



Fisheries New Zealand

Tini a Tangaroa

The Eastern Tarakihi Management Strategy and Rebuild Plan – Progress Report

Quarterly Report: 1 July – 30 September 2020

ISBN No: 978-1-99-002579-2 (online)

February 2021

Disclaimer

While every effort has been made to ensure the information in this publication is accurate, Fisheries New Zealand does not accept any responsibility or liability for error of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decisions based on this information.

This publication is available on the Ministry for Primary Industries website at

<http://www.mpi.govt.nz/news-and-resources/publications/>

© Crown Copyright – Fisheries New Zealand

Contents

Page

1.	Introduction	2
2.	Summary of Key Performance Indicators	2
3.	Regional Monitoring and Management Plans (RMMP)	3
4.	Catch Reduction	3
5.	Catch Spreading	6
6.	Reporting undersized tarakihi	8
7.	Move-on rule	8
8.	Voluntary closed areas	9
9.	Improved selectivity of nets	10
10.	On-board camera project	10
11.	Enhancing Science	11
11.1.	Automated identification and measurement of legally released fish	11
11.2.	East Coast South Island (ECSI) trawl survey	11
11.3.	Catch sampling	11
11.4.	Genetic research	11
11.5.	Stock assessment	12
12.	Appendix 1 – Voluntary Closed Areas	13




1. Introduction

The East Coast tarakihi stock (TAR 1 (east), TAR 2, TAR 3, and the Cook Strait portion of TAR 7) is currently undergoing a rebuild. As part of his decisions on the October 2019 Sustainability Round, the Minister of Fisheries decided to implement the industry and Te Ohu Kaimoana led [Eastern Tarakihi Management Strategy and Rebuild Plan](#) (the Rebuild Plan).

The Rebuild Plan is designed to rebuild East Coast tarakihi through two concurrent work streams; Management Measures and Enhancing Science. The Rebuild Plan, developed by Fisheries Inshore New Zealand, Te Ohu Kaimoana, and Southern Inshore Fisheries represents a commitment to the sustainable management of the East Coast tarakihi fishery.













As part of the Rebuild Plan, industry and Te Ohu Kaimoana are committed to quarterly reporting outlining progress towards meeting Key Performance Indicators (KPIs) in their plan. To assist industry with reporting and ensure transparency, Fisheries New Zealand has prepared this report to document industry progress towards meeting the KPIs outlined in their plan. As a result, this quarterly report should be read in conjunction with the Rebuild Plan.

To allow for monitoring of the initiatives in the Rebuild Plan, a framework to report on progress and adherence to measures is outlined in the table below. Please note that this report only reports on progress to date on the KPIs for each of the management measures. Most of the KPIs can only be measured at the end of the fishing year. This report provides a ‘progress’ indication using the following ‘traffic light’ system for the fourth quarter and the final assessment for the 2019/2020 fishing year¹.

	KPI not met for the quarter and/or the year.
	KPI not met for the quarter, but on track for the year
	KPI met for the quarter and/or on track for the year.

2. Summary of Key Performance Indicators

Four of the six KPIs have been met for both the fourth reporting quarter and the fishing year.

Management Measure	Milestones	KPI progress	
		4 th Quarter	Fishing year 2019/2020
Catch Reduction	<ul style="list-style-type: none"> Catch reduction progress & monitoring reporting. 	Milestone met 	Milestone met 
Catch Spreading	<ul style="list-style-type: none"> Cumulative reporting of TAR 1 & 7 E/W catches against voluntary catch spreading limits. Cumulative reporting of individual ACE allowances for TAR 1 & 7 E/W. 	Milestone met 	Milestone met 
Reporting sub-MLS	<ul style="list-style-type: none"> Summary reporting of the proportion of sub-minimum legal size tarakihi (sub-MLS TAR) by Quota Management Area (QMA). 	Milestone met 	Milestone met 
Move-on rule	<ul style="list-style-type: none"> Reporting of the number of move-on rule triggers by QMA, actions taken by fishers following the triggers & any follow-up actions taken. 	Not Met 	Not Met 
Voluntary Closed Areas	<ul style="list-style-type: none"> Reporting of the number of incidents of vessels crossing closed area boundaries while fishing & any follow-up actions taken. 	Not Met 	Not Met 
Selectivity Trials	<ul style="list-style-type: none"> Quarterly progress reports 	Milestone met 	Milestone met 

Industry are committed to using on-board cameras to give greater confidence in compliance. On-board cameras will be used to monitor the significant majority of the catch in TAR 2 and TAR 3, the Quota Management Areas with the highest level of juvenile tarakihi, by the end of 2020.

¹ 1 October 2019 – 30 September 2020.

Additional measure	Milestones	KPI progress
On-board Camera Project	<ul style="list-style-type: none"> On-board camera monitoring of majority of the catch in TAR 2 & TAR 3. 	Reporting to commence in 2021

Quarterly Reporting for 1 July 2020 – 30 September 2020

3. Regional Monitoring and Management Plans (RMMP)

Regional management and monitoring plans apply to both operational measures and research projects for the relevant regions. They bring measures together and promote the implementation of work streams to ensure regional management action is taken in a timely and effective manner.

