

# KAIKŌURA / CANTERBURY PĀUA (PAU3)

## FISHERIES PLAN

SEPTEMBER 2019

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## Part One: Introduction

### Context

PAU3 is the pāua fishery along the Kaikōura and Canterbury coasts off the eastern side of the South Island. It extends from the mouth of the Clarence River in the north to the mouth of the Waitaki River in the south. The fishery is highly valued by customary, commercial and recreational fishers. Pāua is a taonga for Ngāi Tahu. Pāua is also important for recreational fishers, particularly along the Kaikōura coast. The commercial fishery is managed under the Quota Management System (QMS) as PAU3, comprising blackfoot pāua (*Haliotis iris*) and yellowfoot pāua (*H. australis*).

For many years following its introduction into the Quota Management System (QMS) in 1986, PAU3 was a productive, sustainable and stable fishery with a Total Allowable Commercial Catch (TACC) of 91.6 tonnes. However, in November 2016 the Kaikōura earthquakes caused significant uplift along parts of the PAU3 coastline north of the Conway River. Along with mortality of adult and juvenile pāua, the earthquakes damaged pāua habitat. Long term implications have not yet been quantified, but may include impairment of recruitment as a result of juvenile habitat loss and lowering of carrying capacity and available yield. Following the earthquakes, the area from Conway River to the northern boundary of PAU3 (and beyond, to Marfells Beach in PAU7), was closed for the taking of shellfish (excluding scampi and rock lobster) and seaweed<sup>1</sup> and the PAU3 TACC was reduced by 50% to 45.8 tonnes.

The main issues facing the fishery are therefore:

- Maintaining a sustainable fishery in the southern (open) portion of PAU3;
- Protecting the northern (closed) portion of the fishery while stocks rebuild;
- Developing a management regime to enable the closed area to be re-opened to pāua fishing on a precautionary, adaptive basis; and
- Enabling the entire PAU3 fishery to be managed sustainably at its full productive potential.

### Scope

The Fisheries Plan has been developed by industry representative body PauaMAC3 on behalf of all PAU3 quota owners and harvesters, and with the involvement and support of Ngāi Tahu, Te Korowai, and Fisheries New Zealand (FNZ).

The Plan focuses on managing commercial harvesting activity. It sets out actions that will be undertaken primarily by the fishing industry – that is, PAU3 quota owners, ACE holders, harvesters and Licensed Fish Receivers (LFRs). These actions are implemented within government management settings – i.e., within the constraints of the TACC and current regulatory settings such as the Minimum Legal Size (MLS).

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<sup>1</sup> Fisheries (Conway River to Marfells Beach Shellfish and Seaweed Harvest Closure) Notice 2018  
<https://gazette.govt.nz/notice/id/2018-go3659>

Because of the shared nature of the PAU3 fishery, the Plan also includes strategies that recommend guidance for decisions made by the Minister of Fisheries. The key Ministerial decisions relevant to the successful implementation of the Plan include:

- Re-opening of the earthquake-affected area closed to pāua harvesting under the Fisheries Act (**‘the section 11 closure’**);
- Subdividing the PAU3 QMA under sections 25 and 25A of the Fisheries Act;
- Setting and adjusting new catch limits (TAC, TACC and allowances) for the two new QMAs under sections 13 and 21 of the Fisheries Act;
- Setting management controls for recreational pāua harvesting.

Before making any decision to adjust a sustainability measure or regulate or control fishing in PAU3 the Minister must take the Fisheries Plan into account, alongside all other relevant statutory considerations. Although the Minister is not bound to follow the provisions in the Fisheries Plan, the Plan is one of the matters that will influence decision-making for PAU3.

The Plan complements and integrates with other management initiatives relevant to PAU3, including:

- The Te Waipounamu Iwi Forum Fisheries Plan and other expressions of iwi aspirations including the Kaikōura Iwi Management Plan – To Poha o Tohu Raumati;
- The Kaikōura (Te Tai o Marokura) Marine Management Act 2014 and the responsibilities of the Kaikōura Marine Guardians and Te Korowai; and
- FNZ’s fisheries management functions.

## Management Approach

As a consequence of the earthquakes, the PAU3 fishery now has two distinct components referred to in this Plan as:

- **PAU3-S**, the area south of the Conway River; and
- **PAU3-N**, the area north of the Conway River which is currently closed to commercial and recreational fishing under the section 11 closure.

PAU3-S and PAU3-N have different management priorities and requirements. In order to ensure that the objectives for each area can be met with minimal risk to the fishery in the other area, the plan proposes a formal subdivision of the PAU3 QMA into two new QMAs.

