

# Regulatory Impact Statement: Further fisheries measures to protect South Island Hector's dolphins

## Coversheet

### Purpose of Document

Decision sought:	<i>Authorise the Minister for Oceans and Fisheries to submit drafting instructions to PCO for new fisheries measures to manage the effects of fishing-related mortality on South Island Hector's dolphins.</i>
Advising agencies:	<i>Fisheries New Zealand (business unit of the Ministry for Primary Industries – MPI)</i>
Proposing Ministers:	<i>Minister for Oceans and Fisheries</i>
Date finalised:	2 August 2022

### Problem Definition

Best available information indicates that the impacts of three main human-induced threats to South Island Hector's dolphins (set net fishing, trawl fishing and the disease toxoplasmosis) will prevent the population from achieving the desired population outcome and fisheries objectives as set out under the [Hector's and Māui dolphin Threat Management Plan \(doc.govt.nz\)](#) (Threat Management Plan).

We estimate that the impacts from fishing exceed the levels required to meet the fisheries objectives for the north and south coast South Island Hector's dolphin subpopulations and the local Kaikōura population within the east coast subpopulation.

This RIA focuses only on fishing-related threats to Hector's dolphins as managed by the Minister for Oceans and Fisheries and proposed options to address fisheries risks to Hector's dolphins.

### Executive Summary

Under section 15(2) of the Fisheries Act 1996 the Minister of Fisheries may put in place measures as he/she consider necessary to avoid, remedy, or mitigate the effect of fishing-related mortality on protected species (such as South Island Hector's dolphins). Measure may include setting a limit on fishing-related mortality.

Whether the Minister considers measures are necessary is informed by the Threat Management Plan population outcomes and fisheries objectives for Hector's dolphin.

The impact from commercial fishing is estimated to exceed the levels required to meet the Threat Management Plan fisheries objectives for the north and south coast South Island Hector's dolphin subpopulations and the local Kaikōura population within the east coast subpopulation.

Consultation on four options for further fisheries measures to protect South Island Hector's dolphins occurred between October and December 2021. This followed consultation on broad set net and trawl fishing closures in 2019, and implementation of extensive set net closures in October 2020. The options are:

- a) extending the commercial and recreational set-net closures around Banks Peninsula.

Proactive Release

- b) a proposal to manage the risk of trawl-related mortality to Hector's dolphins on the east and south coasts of the South Island using trawl gear restrictions.
- c) an approach to manage fishing-related mortality of Hector's dolphins in the South Island that would include a graduated capture response framework, electronic monitoring (on-board cameras), and fishing-related mortality limits.<sup>1</sup>
- d) Also, the options for further area closures to trawl in the north, south, and east coasts consulted on in 2019 were not decided on and therefore remained as options available to the Minister.

Cabinet in June 2020 noted [refer CAB-20-MIN-0302] that the Minister of Fisheries intended to consult on these options following the completion of the 2020 revision of the Threat Management Plan.

Submissions were divided on the need for further action to protect South Island Hector's dolphins and the extent of measures necessary (if any). In general, environmental interest groups/individuals, academics and public submitters considered that extensive set net and trawl closures (beyond the scope of those consulted on) should be introduced to immediately reduce fishing impacts on dolphins to zero. The fishing industry, Te Waka a Māui Iwi Forum, and Te Ohu Kaimoana consider that fishing impacts have been addressed and further measures are unnecessary to meet legal obligations. If measures were introduced, Te Ohu Kaimoana and the fishing industry's preference is for the Bycatch Reduction Plan (Option 2).

Fisheries New Zealand's preferred options are the Bycatch Reduction Plan (Option 2) and the commercial and recreational set net closure offshore around Banks Peninsula (Option 4). These options reflect that in most areas the Threat Management Plan fisheries objectives are estimated to be met by current measures and the remaining risk and consequence of fishing-related deaths (given the overall size of the South Island Hector's dolphin population) are low.

Fisheries New Zealand considers the Bycatch Reduction Plan will best meet the Threat Management Plan objectives through its combination of regulatory measures, including setting fishing-related mortality limits, and voluntary measures. By working with commercial fishers to improve mitigation measures at a vessel level and across the fleets, the Threat Management Plan fisheries objectives will be met, and the industry will be supported to reduce fishing-related dolphin deaths toward zero over time.

The Bycatch Reduction Plan leverages new technology in electronic catch and geospatial position reporting, and the wider rollout of on-board cameras to verify Hector's dolphin bycatch.

The further commercial and recreational set net fishing closure offshore around Banks Peninsula (Option 4) will help ensure the estimated reductions in set net-related risk that were achieved from the 2020 closures are not lost.

## Limitations and Constraints on Analysis

---

<sup>1</sup> This was consulted on as the "Bycatch Reduction Plan").

Limitations and constraints underpinning the analysis fall within the following categories:

- Scope and commissioning constraints,
  - Interdependencies,
  - Evidence of the problem,
  - Quality of data used for impact analysis, and
  - Consultation and testing.
- 

Proactive Release

### **Scope and commissioning constraints**

There is a need for further measures to reduce fisheries risk (i.e., impacts from fishing) to the South Island Hector's dolphin population, to meet the fisheries objectives and support delivery of the overall population outcome as determined in the Threat Management Plan (refer Section 1.1).

The options for consultation were commissioned by the former Minister of Fisheries as part of the consideration of submissions and decision-making process that followed the 2019<sup>2</sup> consultation and noted by Cabinet in June 2020 (refer CAB-20-MIN-0302).

The options were:

- e) extending the commercial and recreational set-net closures around Banks Peninsula from northeast of Goat Point to Snuffle Nose between 4 nm and 12 nm offshore in response to concerns raised in submissions.
- f) a proposal to manage the risk of trawl-related mortality to Hector's dolphins on the east and south coasts of the South Island using trawl gear restrictions.
- g) an approach to manage fishing-related mortality of Hector's dolphins in the South Island that would include a graduated capture response framework, electronic monitoring (on-board cameras), and fishing-related mortality limits.<sup>3</sup>

Also, the options for further area closures to trawl in the north, south, and east coasts consulted on in 2019 were not decided on and therefore remained as options available to the Minister.

The options consulted on, while constraining the range of measures that could be considered, reflect that in most areas the Threat Management Plan fisheries objectives are estimated to be met by current measures and the remaining risk and consequence of fishing-related deaths, given the overall size of the South Island Hector's dolphin population, are low.

### **Interdependencies**

Interdependencies include future decisions on how to manage non-fishing-related threats to Hector's dolphins, which is led by the Department of Conservation.

