

PĀUA FISHERIES PLAN FOR PAU7

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Part One: Introduction

Context

PAU7 is the pāua fishery at the top of the South Island. It extends from the mouth of the Clarence River on the east coast northwards around the top of the South Island and down to Kahurangi Point on the West Coast. The fishery is highly valued by customary, commercial and recreational fishers. Pāua is a taonga for Rangitane o Wairau, Ngāti Apa, Ngāti Rārua, Ngāti Tama, Ngāti Kuia, Te Atiawa, Ngāti Kōata, Ngāti Toa, and Ngāi Tahu. Pāua is also important for recreational fishers, particularly in the Marlborough Sounds. The commercial fishery is managed under the Quota Management System (QMS) as PAU7, comprising blackfoot pāua (*Haliotis iris*) and yellowfoot pāua (*H. australis*).

Because of its high value for iwi and all fishing sectors, PAU7 has been intensively fished for many years. In addition to fishing pressure, environmental changes in the Marlborough Sounds and earthquake uplift in the Cape Campbell area have damaged pāua habitat. As a result of these and other pressures, PAU7 stock abundance is well below the default management target of 40% B_0 set by Fisheries New Zealand (FNZ).¹ The last stock assessment was completed in 2015 and estimated the PAU7 biomass to be between 16-21% B_0 . FNZ requires a formal time-constrained rebuilding programme to be put in place when the abundance of a fishery falls below 20% B_0 .

Various management measures have been put in place for PAU7 over the years, including Total Allowable Commercial Catch (TACC) reductions of 30% in 2002 and a further 50% in 2016/17. The industry has implemented ACE shelving² in most years since 2001, with a current (2018/19) level of shelving of 10% of the TACC to minimise the impacts of catch displaced from the closed area affected by the 2016 Kaikōura earthquake.

However, these measures have not been sufficient by themselves to reverse the decline in pāua abundance. An integrated package of management measures is required to secure the rebuilding and future productivity of the PAU7 fish stock.

The PAU7 industry is working with iwi and other groups who have an interest in pāua to develop a fisheries plan to be approved by the Minister of Fisheries under section 11A of the Fisheries Act 1996.

Scope

The fisheries plan is being developed by industry representative body PauaMAC7 on behalf of all PAU7 quota owners and harvesters, and with the involvement and support of iwi, recreational fishing representatives, 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, PAU7 quota owners, ACE holders, harvesters and Licensed Fish Receivers (LFRs).

¹ B_0 is the biomass of the fish stock that would exist if the stock had never been fished (i.e., its original or “virgin” biomass). The target “40% B_0 ” therefore refers to a stock biomass level that is 40 percent of the original biomass.

² ACE shelving is discussed in Part Three of the Plan.

The plan complements and integrates with other management initiatives for PAU7, including the Te Waipounamu Iwi Forum Fisheries Plan, other expressions of iwi fisheries aspirations, and FNZ's fisheries management functions.³ Integration between the PAU7 fisheries plan and iwi aspirations may include the development of collaborative mechanisms to achieve commonly-identified outcomes (e.g., protection of particularly significant fisheries habitat).

Management Approach

The PAU7 Plan is based on fine-scale, timely, and adaptive management responses. This management approach is particularly well suited to the PAU7 fishstock because the sustainability and abundance of sedentary species such as pāua depends primarily on local conditions and local fishing effort rather than on stock-wide factors. A spatially-explicit management approach is therefore more appropriate than the typical 'top-down' management approach implemented at the scale of the PAU7 Quota Management Area. Information about the PAU7 stock is visible to commercial harvesters and can be captured by industry data recording systems. This real-time information can be readily incorporated into management responses for PAU7 on an annual basis as well as during the fishing season.

The PAU7 Plan operates within government management settings – i.e., within the constraints of the TACC and current regulatory settings such as the Minimum Legal Size (MLS).

The three main management tools utilised in the Plan are:

- Boosting the rate of stock rebuild using the mechanism of ACE shelving;
- Controlling commercial fishing activity at a sub-QMA level, including catch spreading and variable minimum harvest sizes; and
- Enhancing local pāua populations using techniques such as out-planting and translocation.

The management measures in PAU7 Plan recognise the important role that pāua play within the marine ecosystem.