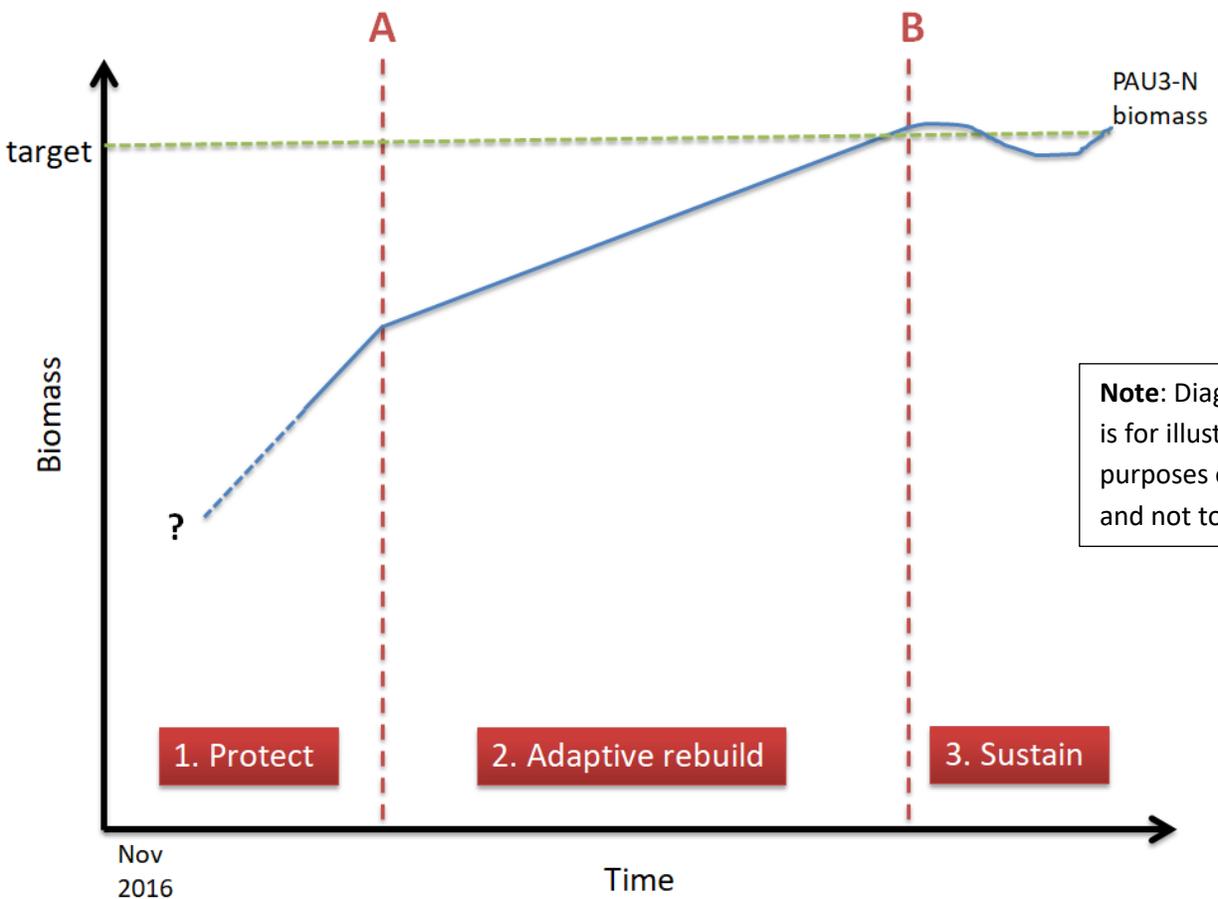
For PAU3-S, the priority is to maintain a sustainable fishery that is unaffected by the environmental changes and management measures adopted in the northern area of PAU3. The management approach for PAU3-S is set out in:

- Objective 1 and associated strategies which apply specifically to PAU3-S; and
- Objectives 3, 4 and 5 and associated strategies which apply to PAU3-S and PAU3-N.

For PAU3-N, the priority is to enable the fishery to rebuild as rapidly as possible to a level that will support sustainable utilisation. To achieve this, the plan provides for three sequential management

approaches, with clear decision points designed to trigger a shift from one approach to the next. The three management approaches are:

1. **Protect** – the section 11 closure remains in place until monitoring surveys indicate a steady increase in adult biomass and the widespread emergence of post-earthquake recruits;
2. **Adaptive rebuild** – the fishery is opened to a conservative level of utilisation with management based on collecting comprehensive fine-scale information from the fishery and making responsive adjustments to the management approach and settings. Spawning pāua are protected by a high minimum harvest size. The commercial catch limit is set initially at a low level, then reviewed and adjusted regularly using a harvest control rule. All fisheries data and analysis is reviewed by the FNZ Shellfish Working Group. Commensurate management measures apply to any recreational fishing that may occur during this phase;
3. **Sustain** – the fishery fluctuates around an agreed abundance target and is managed using standard Fisheries Act tools, complemented by industry-initiated measures set out in the Fisheries Plan.



The management measures for 'Protect' and 'Adaptive Rebuild' are set out in Objective 2 and associated strategies. The management measures for 'Sustain' are set out in Objectives 3, 4 and 5 and associated strategies which apply to both PAU3-N and PAU3-S.

## Annual Operating Plan

The PAU3 Fisheries Plan provides an enduring framework for managing the fishery, but the operational management measures for PAU3-S and for PAU3-N (once re-opened) will be set and reviewed annually in the PauaMAC3 Annual Operating Plan (**AOP**).

The AOP will be prepared using the following process and will be publicly available.