The need to manage the adverse effects of fishing-related mortality is independent of any other adverse effect on the population. However, the overall population outcomes for Hector's dolphins require all human-induced threats, such as from toxoplasmosis, to be managed appropriately. If these other risks are not managed, then they will undermine the benefits stemming from controls and associated costs placed on the fishing sector.

The threat from toxoplasmosis was not a significant limitation to the analysis of further fisheries measures to protect Hector's dolphins.

### **Evidence of the problem**

Limitations and constraints underpinning evidence of the problem:

- In areas with low densities of Hector's dolphins, for example, the north coast South Island, the estimates of population size, distribution, and/or overlap with fisheries are less reliable.
- Modelling spatial distribution based on suitable habitat for Hector's dolphins was limited by factors the model could not consider, e.g., physical barriers like sandbars in harbours that are difficult to model given the data we have available and the scale of the model.

---

<sup>2</sup> "Protecting Hector's and Maui Dolphins: consultation on proposals for an updated Threat Management Plan", June 2019.

<sup>3</sup> This was consulted on as the “Bycatch Reduction Plan”.

- Public sightings (used as an independent validation of the habitat model) are considered an imperfect way of estimating Hector’s dolphin densities. Sightings can result in biased data because in areas where there are fewer people on the water there will be fewer sightings, but this does not necessarily mean there are fewer Hector’s dolphins.
- Uncertainty in the extent and location of fishing-related deaths of Hector’s dolphins due to generally low levels of independent monitoring (via observer coverage), except in a few areas.

We consider the limitations to be of minor to moderate significance. All scientific information and associated estimates that use this information are subject to uncertainty. The power of the risk assessment model methodology that is used to estimate fisheries risk (e.g., annual fishing-related deaths) is that it is explicit about most of this uncertainty (for example, by calculating confidence intervals in estimates of risk reduction). Where this uncertainty cannot be included explicitly within the modelling it is described qualitatively and has been considered within the options analyses and final recommendations.

#### ***Quality of data used for impact analysis***

Limitations and constraints underpinning cost benefit analysis:

- Estimated impacts on commercial fishers rely on assumptions about potential loss of catch, including the diversity in fish species and value of fish caught.
- Estimated impacts on commercial fishers do not consider any adjustments that may be able to be made in relation to fishing using alternative method or locations.
- The estimates of annual revenue loss and total economic costs are subject to a range of assumptions, because we do not have access to the specific business accounts of individual fishers and licensed fish receivers. Therefore, the estimates are not a definitive measure of net costs and subject to uncertainty.
- There is sparse data and information on the level of recreational set net fishing effort and catch that would be affected by one of the proposals.
- Much of the qualitative data is derived from information received during public consultation. There is potential bias in the information provided and uncertainty in the magnitude of unquantified costs and benefits.

We consider these limitations to be of minor significance. Areas of uncertainty have been considered within the option analyses.

#### ***Consultation and testing***

Limitations and constraints underpinning regulatory and non-regulatory intervention options:

- Te Ohu Kaimoana and Te Rūnanga o Ngāi Tahu submitted that we should have engaged more with them prior to consultation to allow more opportunity for discussion of the nature and extent of the problem and collective determination of possible options.
- Fisheries New Zealand attended the Te Waka a Māui fisheries forum to hui with iwi (including Te Rūnanga o Ngāi Tahu) from the regional areas affected by the proposed options and met with Te Ohu numerous times both before and during public consultation to discuss the problem definition and options.
- We also note that there was an 8-week consultation with seven meetings held online between 2 November and 1 December 2021 with the public, fishing industry, environmental non-governmental organisations, and affected Mandated Iwi Organisations.

- We consider this process provided adequate time for all parties to have input and submit their views.
- We therefore consider this to have been a relatively minor limitation or constraint on the analysis and development of the preferred set of options.

#### Responsible Manager(s) (completed by relevant manager)

Emma Taylor  
 Director Fisheries Management  
 Fisheries New Zealand  
 Ministry for Primary Industries

[Signature]

2 August 2022

#### Quality Assurance (completed by QA panel)

Reviewing Agency:	MPI
Panel Assessment & Comment:	The MPI Regulatory Impact Analysis Panel has reviewed the Regulatory Impact Assessment <i>Further fisheries measures to protect South Island Hector's dolphins</i> produced by MPI and dated August 2022. The Panel considers that it <b>meets</b> the Quality Assurance criteria. The Panel note that the RIA presents the options analysis in a convincing and consistent manner. The RIA is clear and concise considering the different factors that must be considered for each subpopulation of South Island Hector's dolphin.