Annual Operating Plan

The PAU7 Plan provides an enduring framework for managing the fishery, but the operational management measures will be set and reviewed annually in the PauaMAC7 Annual Operating Plan (**AOP**).

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

³ The Te Waipounamu Iwi Forum Fisheries Plan is to be reviewed in 2019. Integration with FNZ management measures is addressed in Part Three of the PAU7 Plan.

Year 1	Action	Responsibility
1 October	Implement Year 1 management measures	PAU7 industry
March	Assess Year 1 fishing activity, stock status and trends Set provisional measures for AOP Year 2 using best available information	PauaMAC7 Executive, informed by feedback from harvesters
April, May	Engage with and seek feedback on the draft AOP from: <ul style="list-style-type: none"> • PAU7 quota owners and harvesters • Iwi • FNZ 	PauaMAC7 Executive
June	PAU7 sign-off on management measures for Year 2 AOP Provide AOP to FNZ	PauaMAC7 AGM PauaMAC7 Executive
July	Forward ACE shelving put in place for Year 2 Provide report to FNZ on level of ACE shelving achieved	PAU7 quota owners PauaMAC7 Executive

Part Two: Objectives, Strategies and Actions

Objectives

- Objective 1:** Rebuild the PAU7 fishstock to at least 40% B_0 as rapidly as possible, taking into account the need to provide for utilisation.
- Objective 2:** Protect important pāua habitat.
- Objective 3:** Enhance industry performance.

Strategies and Actions

Strategies for rebuilding the PAU7 fishstock

Strategy 1.1 Comprehensive data collection: Improve the comprehensiveness and accuracy of information on the PAU7 fishery by implementing the following actions:

- 1.1.1 Require 100% data logger use by all PAU7 commercial harvesters.
- 1.1.2 Make use of data from FNZ's electronic catch and location reporting.
- 1.1.3 Require at least one shell sample per dive event (for shell length monitoring).
- 1.1.4 Incorporate diver-provided information into decision-making.

- 1.1.5 Work with FNZ and other fishing sectors to improve information on recreational harvest, including advocating for the adoption of recreational catch reporting.

Explanation: Timely, fine-scale, verifiable harvest information forms the cornerstone of the management approach in the PAU7 Plan. This information, currently collected voluntarily using data loggers, will be further supported by the introduction of FNZ's mandatory electronic catch and location reporting requirements. 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. For non-commercial harvest, kaitiaki currently provide information on customary catch to FNZ, which is used in stock assessments. However, there is a need to obtain more accurate, timely and verifiable information on recreational catch.

Strategy 1.2 Timely adjustments to catch levels: Adjust commercial catch levels in a responsive manner by implementing the following actions:

- 1.2.1 Develop and implement a harvest control rule (decision rule) for adjusting commercial harvest levels in PAU7 based on comprehensive harvest information, and specify the harvest control rule in the Annual Operating Plan.
- 1.2.2 Use ACE shelving to enhance the rate of rebuild, including by:
- maintaining 10% ACE shelving until such time as the fishery is able to sustain catch displaced from the earthquake-affected area; and
 - reviewing the level of ACE shelving annually, adjusting when necessary using the harvest control rule, and specifying the required level of shelving in the Annual Operating Plan.
- 1.2.3 Support industry research to develop pāua recruitment indicators using “pāua motels”.

Explanation: A harvest control rule (HCR) is a pre-agreed guideline that determines how much fishing can take place, based on indicators of stock status. A PAU7 HCR will be developed based on work currently being undertaken in PAU5. 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. “Pāua motels” will be used to build knowledge of future pāua populations as part of an industry research project part-funded by Seafood Innovations Ltd.

Strategy 1.3 Reduce the risk of serial depletion: Reduce the risk of serial depletion by spreading commercial fishing effort across as much as of the PAU7 fishery as possible, by implementing the following actions:

- 1.3.1 Identify sub-areas of the fishery for catch monitoring and management purposes.
- 1.3.2 Establish appropriate effort-spreading arrangements for the identified sub-areas in the Annual Operating Plan.
- 1.3.3 Monitor sub-area catch on a timely basis using the PAU7 Dashboard website.

- 1.3.4 Utilise unfished parts of the fishery by negotiating temporary access to areas of the fishery that are normally closed to commercial fishing.
- 1.3.5 Develop indicators to inform decision-making on the reopening of the earthquake-affected area.
- 1.3.6 Review sub-areas, targets, closures, and thresholds on an annual basis and specify in the Annual Operating Plan.