Year 1	Action	Responsibility
1 October	Implement Year 1 management measures	PAU3 industry
March	Review monitoring and research data for PAU3-N	FNZ Shellfish Working Group
March	Assess Year 1 fishing activity, stock status and trends Set provisional measures for AOP Year 2 using best available information	PauaMAC3 Executive, informed by feedback from harvesters and research and monitoring reviewed by the Shellfish WG
April, May	Engage with and seek feedback on the draft AOP from: <ul style="list-style-type: none"> <li>• PAU3 quota owners and harvesters</li> <li>• Ngāi Tahu (through the Papatipu Rūnanga for each area of the fishery)</li> <li>• Te Korowai</li> <li>• FNZ</li> </ul>	PauaMAC3 Executive
June	PAU3 quota owners sign-off on management measures for Year 2 AOP	PauaMAC3 AGM
	Provide AOP to FNZ	PauaMAC3 Executive
July	If ACE shelving used: Forward ACE shelving put in place for Year 2	PAU3 quota owners
	Provide report to FNZ on level of ACE shelving achieved	PauaMAC3 Executive

## Part Two: Objectives, Strategies and Actions

### Objectives

- Objective 1**      **PAU3-S:** Maintain a sustainable fishery that is unaffected by the environmental changes and management measures adopted in PAU3-N
- Objective 2**      **PAU3-N:** Enable the fishery to rebuild to target levels of stock abundance as rapidly as possible
- Objective 3**      **PAU3-S and PAU3-N:** Support and enhance the sustainability of the pāua fishery
- Objective 4**      **PAU3-S and PAU3-N:** Protect important pāua habitat
- Objective 5**      **PAU3-S and PAU3-N:** Enhance industry performance

### 1) PAU3-S: Strategies for maintaining a sustainable PAU3-S fishery

#### **Strategy 1.1 Manage north-south displacement of catch (industry-initiated Ministerial decision).**

Avoid the displacement of commercial catch to and from the earthquake-affected areas by formally subdividing the PAU3 QMA at the Conway River.

***Explanation:** The industry will initiate a formal subdivision of PAU3 by executing an agreement, supported by owners of no fewer than 75% of PAU3 quota shares, requesting the Minister of Fisheries to subdivide the PAU3 QMA under section 25A of the Fisheries Act. A formal subdivision enables the northern and southern parts of the fishery to be managed separately, so as to achieve the management objectives for each area more effectively. It protects PAU3-S from the impacts of environmental changes and management actions in PAU3-N, while enabling an innovative approach to the recovery and management of the earthquake-affected area. Subdivision also helps to align QMA boundaries with local communities of interest in Kaikōura and Canterbury.*

#### **Strategy 1.2 Reflect current utilisation in post-subdivision management settings for PAU3-S (Ministerial decision).** Recommend to the Minister of Fisheries that:

- 1.2.1      The PAU3-S initial TAC, TACC and allowances should be set so as to provide for utilisation at levels equivalent to the current (2019) TAC, TACC and allowances for PAU3.
- 1.2.2      Incentives and equity among sectors should be maintained by adopting a proportional approach to the allocation of the TAC in any future TAC adjustments for PAU3-S.

***Explanation:** The TAC, TACC and allowances for PAU3 were adjusted in 2017 with the intent that the allowable catch would be taken in its entirety from PAU3-S. It is therefore appropriate that, following subdivision of the QMA, a new PAU3-S TAC, TACC and allowances should reflect the pre-subdivision PAU3 TAC, TACC and allowances. A proportional approach to allocation is one in which all sectors share the costs and benefits of changes in stock abundance. It ensures that all sectors share responsibility for the health of the fishery.*

## 2) PAU3-N: Strategies for enabling the PAU3-N fishery to rebuild

**Strategy 2.1 Monitor the rebuild.** Monitor the status of the fishery, including by:

- 2.1.1 Undertaking annual pāua stock monitoring surveys to collect data on site-specific and fishery-scale pāua density and length frequency estimates within the section 11 closed area; and
- 2.1.2 Supporting work by the University of Canterbury to estimate juvenile abundance in intertidal habitats.

**Explanation:** *The monitoring of pāua populations in the earthquake-affected area enables estimates to be made of trends in pāua biomass in order to inform management decisions relating to the reopening of the fishery. Pāua monitoring surveys are funded by FNZ until mid-2020 under project KAI2016-07. Ongoing funding is required to enable continued monitoring of the rebuilding of the fishery. The surveys are complemented by FNZ-funded University of Canterbury research to estimate juvenile abundance.*

**Strategy 2.2 Re-open (Ministerial decision).** Recommend to the Minister of Fisheries that PAU3-N should be re-opened to commercial pāua harvesting when the following performance standards are achieved, based on research and monitoring reviewed by the FNZ Shellfish Working Group:

- 2.2.1 Widespread emergence of post-earthquake recruits is observed across the fishery; and
- 2.2.2 A sustained increase in pāua biomass is observed across the fishery.