## Section 1: Diagnosing the policy problem

### 1.1 What is the context behind the policy problem and how is the status quo expected to develop?

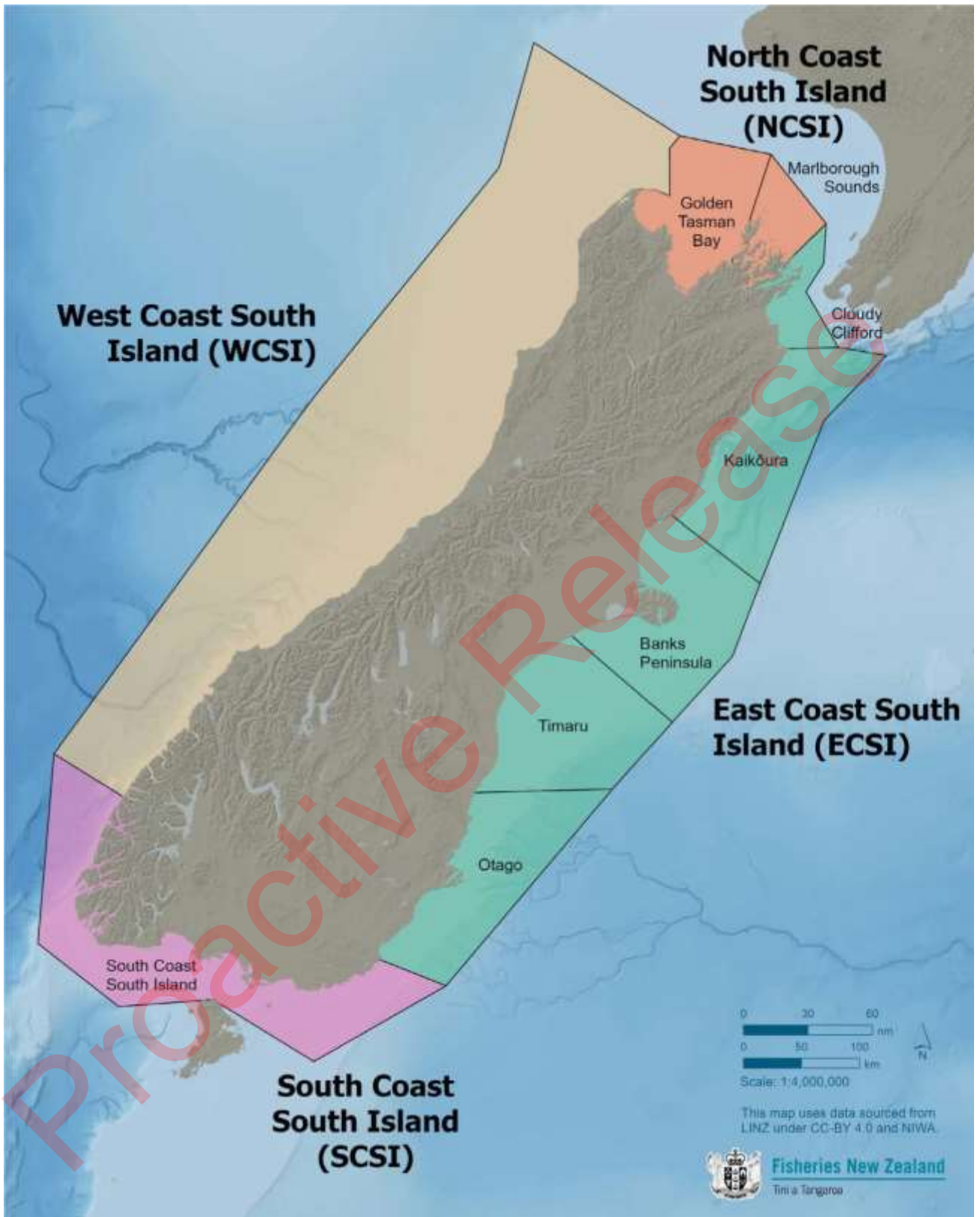
#### Current state

1. Hector's dolphins are a protected species under the Marine Mammals Protection Act 1978 and are vulnerable to population decline because of their short lifespan, late maturity, and low reproduction rate. These factors make population growth a very slow process.
2. Hector's dolphins face a range of human-induced threats. Some of these are a direct cause of dolphin deaths and are estimated to pose the greatest threat: set net and trawl fishing, and the parasitic disease toxoplasmosis. Other human-induced threats include seismic surveying, seabed mining, dolphin watching and marine vessel traffic.

## Threat Management Plan

3. The approach to managing the impacts of these threats is set out in the Hector's and Māui Dolphin Threat Management Plan (Threat Management Plan). The Threat Management Plan contains a set of overarching statements that set out the vision, goals, and objectives for management of human-induced threats, including fishing. Those statements then drive the need for action.
4. The Minister of Fisheries has responsibility for managing threats from fishing, for example, managing the effects of fishing-related mortality to levels specified in the fisheries objectives in the Threat Management Plan.
5. The vision of the Threat Management Plan is:  
  
*New Zealand's Hector's and Māui dolphin populations are resilient and thriving throughout their natural range.*
6. The Threat Management Plan recognises that South Island Hector's dolphins (Hector's dolphins) are made up of four subpopulations based on geographic and genetic evidence (north, east, south, and west coasts) (see **Figure 1** below). Evidence is inconclusive as to whether the north coast subpopulation is genetically distinct, but as a precaution it is treated as such.
7. The population of Hector's dolphins is estimated to be around 15,000 individuals and is currently listed as Nationally Vulnerable under the New Zealand Threat Classification System. There are about 5,500 Hector's dolphins on the west coast, 330 on the south coast and 9,100 on the east coast of the South Island. The number of Hector's dolphins on the north coast is unknown.
8. The Threat Management Plan also defines five local populations within the east coast South Island subpopulation (Cloudy Clifford, Kaikōura, Banks Peninsula, Timaru, and Otago). Hector's dolphins have relatively small home ranges (approximately 30 to 50 kilometres alongshore), with potentially little movement between areas. This increases the risk of localised depletion and associated impacts on local area ecosystem function, as well as fragmentation of the subpopulation if opportunities to intermix are significantly reduced or lost. By managing threats at the scale of local populations, we can help ensure that this does not occur.





**Figure 1** Locations of the South Island Hector's dolphin subpopulations and defined local population areas within the east coast.

### Threat Management Plan population outcomes and fisheries objectives

9. To help achieve the Threat Management Plan's vision, the population outcome for Hector's dolphins is:

*Human impacts are managed to allow each subpopulation to increase to a level at or above 90 percent of the maximum number of dolphins the environment can support.*

10. For the Threat Management Plan population outcome to be achieved all human-induced threats must be managed effectively. Fisheries objectives have been set to ensure that dolphin deaths arising from fisheries threats do not:
  - exceed the maximum number of human-induced deaths that could occur to achieve the population outcome with 95 percent certainty,
  - cause localised depletion, and
  - create substantial barriers to dispersal or connectivity between subpopulations.
11. The fisheries subpopulation objective is set to ensure that fisheries risk (for example, impacts of fishing) is managed to a level low enough to allow the subpopulation to recover to 90 percent of the maximum population that could be achieved if there was no fishing, with 95 percent certainty.
12. For local populations, the focus is on ensuring fisheries risk does not result in localised depletion or prevent connectivity between areas, and a less conservative population outcome (i.e., 80 percent of unimpacted status with 95 percent certainty) has been applied.

#### *Risk-based framework*

13. One of the key inputs to assess whether the impacts of human-induced threats on Hector's and Māui dolphins exceed the levels defined in the Threat Management Plan fisheries objectives is a spatial risk assessment model (the risk assessment model). The risk assessment model calculates a 'population sustainability threshold' (PST).
14. The PST is an estimate of the maximum number of annual human-induced deaths that can occur while still allowing each sub or local population to achieve the relevant population outcome and therefore the Threat Management Plan fisheries objectives. The risk assessment model enables us to estimate:
  - the level of fishing-related deaths or risk from commercial fisheries in comparison to the PST for each sub and local population; and
  - the potential reduction in fishing-related deaths or risk associated with different management measures.

#### **Te Mana o te Taiao**

15. The Government's recent Te Mana o te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020 includes a:
  - 2025 goal that the number of fishing-related deaths of protected marine species is decreasing towards zero for all species, and
  - 2050 goal that the mortality of non-target species from marine fisheries has been reduced to zero.
16. Te Mana o te Taiao provides the overall strategic direction for biodiversity in Aotearoa New Zealand for the next 30 years. It gives overarching direction and guidance to related strategies and work programmes, including the implementation of the goals and objectives of the Threat Management Plan.
17. Under the Threat Management Plan and the Fisheries Act 1996 there is no requirement to manage fishing-related mortality of Hector's dolphins to zero. There may always be a risk of bycatch and death of Hector's dolphins when they overlap with fishing activity.

