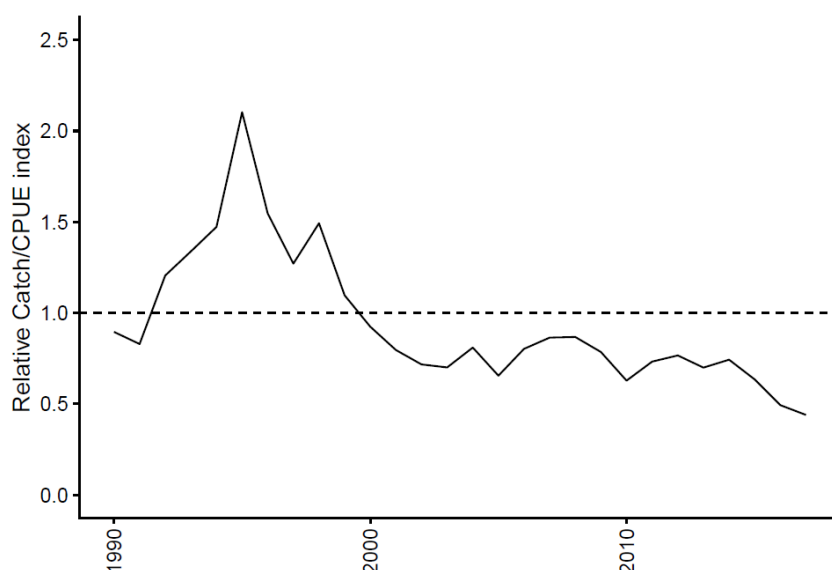


Figure 4: The relative exploitation rate (catch/CPUE) for FLA 2 standardised to a mean of one over the reference period 1990-2013.

44. Further analysis of the CPUE series indicates that the probability of current catch causing biomass to decline below soft or hard limits is unlikely. Additionally, the probability of current catch causing overfishing to continue or commence is unlikely.
45. Fisheries New Zealand's Fisheries Assessment Plenary (the Plenary) has assessed FLA 2 to be about as likely as not to be at or above the target. It also notes that FLA 2 is unlikely to be below the soft limit and also very unlikely to be below the hard limit. It should be noted that this assessment is based on catch levels from the 2016/2017 fishing year and not the TACC.
46. Historic catch levels appear to have enabled the stock to fluctuate around the target and, as a result, this level of catch is likely to be a good indicator for maximum sustainable yield (MSY) of FLA 2. With the TACC set at a level more than double that of actual commercial catch levels (since the late 1990s), there is uncertainty as to whether catch would be sustainable if it were to increase to the level of the current TACC. This is supported by the Plenary, which has assessed the probability of the TACC causing biomass to decline below the soft and hard limits to be unknown. The Plenary also notes it is unknown whether the TACC will cause overfishing to commence.

10 Current and proposed TAC, TACC and allowance settings

47. Three options are proposed for the TAC, TACC and allowances for customary, recreational and other sources of mortality caused by fishing.

Table 2: Summary of current and proposed catch settings for FLA 2 from 1 October 2021. All figures are in tonnes. Figures in parentheses indicate the change from current settings.

Option	TAC	TACC	Allowances		
			Customary Māori	Recreational	All other mortality caused by fishing
Current settings	-	726	-	-	-
1 (Set a TAC & allowances)	782	726	10	10	36
2	230	200 ↓ (526 t)	10	10	10
3	163	136 ↓ (590 t)	10	10	7

10.1 Option 1

48. Option 1 proposes to set a TAC for FLA 2 at 782 tonnes. This includes setting allowances for customary fishing, recreational fishing, and other sources of mortality caused by fishing, while also retaining the current TACC at 726 tonnes. This option reflects the approach that was taken when FLA 2 was introduced to the QMS by retaining a high TACC to provide for increased catch during periods of high abundance.
49. The allowance for customary fishing is proposed to be set at 10 tonnes. Recognising that customary catch data for FLA 2 is incomplete, 10 tonnes is considered likely to provide for current and aspirational use by customary fishers.
50. For recreational fishers, an allowance of 10 tonnes is also proposed. This is consistent with estimates from the most recent National Panel Survey which has estimated recreational catch of FLA 2 to be 9.1 tonnes.
51. An allowance of 36 tonnes is proposed for other mortality caused by fishing. This allowance includes mortality associated from fish escaping fishing gear, or illegal discarding and would equate to 5% of the TACC and recognises that flatfish are predominately taken as a target fishery.
52. When setting a TAC, the requirement is to set it at a level that maintains the stock at or above a level that can produce the MSY, or enables the level of any stock whose current level is below that which can produce MSY to be altered appropriately to ensure the stock is restored to or above a level that can produce MSY. Based on best available information, it is unknown whether a TAC at or greater than the current TACC will cause overfishing to occur or the stock to decline to unsustainable levels.
53. Commercial catch limits since the 1990s have remained well below the current TACC at less than 50%. Option 1 therefore places the greatest weight on providing for utilisation by retaining the TACC at elevated levels.
54. If the TACC was to be fully utilised, it is unknown whether this would meet the objective of maintaining the stock at or above the target and hence result in a sustainability risk to FLA 2. Additionally, Fisheries New Zealand is concerned that any increased catch at current levels of biomass would lead to added fishing pressure on other QMS species (e.g. gurnard, snapper and trevally), where greater levels of bycatch of these species could impact sustainability.