Implementing measures regionally will better reflect the nature of the specific area as a part of the overarching Rebuild Plan and improve the ability to manage the complexity of the fishery as a whole.

Key Performance Indicator (KPI): 90% of quota share signatories (all regions/sub-stock areas)	1 July – 30 Sept 2020	Fishing year
TAR 1	●	●
TAR 2	●	●
TAR 3	●	●
TAR 7	●	●
Total	●	●

Supporting information:

	Number of quota holder signatories/total quota holders	% of total quota shares
TAR 1	31/86	90.27%
TAR 2	17/38	91.42%
TAR 3	17/34	97.56%
TAR 7	20/49	91.22%
Total	81/207	92.62%

4. Catch Reduction

In October 2019, the Minister of Fisheries decided to reduce the total allowable commercial catch (TACC²) for TAR 1, TAR 2, TAR 3 and TAR 7 for the second consecutive year. The TACCs for the 2018/19 and the 2019/20 fishing years following the Minister's decisions are:

	2018/19 TACC (tonnes)	2019/20 TACC (tonnes)
TAR 1	1,097	1,045
TAR 2	1,500	1,350
TAR 3	1,040	936
TAR 7	1,042	1,024
Total	4,679	4,355

A comparison of the catch to date versus TACC by month across the relevant tarakihi stocks is provided in the sections below. In addition, the cumulative percentage of the Annual Catch Entitlement (ACE³) caught by month is compared to the available ACE, which allows for monitoring and analyses of any discrepancies.

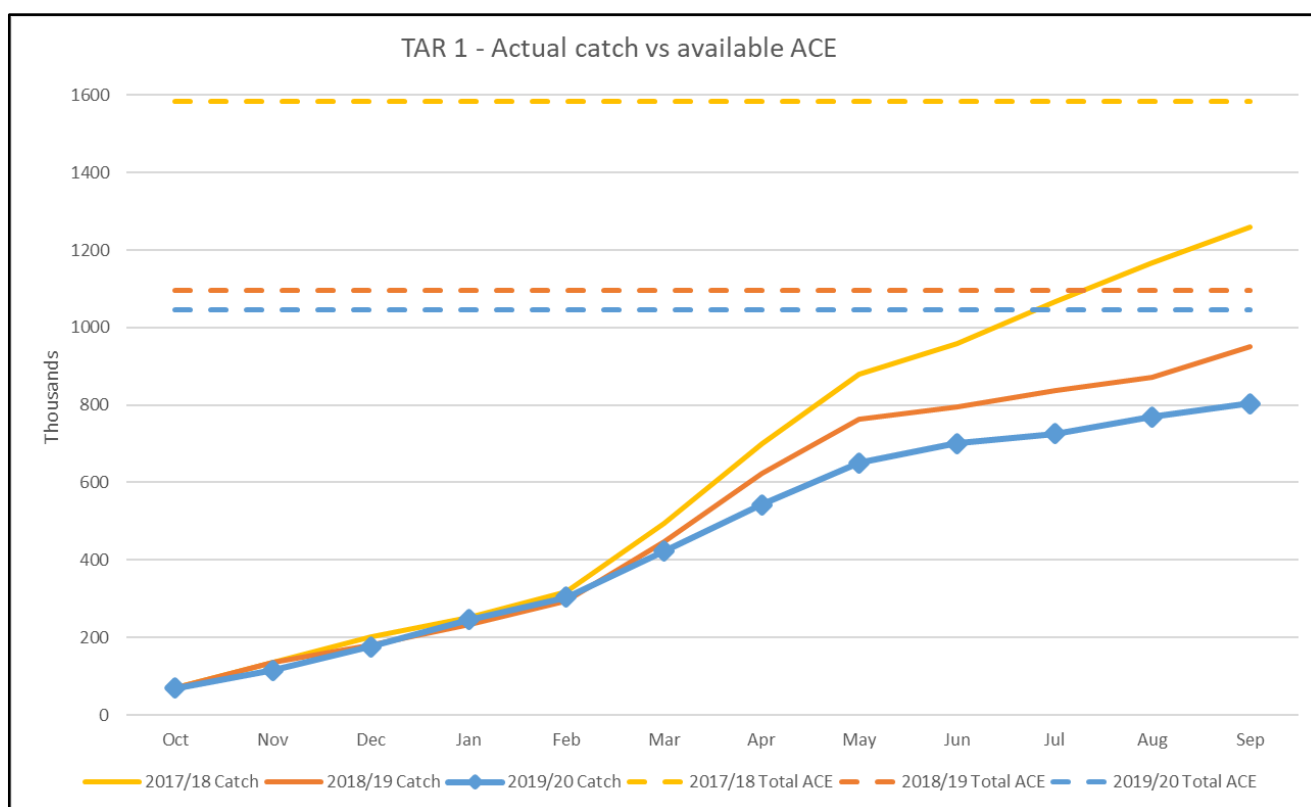
² TACC is the quantity of each fish stock that the commercial fishing industry can catch in a given year.