## Societal expectations

18. There are increasing societal expectations both domestically and internationally for fishing to be as low impact as possible on the aquatic environment.
19. The public is increasingly seeking reassurance and confidence that our fisheries, and the impacts of fishing on the marine environment (particularly on protected species such as dolphins), are properly and responsibly managed.

## Regulatory system for managing the effects of fishing on Hector's dolphins

20. The primary regulatory system for managing the effects of fishing on Hector's dolphins is the Fisheries Act 1996 (Fisheries Act) and associated regulations under the Fisheries Act.
21. The purpose of the Fisheries Act is to provide for the utilisation of fisheries resources while ensuring sustainability, which includes avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment. The Fisheries Act gives the Minister of Fisheries (currently fulfilled by the Minister for Oceans and Fisheries) powers to manage the effects of fishing-related mortality on protected species (e.g., Hector's dolphins) in the absence of a Population Management Plan.<sup>2</sup>
22. The Fisheries Act defines the relevant considerations the Minister must take into account when making decisions. These include New Zealand's international obligations and specific environmental and information principles.
23. Relevant fisheries case law considers that the management of the fishing-related mortality of protected species should be considered at a population level, not at an individual level. The Minister must decide the measures that are necessary to avoid, remedy, or mitigate the effects of fishing-related mortality on any protected species.
24. The Fisheries Act allows the Minister to use various tools to manage the fishing-related mortality of protected species. These include making regulations to prohibit fishing or the use of certain fishing methods, and the setting of fishing-related mortality limits.

## Government regulation - current fisheries management measures

25. Extensive fisheries measures have been regulated since the Threat Management Plan was developed in 2007. The most recent fisheries measures took effect around the South Island on 1 October 2020 and resulted in a large increase in areas closed to commercial and recreational set net fisheries.<sup>3</sup> The South Island set net closure areas

---

<sup>2</sup> The Minister of Conservation can approve a Population Management Plan for a marine mammal species under the Marine Mammals Protection Act. A population management plan cannot be developed for Hector's dolphins because it is biologically impossible for species recovery to occur within a 20-year period.

<http://www.legislation.govt.nz/act/public/1978/0080/latest/whole.html#DLM25314> Last accessed April 2022.

<sup>3</sup> The Regulatory Impact Assessment for the 2020 decisions can be found on the Treasury website:

<https://www.treasury.govt.nz/sites/default/files/2020-08/ria-mpi-dolphin-aug20.pdf> Last accessed April 2022.

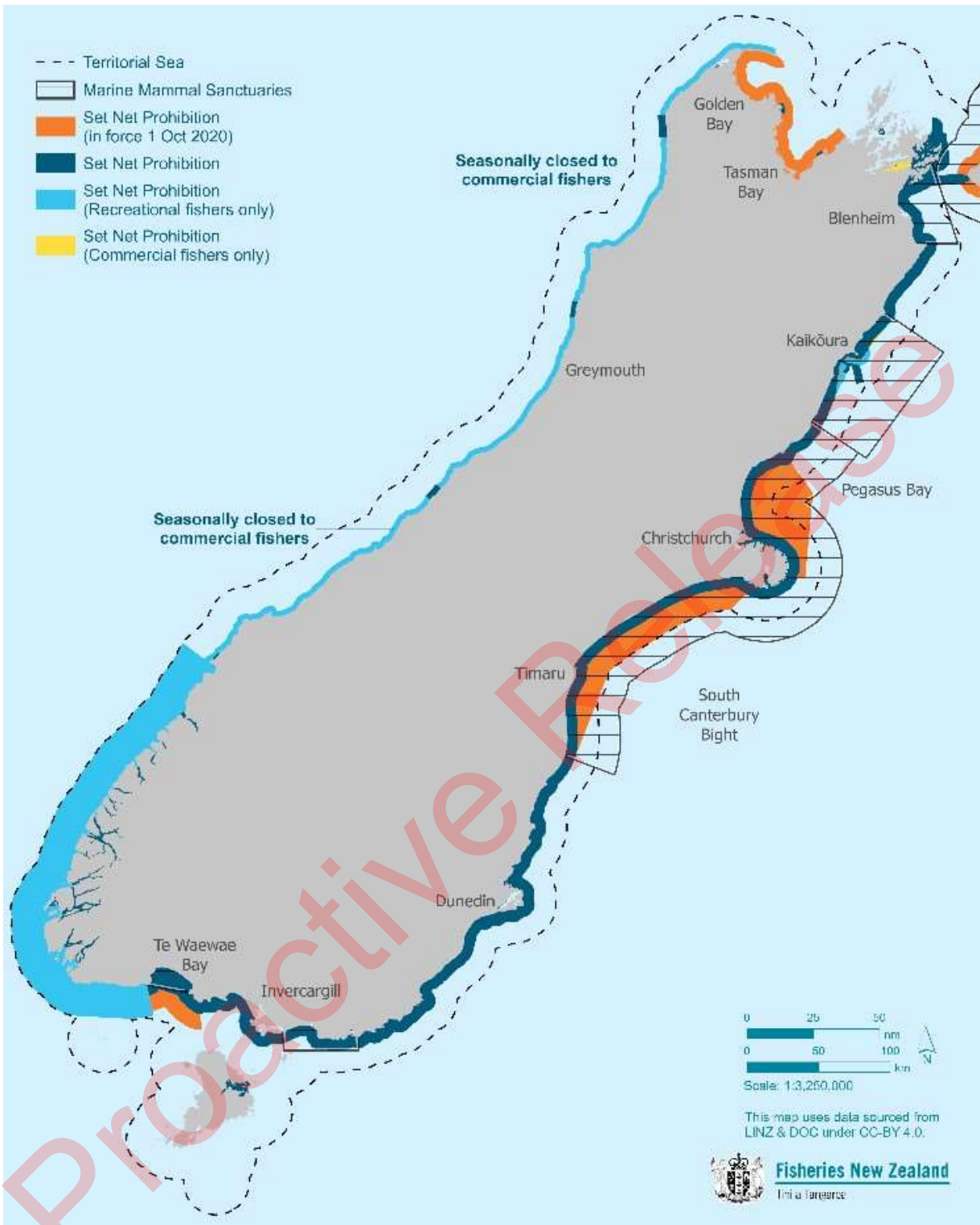
increased from about 10,345 km<sup>2</sup> to 16,525 km<sup>2</sup>. Trawl measures (which include closures and gear restrictions) cover 6,988 km<sup>2</sup> (see **Figure 2** and **Figure 3** below).