**Explanation:** *The pāua industry will support the maintenance of the section 11 closure until the two performance standards are achieved. The fishery should be reopened only once it is apparent that the full pāua lifecycle is intact and functioning over a widespread area of the fishery. This will be indicated when the dive surveys observe a steady trend of increasing adult abundance, supported by widespread presence of post-earthquake recruits (i.e., juvenile pāua of around 100mm in length that are 3-4 years old and have settled and grown since the earthquake). Biomass trends and the presence of post-earthquake recruits are unlikely to be uniform across the fishery. However, once these standards have been observed over a reasonable portion of available PAU3-N habitat, the entire section 11 closure in PAU3 should be opened to commercial pāua harvesting, on the understanding that sub-areas with observed low biomass or recruitment will be managed more conservatively under this Plan, as set out in Strategy 2.4.2.*

**Strategy 2.3 Initial TAC and TACC (Ministerial decisions).** Recommend to the Minister of Fisheries that prior to re-opening the section 11 closure, the Minister should, in relation to new QMA PAU3-N:

- 2.3.1 Set a TACC that provides for an initial level of commercial utilisation:
  - **Either** at approximately 50% of the commercial catch previously taken from the closed area;
  - **Or** at an alternative level recommended by the FNZ Shellfish Working Group as being appropriate to enable information to be collected from the fishery to inform future management decisions while ensuring sustainability.

2.3.2 Set a TAC and allowances for recreational and customary fishing that are proportional to the TACC in that they reflect the inter-sectoral allocation of the current (2019) PAU3 TAC.

**Explanation:** *There is considerable uncertainty as to the initial level at which a TACC for PAU-3N should be set. This uncertainty cannot be significantly reduced until information is obtained about the effect of fishing on the stock. Strategy 2.3.1 proposes two alternative approaches to this dilemma – either a ‘pragmatic’ TACC of 22 tonnes based on a conservative proportion of historical catch taken from the area, or a TACC based on current estimated biomass. In either case, the TACC should seek to strike the appropriate balance between:*

- *Adopting a precautionary approach to ensure sustainability. At its upper limit, the initial TACC should be at least 25% lower than the previous level of commercial harvest from PAU-3N.<sup>2</sup> The adaptive rebuild programme uses a highly precautionary minimum harvest size (MHS) to support the TAC (see strategy 2.4.1). The MHS will protect the breeding stock and help ensure sustainability, allowing a degree of flexibility in the setting of a TACC; and*
- *Providing for sufficient utilisation to enable information to be collected from the fishery to help determine stock size, spatial extent of the fishery and long-term sustainable yield. A very small initial TACC (e.g., 10 tonnes) will not have a discernable impact on stock biomass and would therefore provide little useful information to inform future management decisions.*

*Current inter-sectoral allocation should be maintained because no sector should be allowed to benefit disproportionately from earthquake-related management measures at the expense of other sectors.*

**Strategy 2.4 Adaptive rebuild programme.** Adopt the following management measures during the adaptive rebuild phase:

- 2.4.1 Safeguard spawning biomass by setting a Minimum Harvest Size (MHS), where possible, in the range of 135mm to 140mm.
- 2.4.2 Spread commercial fishing effort and catch across the 10 statistical areas in PAU3-N, using estimates of pāua habitat availability, density and length frequency, supplemented by diver-provided information, and scaled to the observed level of recruitment in each area.
- 2.4.3 Collect comprehensive, fine-scale data to inform future management decisions, including:
- Catch and location data (from FNZ’s mandatory electronic reporting and geospatial position reporting system);
  - Commercial length frequency data (from the shell sampling programme, see strategy 3.1.3);
  - Population length frequency data (from dive surveys);
  - Additional data, if necessary, as recommended by the FNZ Shellfish Working Group.

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<sup>2</sup> An estimated 25% of previously-fished pāua habitat is known to have been lost from the fishery. Neubauer, P. (2017). Area lost to the pāua fishery from the November 2016 Kaikōura earthquake, 7 p. (Unpublished report held by Fisheries New Zealand.)

- 2.4.4 Use a harvest control rule (HCR) to inform recommendations on commercial harvest levels, and review and if necessary adjust the HCR on an annual basis in response to stakeholder input and advice from the Shellfish Working Group.
- 2.4.5 **(Ministerial decision)** Recommend to the Minister of Fisheries that the PAU3-N TAC and TACC should be reviewed and, if necessary adjusted, on an annual basis until the stock is at or above the target level of biomass.

**Explanation:** During the adaptive rebuild phase, **MHS** is used as sustainability measure to safeguard the spawning stock and complement the conservatively-set TAC. The minimum legal size (MLS) for pāua of 125mm already provides protection for spawning pāua, but by increasing the MHS to 135-140mm more mature pāua will be protected from fishing and able to spawn and ensure continued supply of recruits to the fishery. A high MHS therefore protects the productivity of the population irrespective of the level of commercial harvest. Good length frequency data is available for the closed area, making MHS a reliable management measure to ensure sustainability. In some areas, slow growing pāua may be sexually mature but never reach 135mm. If such sub-areas are identified in the analysis of length frequency data from dive surveys, consideration may be given to setting an MHS of 125-135mm in these areas so as to avoid the concentration of catch in remaining areas. The MHS will be specified in AOP, reviewed annually, and implemented by industry rules as provided in Strategy 3.3.