³ ACE is the right to catch a certain amount of a fish stock during the fishing year. For most stocks, if a fisher doesn't catch their full ACE amount during the fishing year, they will get a certain amount of it issued to them the following year – this is called an under-fishing allocation. Therefore, it is possible that the 'available' ACE for a fish stock could exceed the TACC in a given fishing year.

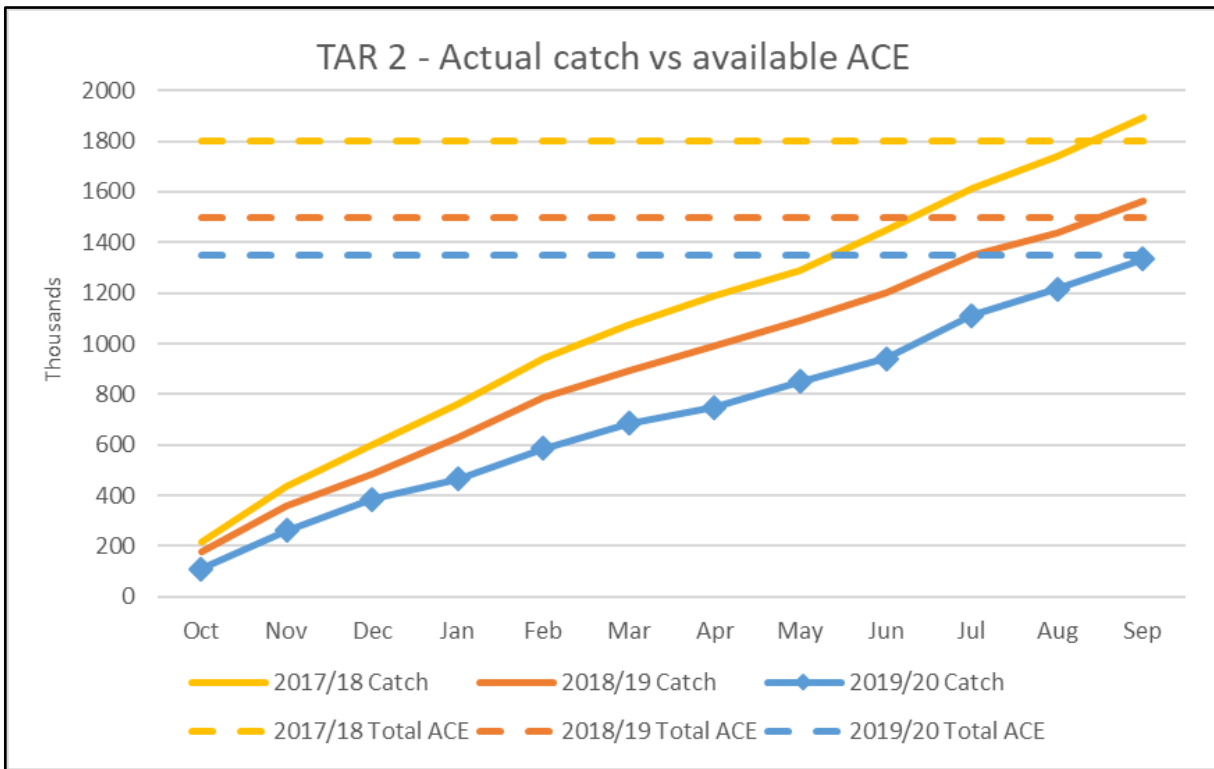
Key Performance Indicator (KPI)	1 July – 30 Sept 2020	Fishing year
Fish within the allocated ACE	●	●

Supporting Information:

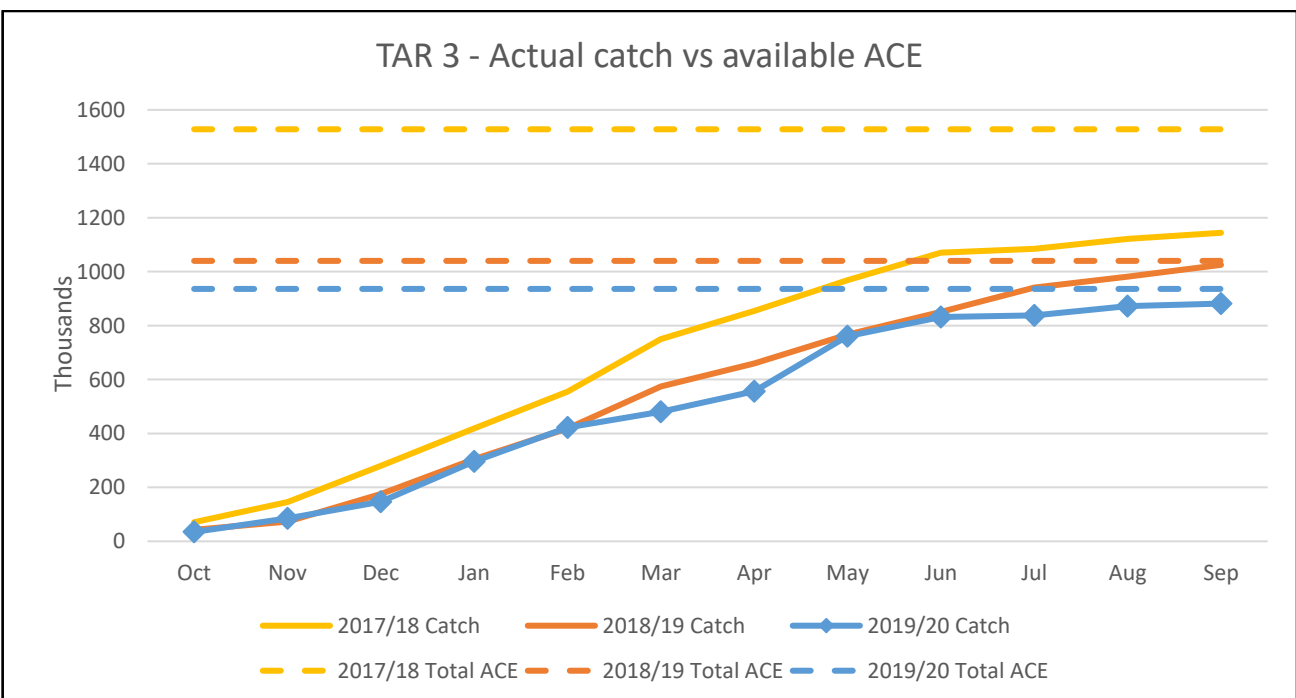
TAR 1 - Actual catch vs. TACC		July '20	Aug '20	Sept '20
2019/20	Catch per Month (kg)	24,684	43,443	34,352
	Cumulative % TACC caught	69.4%	73.6%	76.8%
2018/19	Catch per Month (kg)	42,971	33,723	78,896
	Cumulative % TACC caught	76.3%	79.4%	86.6%
2017/18	Catch per Month (kg)	108,195	99,492	91,533
	Cumulative % TACC caught	73.8%	80.6%	87.6%



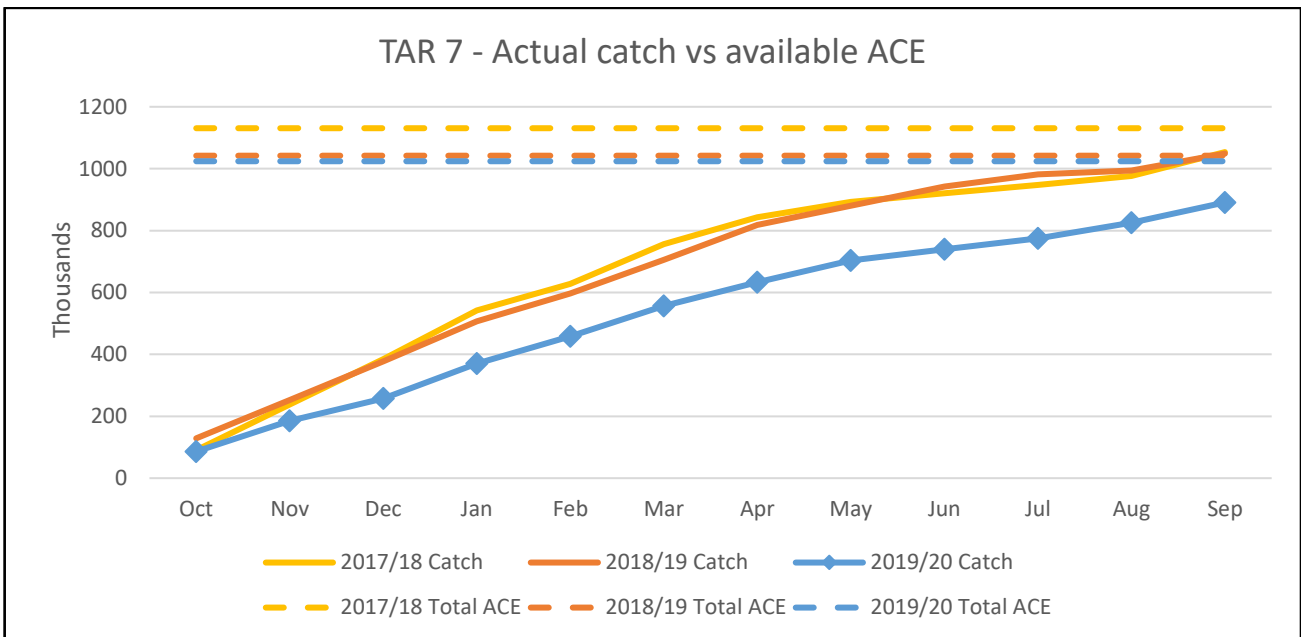
TAR 2 - Actual catch vs. TACC		July	Aug	Sept
2019/20	Catch per Month (kg)	170,596	104,938	118,015
	Cumulative % TACC caught	82.4%	90.1%	98.9%
2018/19	Catch per Month (kg)	146,343	88,792	125,595
	Cumulative % TACC caught	89.9%	95.9%	104.2%
2017/18	Catch per Month (kg)	168,436	124,269	157,544
	Cumulative % TACC caught	89.9%	96.8%	105.5%