26. The current suite of regulatory measures reflects the different threats facing Hector's dolphins and were based on the knowledge and tools available (about the dolphins and threats) at the time they were put in place. Monitoring of interactions between commercial fishing activity and Hector's dolphins is currently carried out by fisheries observers.

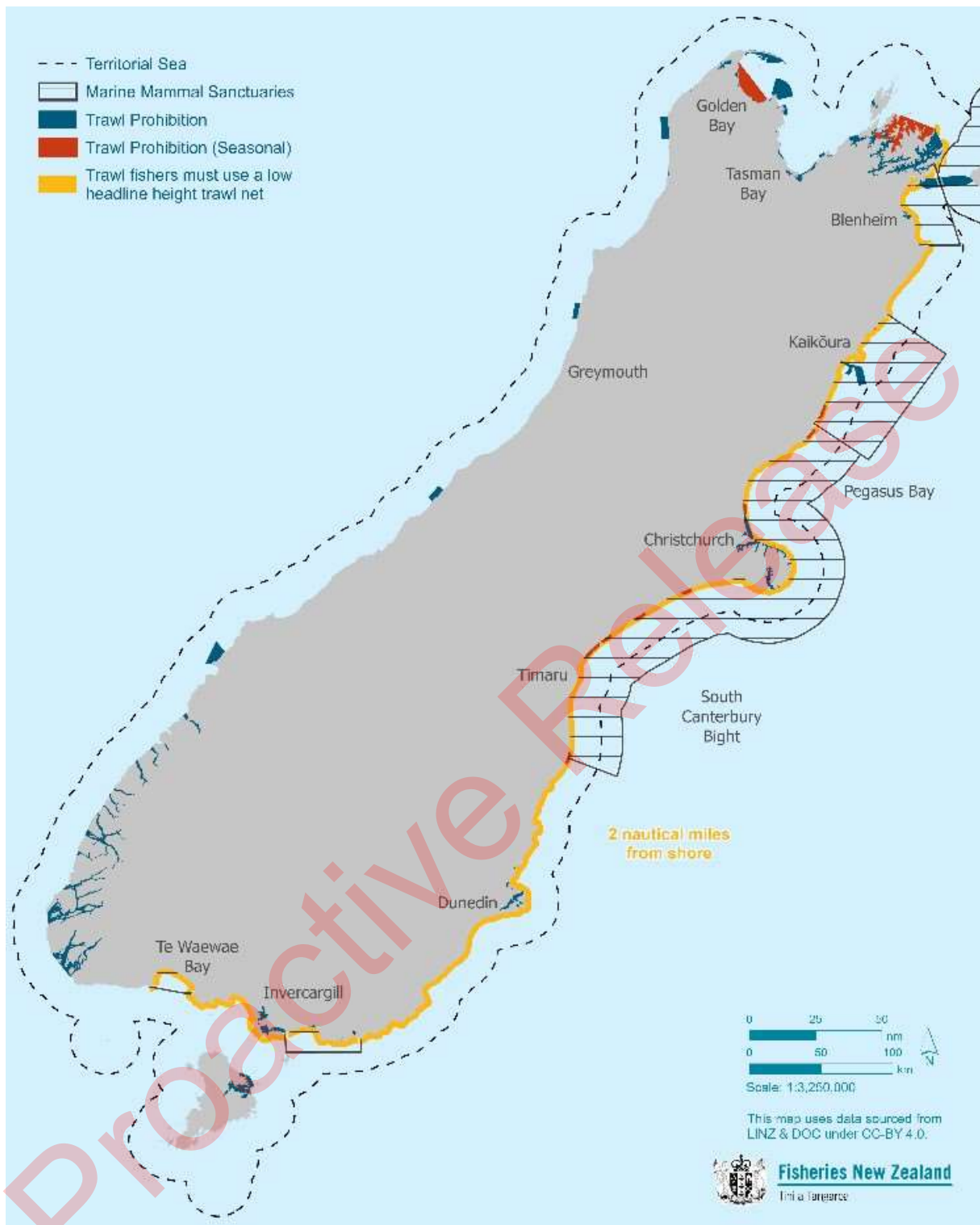
#### *Status quo*

27. Under the status quo, there will be no new measures to manage the remaining fisheries risk to Hector's dolphins. There will be ongoing research to reduce uncertainty in our assessment of risk, existing electronic catch and position reporting requirements, an on-board camera monitoring programme will be introduced to support verification of commercial fisher bycatch reporting. These measures will help improve our understanding of the impact of commercial fishing on Hector's dolphins but do not of themselves reduce the impact on the population.
28. In the absence of further action, the north and south coast South Island subpopulations and the local Kaikōura population within the east coast subpopulation is estimated to incur impacts from commercial fishing exceeding the levels required to meet the Threat Management Plan fisheries objectives.

Proactive Release



**Figure 2.** Current set net restrictions and closed areas around the South Island.



**Figure 3.** Current trawl restrictions and closed areas around the South Island.

## 1.2 What is the policy problem or opportunity?

### The problem

29. We consider there is a need for further measures to reduce fisheries risk to meet the Threat Management Plan fisheries objectives in some areas.
30. The Threat Management Plan fisheries objectives help inform whether (and where) action is required to reduce the impacts of fishing on Hector's dolphins to ensure that fishing-related deaths are below the level necessary to support the overarching

population outcomes. These objectives form part of the criteria used to assess the options to address fisheries risk and are described in **Section 1.1**.

31. A range of information is available to evaluate whether more measures are necessary to meet the Threat Management Plan fisheries objectives. This includes the outputs of the risk assessment model and qualitative information on the likelihood and consequences of fishing-related mortality within each subpopulation.
32. We estimate we have met the west and east coast subpopulation fisheries objectives and most of the local population fisheries objectives within the east coast subpopulation, except for the Kaikōura local population (refer to .
33. **Table 1** below).
34. The upper estimate of current fishing-related deaths for the south coast subpopulation also exceeds the level required to achieve the subpopulation fisheries objective for this area.