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. Negotiating temporary access to closed areas will help ease fishing pressure and enhance the rate of rebuild of the PAU7 fish stock. All spatial measures will be discussed with iwi prior to adoption in the AOP, in order to ensure customary fishing needs are considered.

Strategy 1.4 Protect spawning opportunity: Protect and enhance pāua spawning opportunity by implementing the following actions:

- 1.4.1 Contribute to industry research programmes on pāua length at maturity and growth rates.
- 1.4.2 Adjust pāua Minimum Harvest Size (MHS) at an appropriate spatial scale, with details specified in the Annual Operating Plan and reviewed annually.
- 1.4.3 Monitor spawning times using information from harvesters and LFRs.
- 1.4.4 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 1.5 Fishery enhancement: Enhance the rate of rebuilding of the PAU7 fishstock and contribute to the wider restoration of marine ecosystems in the PAU7 area, with details specified in the Annual Operating Plan, using fishery enhancement techniques such as:

- 1.5.1 Out-planting where this is practical and justified by analysis of costs and benefits.
- 1.5.2 Translocation of pāua from slow growth to faster growth areas to enable more pāua to reach harvestable size.
- 1.5.3 Translocation to establish spawning banks/founder populations in areas subject to localised depletion that previously supported strong pāua populations.
- 1.5.4 In agreement with iwi, development of a protocol for using customary fisheries management tools to facilitate fishery enhancement techniques, where appropriate.

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 performance of these methods of fisheries enhancement will initially be trialed, monitored and assessed prior to broader implementation. 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 iwi of appropriate management tools and donor and recipient sites.

Strategies for protecting important pāua habitat

Strategy 2.1 Identify HPSFM:⁴ Identify areas that are particularly important for pāua larval settlement and nursery habitat, as follows:

- 2.1.1 Review scientific literature, other research and monitoring, and harvester-provided information to identify candidate sites.
- 2.1.2 Work with iwi to identify areas that are particularly important for pāua habitat from an iwi Māori perspective.
- 2.1.3 List and map the identified HPSFM in the Annual Operating Plan, review and amend as new information becomes available.

Strategy 2.2 Habitat protection: Work with iwi 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:

- 2.2.2 Build relationships with relevant local and regional authorities.
- 2.2.2 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.
- 2.2.3 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.

⁴ HPSFM = habitat of particular significance for fisheries management.

Strategies for enhancing industry performance

Strategy 3.1 Professional and responsible harvest crews: Improve the performance of harvest crews by the following actions:

- 3.1.1 Require all harvesters to comply with PauaMAC7'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.
- 3.1.2 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 PAU7 fishery.

Strategy 3.2 Quota owner responsibility: Foster quota owner responsibility for harvest crew performance by implementing the following actions:

- 3.2.2 Obtain agreement from PAU7 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.
- 3.2.3 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 3.3 Industry organisation: Ensure that PauaMAC7 is able to effectively support the implementation of the PAU7 Fisheries Plan by implementing the following actions:

- 3.3.1 Review the PauaMAC7 governance arrangements to make sure they are fit for purpose.
- 3.3.2 Ensure PauaMAC7 continues to be appropriately resourced and supported.

Explanation: The continued development and implementation of the Plan requires a credible, properly resourced industry representative body with sound governance; access to appropriate financial support, skills, and experience; and constructive relationships with Iwi and other fisheries stakeholders.

Strategy 3.4 Shared fishery responsibility: Engage with iwi, other fishing sectors and FNZ to promote the shared interests of iwi and all stakeholders in the responsible management of the PAU7 fishery, including by the following actions:

- 3.4.1 Establish mechanisms for regular engagement between PauaMAC7 and iwi representatives to address common management issues for the pāua fishery and to discuss PauaMAC7's Annual Operating Plan.
- 3.4.2 Encourage the participation of mandated representatives of the recreational fishing sector in the management of pāua fisheries, including discussion of the Annual Operating Plan.
- 3.4.3 Promote the following requirements for effective management of the PAU7 fishery to government fisheries managers:
 - greater clarity and certainty about inter-sectoral allocation, reflecting common interests in the health of the PAU7 fishery;
 - effective management of recreational harvest within the recreational allowance;
 - reduction of allowable harvest levels in response to area closures so as to avoid adverse effects of displaced effort and catch; and
 - reduction of illegal harvest of pāua.