TAR 3 - Actual catch vs. TACC		July	Aug	Sept
2019/20	Catch per Month (kg)	5,724	34,878	9,476
	Cumulative % TACC caught	89.4%	93.2%	94.2%
2018/19	Catch per Month (kg)	89,338	40,708	44,125
	Cumulative % TACC caught	90.4%	94.3%	98.6%
2017/18	Catch per Month (kg)	14,019	37,317	22,366
	Cumulative % TACC caught	77.3%	80.00%	81.5%



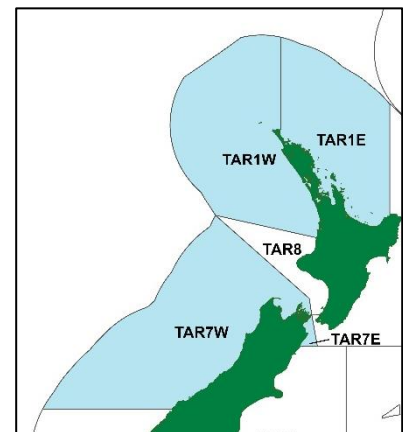
TAR 7 - Actual catch vs. TACC		July	Aug	Sept
2019/20	Catch per Month (kg)	35,168	51,295	65,349
	Cumulative % TACC caught	75.6%	80.6%	87.0%
2018/19	Catch per Month (kg)	38,977	12,559	54,844
	Cumulative % TACC caught	94.2%	95.4%	100.6%
2017/18	Catch per Month (kg)	26,548	29,572	76,739
	Cumulative % TACC caught	87.0%	89.7%	96.8%



5. Catch Spreading

The East Coast tarakihi stock includes the eastern portions of both TAR 1 and TAR 7 (referred to as TAR 1E and TAR 7E). The catch spreading measures relate to the division of catch within these two Quota Management Areas (QMAs)⁴ to:

- Restrict the take from each of the sub-QMAs to prevent a disproportionate amount of the TACC being taken out of the East Coast portion of TAR 1 and TAR 7; and
- Ensure that the TACC reductions are effectively aimed at increasing the East Coast stock.



	Total ACE (tonnes) 2019/20	Total Eastern ACE (tonnes) available 2019/20	Eastern sub-area % cumulative ACE caught at the end of fourth quarter ⁵	Total Western ACE (tonnes) available 2019/20	Western sub-area % cumulative ACE caught at the end of fourth quarter ⁴
TAR 1	1,045	465,990	97%	579,010	63%
TAR 7	1,024	161	98.4%	863	85%