Recovery is unlikely to be even across all areas of the fishery, so **catch spreading** is a key component of the adaptive rebuild programme. It helps avoid local area depletion, and enables sub-area catch levels to be scaled to observations from the fishery. Catch spreading arrangements, including areas that will remain closed to harvesting because of low levels of recruitment or available biomass, will be identified in the AOP, reviewed annually, and implemented as provided in Strategy 3.4.

Fine scale **data will be collected** from the fishery throughout the adaptive rebuild phase in order to inform future management decisions. As management targets and approaches are refined over time, additional monitoring requirements may be identified by the Shellfish Working Group.

A **harvest control rule (HCR)** is a pre-agreed guideline that determines how much fishing can take place, based on indicators of stock status such as catch per unit effort (CPUE) and length frequency data. The PAU3-N HCR will be based initially on the PAU5 HCR with the TACC scaled to an agreed initial TACC for PAU 3N (see strategy 2.3.1). The HCR will be reviewed and adjusted annually during the adaptive rebuild phase so that it becomes 'fit for purpose' for PAU3. Regular review and adjustment of the HCR is necessary to ensure that the various management measures (in particular, the interaction between MHS and allowable catches) are integrated effectively. Once the HCR has been refined under the adaptive rebuild, it will be finalised and used under 'business as usual' operation (see Strategy 2.7 and objectives 3, 4 and 5). The HCR will be specified in the AOP and its outputs will be used to inform regular adjustments of the TACC.

**Strategy 2.5 Contingency measures.** If monitoring indicates that the PAU3-N fishery cannot sustain the level of extraction allowed under the adaptive rebuild programme, take immediate action in consultation with FNZ to reduce fishing pressure across the fishery or in affected areas.

*Strategy 2.5 requires that immediate action be taken in response to sustainability risks. Sustainability risks will be identified from an analysis of fishery indicators, including feedback from harvesters. It should be noted however, that it is expected that key indicators such as catch per unit effort (CPUE) and length frequency will initially decline before subsequently increasing and, therefore, care should be taken in interpreting these indicators in the first few years after the fishery is reopened. Appropriate management responses may include increasing the MHS, implementing ACE shelving to immediately reduce commercial harvest, or closing sub-areas.*

**Strategy 2.6 Commensurate measures for recreational fishing.** Promote collective responsibility in the rebuilding of PAU3-N across customary, commercial and recreational fishing sectors by:

- 2.6.1 Engaging with Te Korowai, Te Rūnanga o Kaikōura and FNZ to promote equivalency in management measures during the adaptive rebuild stage, for example:
- Comprehensive catch and position reporting at a reasonable spatial scale;
  - Higher regulated minimum legal size for recreational fishing; and
  - Genuine constraint on recreational fishing effort (e.g., through seasonal fishing, no night fishing, and/or reduced daily bag limits).
- 2.6.2 **(Ministerial decision)** Recommending that the Minister considers re-opening the section 11 closure to recreational pāua harvesting only when confident that the measures identified in strategy 2.6.1 can be implemented.
- 2.6.3 **(Ministerial decision)** Recommending to the Minister that incentives and equity among sectors should be maintained by adopting a proportional approach to the allocation of the TAC in any future TAC adjustments for PAU3-N.

**Explanation:** *The success of the adaptive rebuild programme depends upon meaningful controls on catch and the collection of comprehensive harvest information to enable responsive adjustments of management settings. Recreational fishing that is undertaken under status quo settings – i.e., with the current MLS and bag limits, and without comprehensive catch reporting – may compromise the success of the rebuild, particularly in the absence of reliable, verifiable information about recreational harvest. The formal subdivision of PAU3 into two new QMAs and the designation of the Kaikōura Marine Area under the Kaikōura (Te Tai o Marokura) Marine Management Act 2014 provide an opportunity to implement purpose-built, innovative measures for managing recreational fishing in PAU3-N. Although the specification of measures for recreational fishing is beyond the scope of this plan, PauaMAC3 will work with Te Korowai and other fishing sectors to promote the adoption of commensurate measures for recreational fishing as a prerequisite for the re-opening of the section 11 closure to recreational fishing.*

**Strategy 2.7 Stock management target:** Shift to ‘business as usual’ management when the following stock management target has been met:

- Initial indicative target: CPUE of 32-38 kg per hour, stable for at least two consecutive years;
- Refined target: CPUE and mean harvest length are at a level that is acceptable to the industry and other fisheries stakeholders, and have been stable for at least two consecutive years.