**Table 1 Estimate of the annual fishing-related deaths from commercial fisheries (set net and trawl combined) in comparison to the population sustainability threshold (PST). Estimates that exceed the PST are bolded.**

Sub and local populations	Estimate of annual fishing-related deaths (5 <sup>th</sup> to 95 <sup>th</sup> % confidence interval)	Population Sustainability Threshold to achieve for:	
		Subpopulation objective: 90% unimpacted status	Local population objective: 80% unimpacted status
<b>East Coast</b>	17.4 (7.4 – 33.7)	46	N/A
Cloudy Clifford	0.5 (0.2 – 0.9)	N/A	5.2
Kaikōura	<b>7.5 (4.3 – 12.7)</b>	N/A	7.6
Banks Peninsula	2.1 (0.6 – 4.7)	N/A	45.1
Timaru	5.2 (1.5 – 11.2)	N/A	27.3
Otago	2.1 (0.9 - 4.2)	N/A	6.4
<b>South Coast</b>	0.9 (0.3 - <b>1.8</b> )	1.6	N/A
<b>West Coast</b>	5.1 (1.4 – 10.8)	26.0	N/A

35. When there is insufficient information on Hector's dolphin population size, as is the case for the north coast subpopulation, the fisheries risk is presented in terms of a risk score rather than as estimated deaths. A risk score is the proportion of dolphins dying per year, scaled with reference to the population objective. A risk score <1.00 means the population objective will be achieved. The upper estimate of current fisheries risk score for the north coast subpopulation exceeds the level required to achieve the subpopulation fisheries objective (refer to **Table 2** below).

**Table 2 North Coast Subpopulation: Estimate of the risk score (fisheries risk) from commercial fisheries (set net and trawl combined) in comparison to the population sustainability threshold (PST). Estimate that exceeds the PST is bolded.**

Sub population	Estimate of annual risk score (5 <sup>th</sup> to 95 <sup>th</sup> % confidence interval)	Population Sustainability Threshold to achieve for north coast subpopulation objective: 90% unimpacted status

North Coast	0.8 (0.3 – 1.5)	1.0
-------------	-----------------	-----

36. As a result, we consider further management intervention is required to ensure the Threat Management Plan fisheries objectives will be met for the north and south subpopulations and the Kaikōura local population of Hector’s dolphins, and that the industry will be supported to reduce fishing-related dolphin deaths toward zero over time.
37. This RIA includes options to address the risk and impacts of fishing-related mortality as a result of fishing-related threats.

**Who are the stakeholders in this issue ?**

38. The main stakeholders are commercial fishers, environmentalists, independent/academic experts, recreational fishers, regional councils, and the public. Tangata whenua have a key interest in the protection of Hector’s dolphins, the activities that may impact on the dolphins, and how those activities are managed.
39. No population group is disproportionately affected by the problem being addressed.

*Stakeholder view of the problem*

40. Stakeholder were consulted on the problem definition and various options to address the problem. Details on the consultation process are outlined below in Section 2.3.
41. Submitters were divided on the need for further measures, how that need is determined, and the nature and extent of any further measures.
42. Most environmental interests, academics, and public submitters support a zero mortality goal and immediate implementation of measures that provide complete certainty this goal will be achieved (for example, via extensive regulatory closures). Many of these submitters do not support the quantitative spatial risk assessment model that informs our estimates of fisheries risk.
43. They consider the methodology flawed and that it underestimates the risk that fishing poses to Hector’s dolphins, and/or obscures the risk to smaller populations or groups of Hector’s dolphins located within a subpopulation.
44. The industry fishing industry representatives and Te Ohu Kaimoana<sup>4</sup> (Te Ohu) consider that the Minister’s legislative obligations are met with current measures. Fisheries

---

Inshore New Zealand<sup>5</sup> (FINZ) and Southern Inshore Fisheries<sup>6</sup> considers the division of local populations to be arbitrary, based on low dolphin densities, and lacking genetic basis.

45. They consider managing risk to Hector’s dolphins on these smaller spatial scales may result in fisheries interventions that are inappropriate and unnecessary to help meet the

---

<sup>4</sup> Te Ohu Kaimoana is an independent Trust, established to provide for the allocation and governance of Fisheries Settlement assets, divested under the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992, and Fisheries Deed of Settlement. Te Ohu provides fisheries advisory services to iwi, the Māori Fisheries Settlement

<sup>5</sup> Fisheries Inshore New Zealand Ltd is the Sector Representative Entity for commercial inshore finfish, pelagic and tuna fisheries in NZ.

<sup>6</sup> Southern Inshore Fisheries Management is an associate of FINZ and represents commercial stakeholders in inshore fishstocks around the South Island



overarching population outcome for the subpopulation. They do not support the need for further regulatory measures. However, they support the desire to minimise interactions with Hector's dolphins and the high-level aspirations to reduce interactions toward zero over time, primarily through voluntary measures.

#### *Requirements under the Treaty and Māori interests*

46. Section 5(b) of the Act requires decision makers to act in a manner consistent with the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (Settlement Act). The Settlement Act is required to be interpreted to best further the agreements in the 1992 Fisheries Deed of Settlement.
47. Section 10 (a) of the Settlement Act provides that non-commercial fishing rights shall in accordance with the Principles of the Treaty of Waitangi continue to give rise to Treaty obligations on the Crown.
48. Decisions on measures to protect dolphins under the Fisheries Act fall solely to the Minister of Fisheries (currently fulfilled by the Minister for Oceans and Fisheries).
49. To act consistently with the Principles of the Treaty means that the Minister needs to engage with Māori in good faith to inform them of Crown proposals, be well informed on Māori views on the proposed changes, decide what is reasonably required to actively protect Māori interests, and avoid creating new grievances.
50. Māori have an interest in both the protection of Hector's dolphins and the management of, and involvement in, activities that maybe be impacted by additional protection measures (e.g., commercial, recreational, and customary fishing).
51. Tangata whenua are represented through Iwi Fisheries Forums, which provide for input and participation with iwi on fisheries issues and potential proposals, and Māori also are represented through consultation with a range of bodies including Te Ohu, Mandated Iwi Organisations, Asset-Holding Companies, and individuals.
52. The Minister has an obligation under the Fisheries Act 1996 to provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned and must have particular regard to kaitiakitanga.

---

entities and industry groups. Te Ohu provides advice to and is guided by the 58 Mandated Iwi Organisations that represent all Māori in New Zealand. Iwi are also represented separately through these Mandated Iwi Organisations and Asset Holding Companies.

53. Te Waka a Māui me Ōna Toka Iwi forum (Te Waka a Māui), which represents the nine iwi of the South Island, consider that any need for further measures should be driven by actual risk and observed captures, not risk that is estimated via a model. Currently, they do not consider there is a need for further measures that restrict fishing.

### **1.3 What objectives are sought in relation to the policy problem?**

## Population outcomes

54. For Hector's dolphins, the Threat Management Plan population outcome is:

- Human impacts are managed to allow the population to increase to a level at or above 90 percent of the maximum number of dolphins the environment can support.