10.2 Option 2

55. Option 2 proposes a TAC of 230 tonnes be set and includes allowances for customary and recreational fishing that are consistent with those proposed for Option 1. Option 2 proposes to decrease the TACC to 200 tonnes, a level consistent with the average commercial catch reported over the last 10 years (203 tonnes). The proposed 10 tonne allowance for other mortality caused by fishing applies the same approach for all options (equal to 5% of the TACC).
56. Reducing the TACC to 200 tonnes recognises that annual catch has been below the TACC since introduction to the QMS and the assessment within the Plenary which indicates that it is unknown whether the current TACC is sustainable. Setting the TACC at the average for the last 10 years is likely to provide for a moderate level of increasing utilisation (comparative to recent years). This option also recognises that FLA 2 is currently fluctuating around the target based on a result of current catch levels and is not expected to decline.

10.3 Option 3

57. Option 3 proposes a TAC of 163 tonnes be set and includes allowances for customary and recreational catch that are consistent with those proposed for Option 1. Option 3 proposes to decrease the TACC from 726 tonnes to 136 tonnes. This is consistent with catch levels in the 2016-17 fishing year from which the 2018 CPUE update assessed the stock to be slightly below the target and projected to continue to fluctuate near the target under current catch. A seven tonne allowance for other mortality caused by fishing applies the same approach for all options (equal to 5% of the TACC).

58. Reducing the TACC to 136 tonnes recognises that annual catch has been below the TACC since introduction to the QMS and the assessment within the Plenary which indicates that it is unknown whether the current TACC is sustainable. The TACC proposed for Option 3 is likely to constrain future catch either to or near current catch levels and therefore limits utilisation of the fishery. This option adopts a cautious approach based on the 2017 CPUE data dropping below the target, despite fishing intensity declining over recent years.
59. In consideration of Option 3, Fisheries New Zealand notes that all flatfish stocks (including FLA 2) are listed on Schedule Two of the Act. Section 13(7) of the Act allows for an increase to the FLA 2 TAC within a fishing year, through the provision of additional 'in-season' ACE for commercial fishers and increases to non-commercial catch allowances. If Option 3 is the preferred option, this may help mitigate some of the cost to all fishing sectors who may experience that the TAC is constraining catch in years of high abundance.

11 Uncertainties and risks

60. The Plenary gives FLA 2 an overall assessment quality rank of "High Quality", but noted that the probability of the current catch or TACC causing biomass to remain below or to decline below the Hard or Soft limit to be "unknown" for the TACC and "unlikely" for current catch.
61. Flatfish are reported as a combined species. However, this does not accurately reflect the abundance or biological status of individual species. This is problematic for certain species in certain areas such as the black flounder, an important taonga species in the Hawkes Bay. The relative abundance of flatfish is estimated using the most prolific species and this has the unfortunate effect of overestimating abundance of smaller less prolific species populations.
62. Accurate estimates of customary catch are unknown.
63. The compounding effects of environmental factors including; dredging, industrial runoff and climate change are largely unknown.

12 Economic considerations

64. The economic impacts associated with the proposed changes are likely minimal as the TACC has, historically, not been fully utilised. Fisheries New Zealand acknowledges that the current TACC allows for the opportunity of further utilisation and economic growth, and this may be important to some fishers who are considering changing fishing behaviour, such as to offset losses caused by the Hector's and Māui Dolphin Threat Management Plan (TMP) decisions. However, provided recent catch trends continue, either of the proposed adjustments to the TACC will still allow for greater levels of utilisation than currently observed. It is therefore unlikely that fishers would need to adjust their fishing behaviour in response to these proposed changes.
65. Fisheries New Zealand acknowledges that reducing the TACC constitutes a reduction in the overall supply of ACE. This in turn may increase the price of ACE on the open market. A fisher dependent on the revenue from their current catch levels generated by their own quota package may need to source new ACE to maintain their current throughput. The associated costs of leasing new ACE therefore decreases their overall revenue for the same amount of fishing effort. However, it is unlikely that fishers would incur significant costs to seek out ACE packages, given the excess in supply to the market and the proposed options still being above current catch levels.