**Explanation:** *The Fisheries Act requires that fish stocks should be maintained at or above a level that will produce the maximum sustainable yield ( $B_{MSY}$ ). A biomass-related target (e.g., the FNZ default target of 40%  $B_0$ )<sup>3</sup> is not practical for PAU3-N because it is not possible to reliably estimate  $B_0$  or current biomass in relation to  $B_0$ . CPUE will therefore be used as a proxy for biomass. The CPUE-related ‘initial indicative target’ is based on the target adopted in the PAU5 HCR which, in PAU5B, is considered to be equivalent to a biomass of approximately 60%  $B_0$ . This is considered to be an appropriate initial target as it corresponds to a comfortable level of available biomass (i.e. biomass above the MHS) that is well above statutory reference points. The proposed initial target assumes PAU3-N and PAU5B productivity are similar. This assumption is reasonable, but if it proves to be incorrect, or if PAU3-N stakeholders prefer an alternative stock target, strategy 2.7 provides for the target to be refined or changed during the adaptive rebuild.*

*Under ‘business as usual’ management, the refined and finalised HCR will be used to adjust management settings, and the strategies set out under Objectives 3, 4 and 5 of the Plan will apply.*

### 3) PAU3-S and PAU3-N: Strategies for supporting and enhancing sustainability

**Strategy 3.1 Comprehensive data collection:** Improve the comprehensiveness and accuracy of information on the PAU3 fisheries by implementing the following actions:

- 3.1.1 Require 100% data logger use by all PAU3 commercial harvesters.
- 3.1.2 Make use of data from FNZ’s electronic catch and location reporting.
- 3.1.3 Require at least one shell sample per dive event (for shell length monitoring).
- 3.1.4 Incorporate diver-provided information into decision-making.

**Explanation:** *Timely, fine-scale, verifiable commercial harvest information will be collected using FNZ’s mandatory electronic catch and location reporting regime. Shell length sampling provides an important indication of the health of the fishery. Information provided by commercial divers is relevant to all the management measures in the AOP.*

**Strategy 3.2 Timely adjustments to catch levels:** Adjust commercial catch levels in a responsive manner by implementing the following actions:

- 3.2.1 Use a harvest control rule (decision rule) for adjusting commercial harvest levels and specify the harvest control rule in the Annual Operating Plan.
- 3.2.2 Where appropriate, use ACE shelving to enhance the rate of rebuild, specifying the required level of shelving (if any) in the Annual Operating Plan.

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<sup>3</sup> Default targets are specified in the *Harvest Strategy Standard for New Zealand Fisheries*, Ministry of Fisheries (2008).

**Explanation:** *The development of a PAU3 HCR is described in Strategy 2.4. When used in conjunction with the TACC, ACE shelving is a secure and responsive way of enhancing the rate of fishery rebuild by fine-tuning commercial harvest levels on an annual basis.*

**Strategy 3.3 Protect spawning opportunity:** Protect and enhance pāua spawning opportunity by implementing the following actions:

- 3.3.1 Contribute to industry research programmes on pāua length at maturity and growth rates.
- 3.3.2 Adjust pāua Minimum Harvest Size (MHS) at an appropriate spatial scale, with details specified in the Annual Operating Plan and reviewed annually.
- 3.3.3 Monitor spawning times using information from harvesters and LFRs and implement a seasonal spawning closure with dates specified in the Annual Operating Plan.

**Explanation:** *Adjusting the MHS above the MLS of 125mm allows additional spawning events before pāua become available for harvest. The results of research on fine-scale spatial variation in length at maturity, spawning behaviour, and the optimal number of spawning years will be used to set and adjust the spawning-related rules in the AOP.*

**Strategy 3.4 Reduce the risk of serial depletion:** Reduce the risk of serial depletion by spreading commercial fishing effort within the PAU3-S and PAU3-N fisheries, by implementing the following actions:

- 3.4.1 Identify sub-areas of PAU3-S and PAU3-N for catch monitoring and management purposes.
- 3.4.2 Specify sub-area targets (including any area closures) in the AOP and review annually.
- 3.4.3 Monitor sub-area catch on a timely basis using the PAU3 Dashboard website.

**Explanation:** *The management of commercial harvesting at a sub-QMA level can help spread fishing effort and manage the risk of local depletion. Effort-spreading arrangements may include sub-area targets or limits, assignment of a proportion of ACE to each sub-area, and in-season area closures of heavily fished areas if catches reach a specified threshold.*

**Strategy 3.5 Fishery enhancement:** Enhance the rate of rebuilding of the PAU3-N fishstock and contribute to the wider restoration of marine ecosystems in PAU3-N and PAU3-S, with details specified in the Annual Operating Plan, using fishery enhancement techniques such as:

- 3.5.1 Out-planting (reseeding) where this is practical and justified by analysis of costs and benefits.
- 3.5.2 Translocation of pāua from slow growth to faster growth areas to enable more pāua to reach harvestable size.
- 3.5.3 Translocation to establish spawning banks/founder populations in areas subject to localised depletion that previously supported strong pāua populations.

**Explanation:** *Translocation and out-planting programmes can be used to target particular areas of the fishery where these techniques will help improve local abundance. The sustainability of pāua stocks in all areas is paramount, including areas where pāua are sourced for translocation. Fishery enhancement*

*techniques also contribute more generally to restoration of degraded marine ecosystems. Details of the enhancement programme will be specified in the AOP following discussion with Te Korowai (in Kaikōura) and the relevant Ngāi Tahu Papatipu Rūnanga of appropriate management tools and donor and recipient sites.*

#### 4) PAU3-S and PAU3-N: Strategies for protecting important pāua habitat

**Strategy 4.1 Identify habitat of particular significance for fisheries management (HPSFM):** Identify areas that are particularly important for pāua larval settlement and nursery habitat, and map the identified HPSFM in the Annual Operating Plan, reviewing and amending as new information becomes available.