Explanation: PauaMAC7 will establish regular opportunities to help inform Iwi and the local community of the PAU7 Plan, to seek support for industry management measures, and to integrate the PAU7 Plan with other fisheries management initiatives including Iwi fisheries plans. Strategy 3.4.3 addresses matters that are beyond the industry's direct control but are nevertheless essential for achieving the objectives of the Plan. PauaMAC7 will use methods such as advocacy and information sharing to promote these matters to government fisheries managers and policy makers.

Part Three: Implementation, monitoring and review

Implementing the measures in the Plan

The annual measures that will be implemented by the PAU7 industry will be set out in the PauaMAC7 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:

- **ACE shelving** – Prior to the start of the fishing year, PAU7 quota owners transfer the specified percentage of ACE to a non-fishing entity – i.e., to PauaMAC7's account on the publicly-accessible ACE register maintained by FishServe. ACE that is shelved cannot be fished during that year. The process is repeated every year that the shelving is in place. The security of this method of ACE shelving has been demonstrated by PauaMAC7 over many years. ACE shelving

requires a high level of support from quota owners in order to achieve the specified level of catch reduction;

- **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 the use of data loggers);
- **Regulations** – Some measures in the Plan can be implemented via regulations made under the Fisheries Act – e.g., electronic catch and position reporting; and
- **Authorised management** – A management tool that PauaMAC7 and the seafood industry are advocating be made available in future, which would require amendments to be made to the Fisheries Act.⁵ Under authorised management, a group of quota owners would be authorised by the Minister of Fisheries to purchase specified fisheries services and perform specified management functions for the commercial share of a fishery within government-set standards. The quota owners would use a statutory decision making tool to make rules by super-majority, subject to statutory checks and balances to prevent inappropriate behaviour. The rules would bind all quota owners and commercial harvesters in a fishery so as to provide government, iwi, and fisheries stakeholders with confidence that industry management measures will be implemented in a transparent and enforceable manner.

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;

- **Collaborative initiatives** – PAU7 is a shared fishery and collaborative actions by all fisheries stakeholders will be required to achieve the Plan’s objectives. In particular, the Plan provides for the development of collaborative initiatives to achieve outcomes that are common to this Plan and to iwi aspirations set out in relevant planning documents; and
- **Advocacy & education** – in some cases the necessary management measures are beyond the control of the PAU7 industry and 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 PAU7 industry will seek to implement the strategies in the Plan by education and advocacy.

⁵ Authorised management is described in detail in the Initial Seafood Industry Contribution to Fisheries Management Review 2015/16 *Creating Value ‘Beyond Sustainability’* (December 2015).

Performance measures and monitoring

The PAU7 Plan has five performance measures which are set out below.

Performance will be monitored by the PauaMAC7 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 The level of ACE shelving specified in the AOP is consistent with Fisheries Act requirements for ensuring stock sustainability ⁶	PauaMAC7 and FNZ share information on PAU7 stock sustainability and discuss AOP specifications before June each year
3 The specified level of ACE shelving is achieved by 31 July each year	PauaMAC7 monitors the level of ACE shelving using the quota register and reports the level of shelving achieved to FNZ
4 Industry compliance with industry rules in the AOP is sufficient to ensure the integrity of the management measures	PauaMAC7 monitors compliance with industry rules using information from harvesters and LFRs, data loggers and the PAU7 Dashboard website FNZ monitors electronic catch and position reporting
5 Community support for the Plan	PauaMAC7 and FNZ monitor community views through direct liaison with Iwi and representatives of other fishing interests

Review

PauaMAC7 will review the PAU7 Fisheries Plan after the Plan has been in place for five years. The review will be undertaken in consultation with FNZ and Iwi representatives.

Integrating the Fisheries Plan with FNZ management measures

The PAU7 Fisheries Plan aligns with and complements FNZ's management services for PAU7, as shown in the diagram overleaf.

⁶ These requirements are set out in Fisheries Act sections 11 and 13.

Fisheries Act 1996 and fisheries regulations
Sets the statutory framework “to provide for utilisation while ensuring sustainability”