## Fisheries management objectives

55. To support achieving the population outcomes, the following fisheries objectives apply:

- Ensure that dolphin deaths arising from fisheries threats do not:
  - i. exceed population sustainability thresholds<sup>7</sup> set to achieve the applicable population outcome with 95% certainty,
  - ii. cause localised depletion, and
  - iii. create substantial barriers to dispersal or connectivity between subpopulations.

56. The objectives for South Island Hector's dolphins would mean that, with 95 percent certainty each South Island subpopulation is able to recover to and/or maintain a level that is no less than 90 percent of what it would be in the absence of any fisheries impact.

57. The fisheries objectives ensure that fisheries impacts are successfully managed to support the population outcomes being achieved. Achieving the fisheries objectives is not dependent on other impacts being managed also; however, achieving the population outcomes does rely on successful management of all human-induced threats. It is important that the other major lethal threat to the dolphins (i.e., toxoplasmosis) is addressed. Fisheries measures alone will not deliver the desired outcomes.

---

<sup>7</sup> The population sustainability threshold (PST) is the maximum number of dolphin deaths per year that can occur while still allowing the population outcome to be achieved.

## Section 2: Deciding upon an option to address the policy problem

### 2.1 What criteria will be used to compare options to the status quo?

58. The criteria to be applied when assessing the options for further fisheries measures are:
- **Criterion 1:** Does the option reduce the fisheries risk to a level that enables the population to recover to a size no more than 10 percent lower than what it would be if there was no fisheries impact?
  - **Criterion 2:** Does the option prevent or avoid localised depletion?
  - **Criterion 3:** Is the option responsive to changes in fisheries risk (spatial and temporal)?
  - **Criterion 4:** Does the option encourage industry to shift to better fishing practices to avoid dolphin captures?
  - **Criterion 5:** Does the option allow fishers to choose the most effective mitigation measures(s) for their operation?
  - **Criterion 6:** Does the option minimise the impact (including cost) on fishers to the extent possible?
59. Criteria 1, 2 and 3 are derived from the fisheries objectives of the Threat Management Plan (as outlined in para 49).
60. Criterion 4 is informed in part by the goals and objectives of the Government's Te Mana o te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020 (see para 14-16).
61. Criteria 5 and 6 are informed in part by the relevant legislative provisions under the Fisheries Act 1996.

#### Trade-offs

62. The ability to meet Criteria 1, 2, and 3 can at times come at the expense of Criterion 4, 5, and 6 and vice versa. Each option provides for a different level of protection (and certainty around the level of risk reduction) to Hector's dolphins within each subpopulation.
63. The more expansive the protection measures are that prohibit fishing, the higher the socioeconomic impacts on the primary users and beneficiaries of the fishery resources, and the less likely to encourage industry to shift to better fishing practices.

### 2.2 What scope will options be considered within?

#### Previous decisions made as part of the 2019 review

64. The options proposed for further measures are informed by the outcomes of the 2019 review of the Threat Management Plan and associated decisions made in 2020. The fisheries measures that took effect on 1 October 2020 resulted in a large increase in areas closed to commercial and recreational set net fisheries around the South Island, which significantly reduced fisheries risk to Hector's dolphins.

#### Minister's commissioning

65. As part of the 2020 decisions, the previous Minister of Fisheries did not make decisions on the trawl fishing closure proposals that were consulted on in 2019 and requested the following additional options be consulted on before a decision on further measures is made:

- a capture response framework (hereafter referred to as a Bycatch Reduction Plan),
- trawl fishing gear restrictions, and
- commercial and recreational set net fishing closure around Banks Peninsula.

66. These latter proposals arose from the previous consultation undertaken in 2019. They were informed by submissions received at the time.

67. The options consulted on, while constraining the range of measures that could be considered, reflected that in most areas the Threat Management Plan fisheries objectives are estimated to be met by current measures and the remaining risk and consequence of fishing-related deaths, given the overall size of the South Island Hector's dolphin population, are low. This means that options other than trawl closures can be considered.

### Options out of scope

68. Options that prohibit all set net or trawl fishing within the full known or predicted range of Hector's dolphins were not consulted on and are out of scope for decision-making. Such proposals exceed the level of action required to help achieve the population outcome and meet the Threat Management Plan fisheries objectives set for Hector's dolphins. We also consider them unlikely to fall within the Minister's discretion under the Fisheries Act.

69. Options on set net fishing closures previously consulted on in 2019 and for which decisions were made in 2020 are also out of scope of decision-making.

### 2.3 What options are being considered?

70. In 2021 we consulted on four options (not including the status quo) to manage the effects of fishing-related mortality on Hector's dolphins. These are:

- Bycatch Reduction Plan
- Trawl gear restrictions
- Trawl closures
- Commercial and recreation set net closure off Banks Peninsula.

71. A summary of the options is outlined in **Error! Reference source not found.**3 below and associated maps shown in **Figure 4** (Option 3a – Trawl gear restrictions), and **Figure 6** (Option 4 – extended set net closures).

72. Option 3b - Trawl closures (in **Figure 5**) were consulted on in 2019 and remain open to the Minister.

73. Options may be considered in combination or independently of one another.

### Consultation

74. Consultation on the new options ran from 11 October to 6 December 2021. Fisheries New Zealand received 293 submissions in total. This included submissions from our Treaty Partners/tangata whenua and seven broad stakeholder groups (fishing industry, recreational fishers, local government, environmental interests, academics, tourism operators, and the public). 48 of the submissions followed a template or petition.

75. In addition, approximately 160 people attended seven consultation meetings held online between 2 November and 1 December 2021 with the public, fishing industry, environmental non-governmental organisations, and Mandated Iwi Organisations.

76. The 2019 public consultation process on the review of the Hector's and Maui Dolphin Threat Management Plan included the trawl closure proposals.<sup>8</sup> In that review over 15,200 submissions and 76,000 petition signatures were received, noting that this included measures to protect Maui dolphins.
77. Fisheries New Zealand, both before and during public consultation, attended the Te Waka a Māui fisheries forum to hui with iwi from the regional areas affected by the proposed options, and met with Te Ohu numerous times, during both consultation processes.

**Table 3 Summary of options.** Note each option can be considered independently of other options.

Option Summary
<p><b>1: Status quo</b></p> <p>No new measures specifically aimed at managing the remaining fisheries risk to Hector's dolphins. As for all options, there will be ongoing research to reduce uncertainty in our assessment of fisheries risk, existing electronic catch and position reporting requirements, and the wider rollout of regulated on-board camera monitoring (refer to ENV-22-MIN-0013<sup>9</sup>) to support verification of fisher bycatch reporting will be introduced.</p>
<p><b>2: Bycatch Reduction Plan</b></p>

<sup>8</sup> The consultation document and additional supporting evidence can be found at this link: <https://www.fisheries.govt.nz/news-and-resources/consultations/hectors-and-maui-dolphins-threat-management-plan-review/>

<sup>9</sup> [Rollout of cameras on fishing vessels to begin | Beehive.govt.nz](https://www.beehive.govt.nz/news/rollout-of-cameras-on-fishing-vessels-to-begin)

A suite of voluntary and regulatory measures to incentivise and support fishers to reduce Hector's dolphin bycatch towards zero.