**Strategy 4.2 Habitat protection:** Work with Te Korowai and other interested parties to ensure that important pāua habitat is protected from adverse effects of fishing and non-fishing activities, including activities managed under the Resource Management Act 1991 (RMA), by implementing the following actions:

- 4.2.1 Build relationships with relevant local and regional authorities.
- 4.2.2 Promote the adoption of appropriate provisions to protect pāua habitat in planning documents prepared under the RMA and in resource consent conditions for activities that may have an adverse effect on pāua habitat.
- 4.2.3 Encourage FNZ to support the identification and protection of HPSFM under the Fisheries Act and other relevant legislation.

**Explanation:** *Fisheries Act section 9(c) requires that habitat of particular significance for fisheries management should be protected. Other marine and terrestrial activities can have adverse effects on pāua habitat – for example, the discharge of sediment from land disturbance or the erection of coastal structures. A fisheries plan approved under section 11A of the Act has status under other legislation, including the RMA, enabling an integrated, multi-agency approach to protecting areas that are critical for sustaining healthy pāua populations.*

#### 5) PAU3-S and PAU3-N: Strategies for enhancing industry performance

**Strategy 5.1 Professional and responsible harvest crews:** Improve the performance of harvest crews by the following actions:

- 5.1.1 Require all harvesters to comply with PauaMAC3’s general operating procedures and best practice rules, including procedures related to:
  - harvesting, handling and landing of pāua;
  - biosecurity;
  - protecting the fishery from theft;
  - recreational take by commercial operators; and
  - use of data loggers.

- 5.1.2 Implement and maintain a regular harvester training programme covering matters such as best pāua handling practice, data logger use, and compliance with industry and government rules.

**Explanation:** *Good harvesting practice builds on existing industry practices, and is an essential component of effective management of the PAU3 fisheries.*

**Strategy 5.2 Quota owner responsibility:** Foster quota owner responsibility for harvest crew performance by implementing the following actions:

- 5.2.2 Obtain agreement from PAU3 quota owners to:
- place conditions on ACE requiring harvesters to comply with all industry rules in the Annual Operating Plan; and
  - enforce ACE conditions by withholding ACE from harvesters who fail to comply with the industry rules.
- 5.2.3 Encourage the use of multi-year ACE commitments by quota owners so that harvesters have the security of a longer-term interest in the fishery.

**Explanation:** *The effective enforcement of quota owner-imposed ACE conditions is a critical aspect of ensuring compliance with industry-initiated management measures. Multi-year ACE arrangements (e.g., 3 to 5 years) improve incentives for harvester performance.*

**Strategy 5.3 Community engagement:** Establish mechanisms to engage regularly with the appropriate Ngāi Tahu Papatipu Rūnanga and with Te Korowai to discuss matters relevant to the pāua fishery and the implementation of this Plan.

**Explanation:** *PauaMAC3 will establish regular opportunities to help inform Iwi and the local communities of the PAU3 Plan, to seek support for industry management measures, and to integrate the PAU3 Plan with other fisheries management initiatives including Iwi fisheries plans and Iwi planning documents such as the Kaikōura Iwi Management Plan – To Poha o Tohu Raumati.*

## Part Three: Implementation, monitoring and review

### Implementing the measures in the Plan

The annual measures that will be implemented by the PAU3 industry will be set out in the PauaMAC3 AOP, as described in Part One of the Plan.

The Plan's strategies and actions enable the implementation methods to evolve or change over time. At any one time a mix of the following implementation mechanisms may be in use:

- **Industry rules** – Non-regulatory measures that are agreed to and implemented by industry members on a voluntary basis (e.g., rules relating to area closures or MHS);
- **ACE shelving** – Voluntary management of commercial harvest levels within the TACC;

- **Ministerial decisions** – in some cases the necessary management measures are beyond the control of the PAU3 industry and rely on decisions made by the Minister of Fisheries and implemented under relevant Fisheries Act provisions (e.g., decisions on TACs and allowances, or recreational fishing regulations);
- **Authorised management** – A management tool that PauaMAC3 and the seafood industry are advocating be made available in future, which would require amendments to be made to the Fisheries Act.<sup>4</sup> Authorised management would enable more efficient implementation of the strategies in the Plan by simplifying processes for agreeing on industry rules, making rules enforceable, and removing the ‘free rider’ effect whereby quota owners or harvesters are able to benefit from industry management measures without participating in them;
- **Advocacy & education** – in some cases the necessary management measures rely on the actions of other parties – for example, in relation to protection of pāua habitat from degradation by land-based activities. In these cases, the PAU3 industry will seek to implement the strategies in the Plan by education and advocacy.

## Performance measures and monitoring

The PAU3 Plan has three performance measures which are set out below.

Performance will be monitored by the PauaMAC3 Executive and by FNZ on an ongoing basis.