13 Environmental interactions

66. Flatfish are predominantly taken by target bottom trawl and set net activity in FMA 2. The key environmental interactions within this fishery concern marine mammals, seabirds, fish and invertebrate bycatch and benthic impacts, which must be accounted for when considering sustainability measures.

67. Fisheries New Zealand notes that environmental factors, such as the decline in water quality in enclosed bays and sheltered harbours, may be affecting flatfish recruitment. Fisheries New Zealand is also aware of dredging being undertaken in the Port of Napier which may distribute previously buried heavy metals throughout the water column. Fisheries New Zealand does not have a direct role in managing these environmental impacts. Nonetheless, Fisheries New Zealand monitor these activities and where necessary advocates for approaches and practices that mitigate impacts on fish species and the habitats they depend on.

13.1 Marine Mammals

68. The proposed changes to the TAC and TACC for flatfish are unlikely to result in any change to the current amount of fishing effort. Furthermore, in the last five fishing years (to the end of September 2020) there has been no reported non-fish protected species captures recorded by vessels targeting flatfish. The risk of the presented options increasing the adverse effects on marine mammals is considered low.
69. FLA 2 is an area associated with multiple marine mammal species including the Māui dolphin (on the West Coast of the North Island). Marine mammal interactions are reported by fishers or on-board observers and are closely monitored by Fisheries New Zealand. The residual risk to dolphins from trawling and set netting in FLA 2 is considered low and is largely managed under trawl restrictions and set net bans outlined in the TMP.

13.2 Seabirds

70. Management of seabird interactions with New Zealand's commercial fisheries is guided by the National Plan of Action – Seabirds 2020 (NPOA-Seabirds). The NPOA-Seabirds reflects New Zealand's obligations under international law to take into account the effects of fishing on associated species such as seabirds. The NPOA-Seabirds establishes a risk-based approach to managing fishing interactions with seabirds, targeting management actions at the species most at risk as a priority, but also aiming to minimise captures of all species to the extent practicable.
71. The proposed changes to the TAC and TACC for flatfish are unlikely to result in any increase to seabird interactions with vessels in the FLA 2 fishery. In the last five fishing years there have been no observed captures of seabirds, and no reported captures. Reporting of captures in FLA 2 involves high uncertainty due to limited observer coverage. However, best available information indicates an average estimated catch of four to eight seabirds per annum⁵.
72. The inshore trawl fishery is responsible for a substantial portion of risk to some at risk seabird species. However, the true contribution of inshore trawl to the overall risk is highly uncertain because of cryptic mortality. The inshore trawl and set-net fisheries in FMA 2 do not attribute any disproportionate levels of risk to seabird species relative to fisheries in other areas.

13.3 Fish bycatch

73. Flatfish are taken by fishing by non-selective fishing methods such as set net and bottom trawl. This is of particular importance for East Coast tarakihi, as it is currently undergoing a rebuild due to low abundance. Tarakihi has a wide depth profile and is caught in combination with several other species, including FLA 2. Decreasing the TACC for FLA 2 may restrict fishers from entering shallower waters to avoid traditional tarakihi habitat, thereby potentially increasing bycatch of tarakihi in TAR 2.
74. This should not prevent sustainability measures being put in place to ensure the sustainability of the FLA 2 fishery and Fisheries New Zealand is actively monitoring the East Coast tarakihi fishery to ensure actions to support the rebuild are being adhered to.

⁵ Captures of all birds in the flatfish trawl fisheries, in the FMA2 Central (East) and FMA8 Central (Egmont) areas, during the 2017-18 fishing year

13.4 Benthic impacts

75. Trawling can directly impact on biological diversity of the benthic environment. However, the proposed changes are not likely to significantly increase trawl effort. Bottom trawling in this fishery is also typically confined to areas that have been consistently fished over time (rather than areas of high biodiversity).
76. Research has characterised both New Zealand's benthic environment and the level of benthic impact from fisheries activity (Aquatic Environment and Biodiversity Annual Review 2018). The environmental impacts of fishing are summarised annually by Fisheries New Zealand. Fisheries New Zealand will continue to monitor the bottom trawl footprint of fisheries.

13.5 Habitats of Significance

77. Habitats of particular significance for fisheries management have not been identified in the area covering the FLA 2 fishery. With respect to FLA 2, river mouths and estuarine environments including shallow mudflats and sandflats are generally considered important nursery grounds for some species of juvenile flatfish.