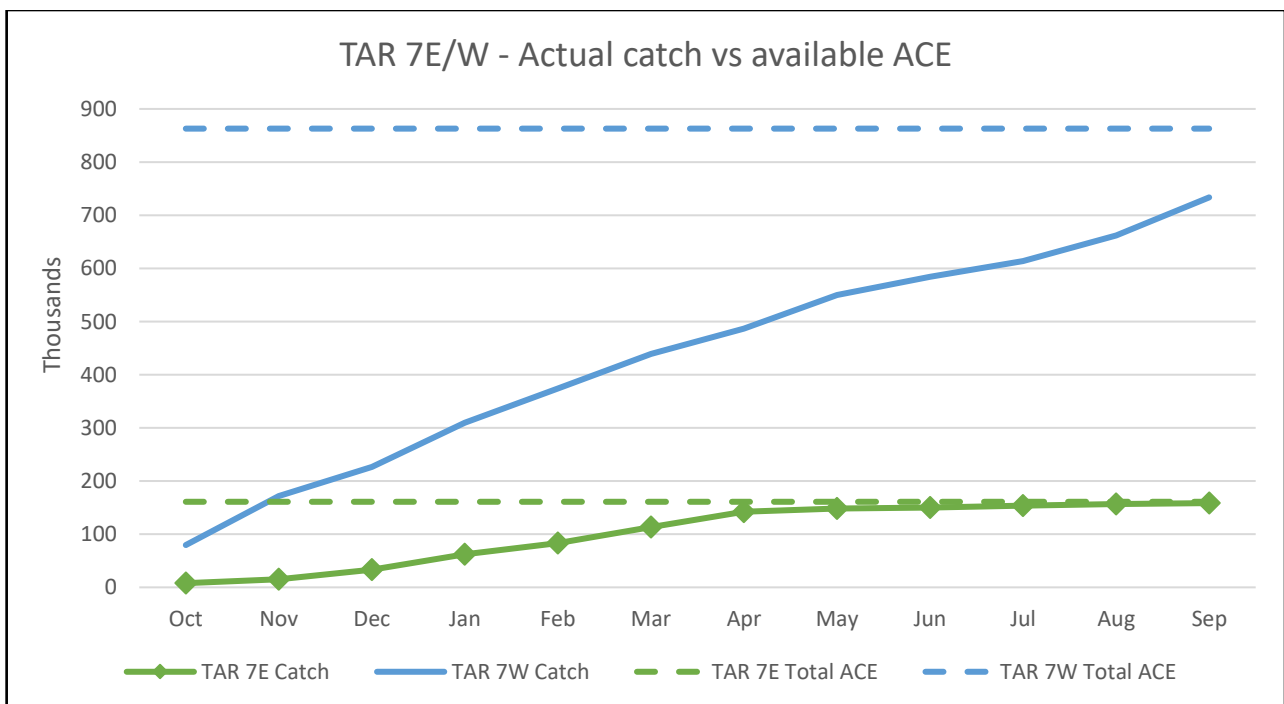
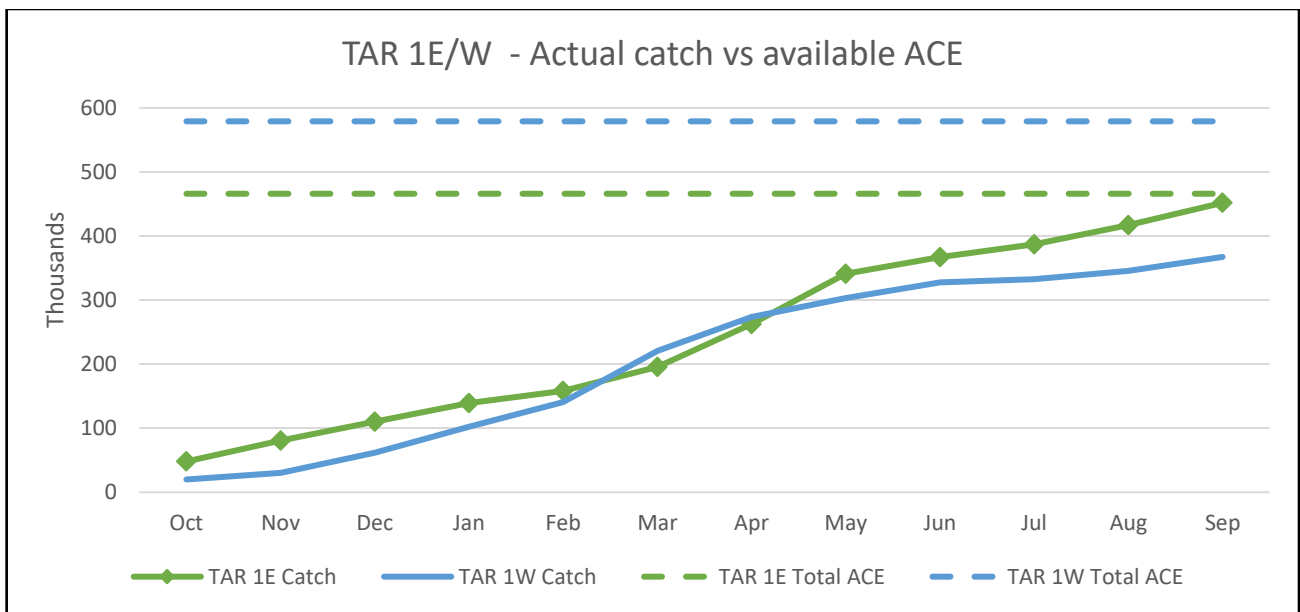
⁴ TACC is usually for a single stock across an entire QMA. However, in the case of TAR 1 and TAR 7, the geographical area of these QMAs include both the West Coast tarakihi stock (TAR 1W and TAR 7W) and the East Coast stock (TAR 1E and TAR 7E).

⁵ From 1 July 2020 to 30 September 2020.

Key Performance Indicator (KPI):

	1 Jul – 30 Sept 2020	Fishing year
TAR 1		
90% of quota shares sign to voluntary split east/west for TAR 1	●	●
80% adherence to providing east/west catch reports for TAR 1 in line with east/west split arrangements	●	●
TAR 7		
90% of quota shares sign to voluntary split east/west for TAR 7	●	●
80% adherence to providing east/west catch reports for TAR 7 in line with east/west split arrangements	●	●

Supporting information:



6. Reporting undersized tarakihi

Reducing catch of undersize tarakihi (sub-MLS TAR) ensures that a greater portion of the juvenile tarakihi remain in the fishery and subsequently contribute to a faster rebuild. Recording information on undersize tarakihi catch is essential to develop effective selectivity measures such as: mesh size, orientation, move-on rules, and spatial and temporal management measures.

Key Performance Indicator (KPI)	1 Jul – 30 Sept 2020	Fishing year
100% compliance with undersize tarakihi reporting	●	●

Supporting information:

The table below provides summaries of the number of events that reported landings of TAR 1, 2, 3 or 7, and the proportion of juvenile tarakihi by area and method. Data from area-method strata with less than three vessels or clients have been omitted from tables to ensure privacy of individual fishers.