Performance measure	Monitoring mechanism
1 The AOP is prepared according to the requirements of Plan	FNZ receives the AOP by the due date and the AOP covers the measures specified in Plan
2 Industry compliance with industry rules in the AOP is sufficient to ensure the integrity of the management measures	PauaMAC3 monitors compliance with industry rules using information from harvesters and LFRs, data loggers and the PAU3 Dashboard website  FNZ monitors electronic catch and position reporting
3 During the adaptive rebuild phase, all PAU3-N fisheries data and analysis used to inform management approaches and settings is reviewed by the FNZ Shellfish Working Group	Shellfish Working Group
4 Community support for the Plan	PauaMAC3 and FNZ monitor community views through direct liaison with relevant Ngāi Tahu Papatipu Rūnanga, Te Korowai, and representatives of other fishing interests

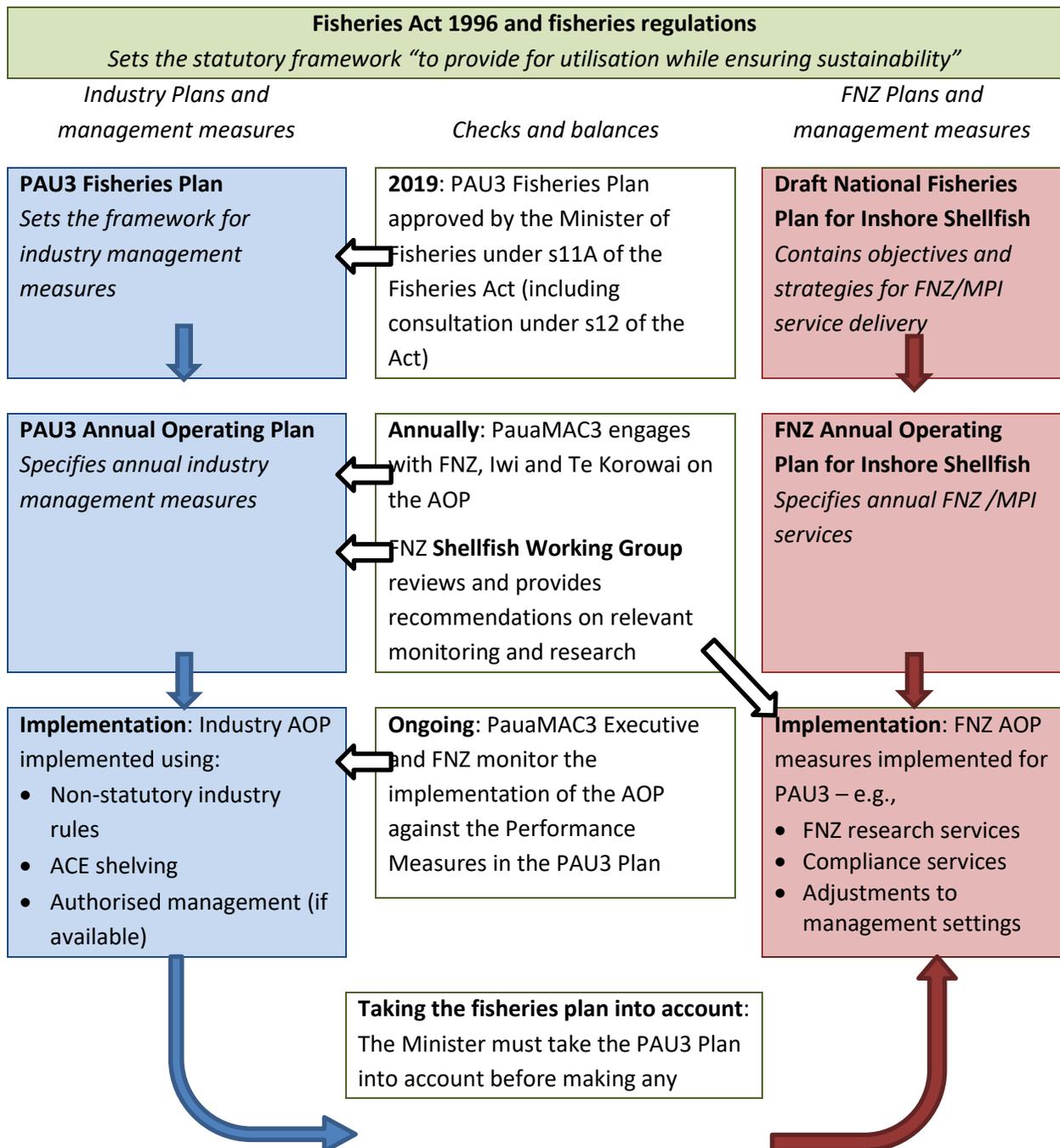
<sup>4</sup> Authorised management is described in detail in the Initial Seafood Industry Contribution to Fisheries Management Review 2015/16 *Creating Value ‘Beyond Sustainability’* (December 2015).

## Review

PauaMAC3 will review the PAU3 Fisheries Plan at the end of the adaptive rebuild of PAU3-N or after the Plan has been in place for five years (whichever is sooner). The review will be undertaken in consultation with FNZ and iwi representatives.

## Integrating the Fisheries Plan with FNZ management measures

The PAU3 Fisheries Plan aligns with and complements FNZ’s management services for PAU3.



decision to adjust a sustainability  
measure or regulate or control fishing  
in PAU3