14 Deemed values

78. Deemed values are the financial penalty paid by fishers for each kilogram of unprocessed fish landed in excess of a fisher's ACE holdings. The purpose of the deemed values regime is to provide incentives for individual fishers to acquire or maintain sufficient ACE to cover catch taken over the course of the year, while allowing flexibility in the timing of balancing, promoting efficiency, and encouraging accurate catch reporting. The Deemed Value Guidelines set out the operational policy Fisheries New Zealand uses to inform the development of advice to the Minister on the setting of deemed values.
79. The deemed value rates of FLA 2 are shown below in Table 3.

Table 3: Current deemed value rates (\$/kg) for FLA 2

Stock	Interim	Annual 100-120%	Differential rates (\$/kg) for excess catch (% of ACE)				
			120-140%	140-160%	160-180%	180-200%	200%+
FLA 2	1.2200	1.3600	1.6320	1.9040	2.1760	2.4480	2.7200

80. The average price paid by fishers during the 2019/20 fishing year for one kilogram of FLA 2 ACE was \$0.92. The 2019/20 port price index of FLA 2 was \$4.14/kg.
81. As the current deemed value rates of FLA 2 are set slightly above the average ACE price, no changes are proposed to the deemed value rates at this time. Fisheries New Zealand acknowledges that if the TACC is reduced, subsequent changes in fishing behaviour and the ACE market may result in the need for the deemed value to be re-evaluated in the future. Fisheries New Zealand welcomes any feedback on this.

15 Questions for submitters on options for varying TACs, TACCs and allowances

- Which option do you support for revising the TAC and allowances? Why?
- If you do not support any of the options listed, what alternative(s) should be considered? Why?
- Are the allowances for customary fishing appropriate? Why?
- We ask tangata whenua to provide any additional information you may have on customary catch.

- Are the allowances for recreational fishing appropriate? Why?
- Are the allowances for other sources of mortality appropriate? Why?
- What other management controls should be considered? Why?

82. Please provide detailed, verifiable information and rationale to support your views

16 How to get more information and have your say

83. Fisheries New Zealand invites you to make a submission on the proposals set out in this discussion document. Consultation closes at 5pm on 5 February 2021.

84. Please see the Fisheries New Zealand sustainability consultation webpage (<https://www.mpi.govt.nz/consultations/review-of-sustainability-measures-2021-april-round/>) for related information, a helpful submissions template, and information on how to submit your feedback. If you cannot access to the webpage or require hard copies of documents or any other information, please email FMSubmissions@mpi.govt.nz.

17 Referenced reports

Abraham E. R., Thompson F. N. (2015). Captures of all birds in the flatfish trawl fisheries, in the FMA2 Central (East) and FMA8 Central (Egmont) areas, during the 2017-18 fishing year: Retrieved from <http://psc.dragonfly.co.nz/2019v1/released/birds/flatfish-trawl/all-vessels/FMA2,FMA8/2017-18/>, Dec 1, 2020.

Age and growth of brill (*Colistium guntheri*) and turbot (*C. nudipinnis*) from the west coast South Island:

<https://fs.fish.govt.nz/Doc/22562/FLA200001%20Brill%20and%20Turbot%20West%20Coast%20South%20Island%20Final.pdf.aspx#:~:text=Brill%20and%20turbot%20are%20relatively,is%20likely%20to%20be%20higher.>

Assessment of the risk of commercial fisheries to New Zealand seabirds 2020:

<https://www.mpi.govt.nz/dmsdocument/39407/direct>

Deemed Value Guidelines (2020):

<https://www.mpi.govt.nz/fishing-aquaculture/commercial-fishing/operating-as-a-commercial-fisher/deemed-values/>

Draft National Inshore Finfish Fisheries Plan (November 2019):

<https://www.fisheries.govt.nz/dmsdocument/38045-national-inshore-fish-fisheries-plan-draft>

Fisheries New Zealand (2020). Fisheries Assessment Plenary, May 2020:

<https://www.mpi.govt.nz/news-and-resources/science-and-research/fisheries-research/>

Hector's and Māui Dolphin Threat Management Plan:

<https://www.mpi.govt.nz/news-and-resources/consultations/hectors-and-maui-dolphins-threat-management-plan-review/>

National panel survey of marine recreational fishers 2017–18:

<https://fs.fish.govt.nz/Page.aspx?pk=113&dk=24728>

National Plan of Action - Seabirds 2020:

<https://www.mpi.govt.nz/news-and-resources/consultations/national-plan-of-action-for-seabirds-2020>