	Method	Number of events	Number of vessels	Total TAR catch (kg)	Total sub-MLS TAR catch (kg)	% sub-MLS TAR/TAR
TAR1	Bottom Longline	824	35	17,575	0	-
	Bottom Trawl	548	16	75,038.6	26.3	0.03
	Danish Seine	66	4	2,256	0	-
	Precision Bottom Trawl	212	3	11,218	6	0.05
	Setnet	22	4	120	0	-
	Other Methods	55	6	917	1	0.1
TAR2	Bottom Longline	150	7	1,295		-
	Bottom Trawl	1077	22	361,684.1	282.6	0.08
	Setnet	13	6	33		-
	Other Methods	18	6	339.1		-
TAR3	Bottom Trawl	314	15	45,610.1	897	2.0
	Pot	32	7	193.5		-
	Setnet	26	5	82.1		-
	Other Methods	87	8	7,342.2		-
TAR7	Bottom Longline	127	11	1,400.2		-
	Bottom Trawl	837	30	139,145.75	21	0.01
	Midwater Trawl	5	4	2,303		-
	Setnet	12	3	31		-
	Other Methods	18	7	19		-

7. Move-on rule

The East Coast tarakihi fishery will be operating move-on rules where high concentrations of undersize tarakihi are found. These are also included in the Regional Management and Monitoring Plans. The move-on rule applies when both of the following triggers are met:

- Tarakihi is greater than 10% of the total catch in any haul; and
- Undersize tarakihi is greater than 15% of the tarakihi catch by weight.

If a move-on rule is triggered, the fisher is required to move at least one nautical mile (NM) horizontally, or ten meters deeper than all parts of the line where the small fish were encountered.

Key Performance Indicator (KPI)	1 July – 30 Sept 2020	Fishing year
90% of quota shares as signatories to Regional Management and Monitoring Plans (RMMP)	●	●
90% adherence to move-on rule	●	●

Supporting Information:

From 1 July to 30 September 2020, the move-on rule was triggered twice by the same vessel in TAR 3. The move-on rule was not adhered to as the vessel commenced the following event within 1 nautical mile of where the previous trip ended.

The operator of the vessel was contacted and reminded of the Rebuild Plan and voluntary measures in place. Industry will continue to engage with fishers about the Rebuild Plan and implementation of the voluntary measures.

Month	Sub-stock	# move-on rule triggers (events)	Signatory to RMMP (Y/N)	Adherence (Y/N)	Action
August 2020	TAR 3	2	Y	N	Vessel operator contacted and informed of the voluntary measures in place as a part of the rebuild strategy.

Over the entire fishing year the move on rule was triggered four times by signatories to the RMMP, once in the first quarter, once in the second quarter and twice in the fourth quarter with the move-on rule being adhered to 50% of the time (two of the four triggers) meaning this KPI has not been met for the year.

8. Voluntary closed areas

The Regional Management and Monitoring Plan (RMMP) for TAR 2 includes four voluntary closed areas where high abundance of juvenile tarakihi has been identified (refer Appendix One). Voluntary compliance by all signatories to not trawl in those areas for tarakihi will be monitored and reported on a quarterly basis.

All non-adherence that occurred in this quarter are considered to represent minor incidents, as the events were either along the edge of, or slightly crossed the corner of a closed area, with majority of each tow conducted outside of the area.

One of the incidents in this quarter was related to a signatory of the RMMP. Communication will continue throughout the fishing year to ensure the importance of avoiding these areas is understood by all relevant parties. This includes phone calls to operators to let them know when they have breached a voluntary closed area.

In total there were 1077 trawl events within TAR 2 this quarter and when these breaches are put into this context, total adherence to this KPI by both signatories and non-signatories equates to over 98% adherence for the quarter and over 99% adherence for the year.

Due to the requirement for 100% compliance by signatories of the RMMP, and the fact that this KPI has been breached once in the fourth quarter and a total of three times throughout the fishing year by signatories of the RMMP, this KPI has not been met for this quarter or the year.

During this quarter, analysis of adherence to the voluntary closed areas resulted in the identification of some technical errors associated with the Geospatial Position Reporting (GPR). These include:

- GPR data not transmitted to the service provider due to device failure or limited mobile reception
- GPR data transmitted to the GPR service provider, but not to MPI
- GPR data transmitted, but several data points were missing due to limited mobile reception ('broken event track')
- Incidental reporting error for the start and/or end of event

These errors have the potential of showing false 'adherence' or 'non-adherence'. All events have been manually reviewed to identify any potential errors to ensure correct reporting of the KPI.

Key Performance Indicator (KPI)	1 July – 30 Sept 2020	Fishing year
90% of quota shares signatories to Regional Management and Monitoring Plans (RMMP) in TAR 2	●	●
100% adherence by signatories	●	●

Supporting information:

Month	Voluntary closed area (Map Number)	# of trawl events crossing/within voluntary closed area	Was sub-MLS TAR caught? (Y/N)	Signatory to RMMP (Y/N)
July 2020	1	2	N	N
	2	5	Y – 3/5	N
	3	1	N	Y
	4	3	Y – 1/3	N
August 2020	2	3	N	N
September 2020	2	4	N	N

9. Improved selectivity of nets

As a part of an ongoing commitment to gear innovation, the Rebuild Plan includes a three-phase process to improve selectivity of nets in East Coast tarakihi (“how we fish”). The work on selectivity is applied research to better understand ways of increasing gear selectivity to reduce the amount of juvenile tarakihi caught and enhance the yield per recruit⁶ of tarakihi. This will be achieved by adjusting nets so larger fish are retained while undersize tarakihi are not.

Progress to date:

- The 2019/20 selectivity trial plan has been provided to the Minister and FNZ.
- TAR2 and TAR3 trials were completed in September and October 2020.
- Analysis is being conducted to determine the impact of this change in selectivity and the next steps for further selectivity trials.

10. On-board camera project

The purpose of the on-board camera project is to provide verification of the scale of juvenile tarakihi catches in TAR 2 and TAR 3.

Progress to date:

- Industry submitted its proof of concept to the Minister in December 2019
- Minister responded to industry proof of concept proposal on 9 March 2020
- Industry progressing this work and working with FNZ on the project approach:
 - In September 2020 industry deployed EM systems on five pilot vessels as part of Tranche One (2 in TAR2 and 3 in TAR3) (already achieving 11% of TAR2 catch and 41% of TAR3).
 - Implementation is continuing during December and January, with five systems being installed on TAR2 vessels (achieving 46% of TAR2 catch) and four systems installed on TAR3 vessels (achieving 65% of TAR3 catch).
 - In February and March 2021, another six EM systems on TAR2 vessels to achieve 84% of TAR2 catch and another three EM systems on TAR3 vessels to achieve 81% of TAR3 catch will be deployed.

⁶ The amount of juvenile fish entering the fishery each year.

11. Enhancing Science

11.1. Automated identification and measurement of legally released fish⁷

Fish below minimum legal size are required to be returned to the water, so small tarakihi are rarely measured. This means the age-structure of smaller fish below the minimum legal size is not well known.

A Discard Chute for Automated Measuring ('Discard Chute') will provide an efficient way of measuring all fish on deck, including sub-MLS fish, in an efficient and accurate manner that does not require additional personnel on a vessel, which is ideal for small inshore vessels.

The outcome will be a more well-informed distribution of lengths for the whole size range of tarakihi. This will better inform stock assessments and provide information on future recruitment into the fishery. This can then be used to inform projections of how the fishery is rebuilding.

Progress to date:

- Proposal approved for SFFF⁸ funding in July 2020.
- Proposal includes working with international experts and collaborating with range of government and non-government stakeholders.
- Field work to be conducted on vessels will most likely involve training feature recognition software and determining any issues with the placement of equipment on small vessels.
- Work expected to commence in January 2021.

11.2. East Coast South Island (ECSI) trawl survey

The ECSI trawl survey is considered to provide the most accurate measure of abundance for many South Island inshore species. A long-term time series of fishery-independent relative abundance indices is a useful tool to monitor fish stocks, including tarakihi. This data also supports analyses of commercial catch per unit effort (CPUE) as an input into stock assessments for these stocks.

In addition, surveys provide early indications of year-class strength, changes in maturity-at-age, growth and mortality. The information collected provides indications of any potential changes to the productivity of the stock that should be considered when making management decisions.

Progress to date:

- The latest ECSI trawl survey was conducted in 2018, with the next survey scheduled for 2021. The timing of this survey has been delayed due to COVID-19.

11.3. Catch sampling

The stock assessment is strongly informed by the age composition data from the commercial fishery catch sampling as it informs stock structure and provides information on cohort and recruitment strength. NIWA, contracted by MPI, is conducting a two-year catch sampling project to obtain this information.

Progress to date:

- Current catch sampling has been conducted since October 2018.
- Results will be included in the new stock assessment for tarakihi.

11.4. Genetic research

The objective of the genetic research is to better understand the connectivity of tarakihi through genetics in order to determine the structure of the New Zealand tarakihi stock.

⁷ Formally referred to as the 'Discard chute work (Sub-Minimum Legal Size)

⁸ The Ministry for Primary Industries 'Sustainable Food and Fibre Futures Fund'.

Progress to date:

- Preliminary genetic research focused on investigating mitochondrial DNA has concluded that New Zealand tarakihi is a single genetic population, and that Australian tarakihi and New Zealand king tarakihi are genetically different.
- Research is now underway to analyse the entire tarakihi genome to provide a more detailed assessment of tarakihi connectivity within New Zealand.
- To date 1,400 specimens from 19 regions, 60 fish from Australia and four king tarakihi have been collected. The samples were processed to collect genetic material and length, weight and sex data.
- Results of this research are scheduled for mid-2021 and will be incorporated as appropriate, into the new stock assessment for tarakihi.

11.5. Stock assessment

The next stock assessment is currently underway with results due for completion by November 2021. The stock assessment will bring together best available peer reviewed information on East Coast tarakihi, provide an up to date assessment of stock abundance and provide the first insights on the level of success of the rebuild of East Coast tarakihi.

12. Appendix 1 – Voluntary Closed Areas