**(i) Voluntary measures** would be applied to all the subpopulations and include:

- Protected species risk management plans on every commercial set net and trawl vessel that set out the mitigation measures each vessel will use.
- Detailed reporting of circumstances surrounding Hector's dolphin captures to help us identify common factors that can inform techniques or tools to avoid future captures.
- Escalating vessel-based capture responses. Agencies and industry work with individual vessel operators that capture a Hector's dolphin to identify and implement vessel-specific techniques to reduce likelihood of further captures by that vessel.
- Escalating area-based responses. Agencies and industry work with the relevant commercial fleets in an area if Hector's dolphin captures are occurring to ensure they collectively take voluntary measures to avoid further captures.
- Supporting development of new mitigation techniques (informed by mātauranga and tikanga) through our research planning processes and applications to access existing funds.
- Public quarterly reporting on the performance of the bycatch reduction plan (captures and responses) with an annual review and report on performance to Ministers from the Department of Conservation and Fisheries New Zealand.

**(ii) New regulatory measures** include:

- Setting fishing-related mortality limits for the south coast subpopulation and each of the five local populations within the east coast subpopulation.

### **3a: Trawl gear restrictions**

Extend the current areas where low headline height trawl nets (<1m) are regulated, or introduce low trawl speed (<2.5 knots) regulations, or both<sup>10</sup>, in:

- the east coast South Island (Pegasus Bay and South Canterbury Bight to Timaru),
- south coast South Island (entirety of Te Waewae Bay and from Sand Hill Point to Wakaputa Point and 4 nm offshore), and/or
- north coast South Island (between Farewell Spit and Cape Soucis to 2 nm offshore).

Note that the extensions proposed are designed to cover the main distribution areas for Hector's dolphins on the north, south, and east coasts.

### **3b: Trawl closures**

Put in place regulated trawl fishing closures in:

- the east coast South Island (Pegasus Bay and South Canterbury Bight to Timaru),
- south coast South Island (entirety of Te Waewae Bay and from Sand Hill Point to Wakaputa Point and 4 nm offshore), and/or
- north coast South Island (between Farewell Spit and Cape Soucis to 2 nm offshore).<sup>13</sup>

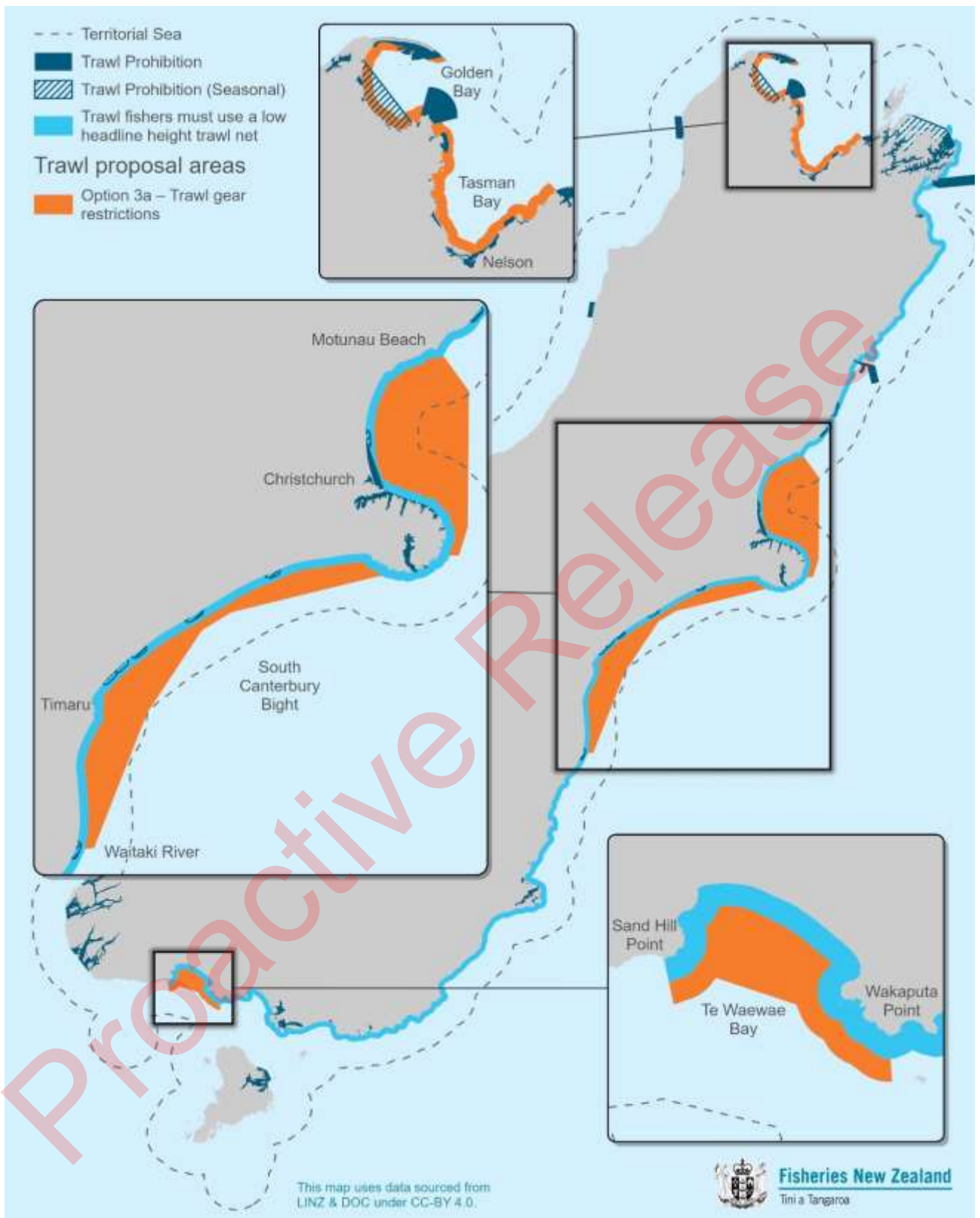
### **4: Commercial and recreational set net closure**

Extend the existing regulated commercial and recreational set net closure around Banks Peninsula from four nautical miles out to 12 nautical miles offshore.

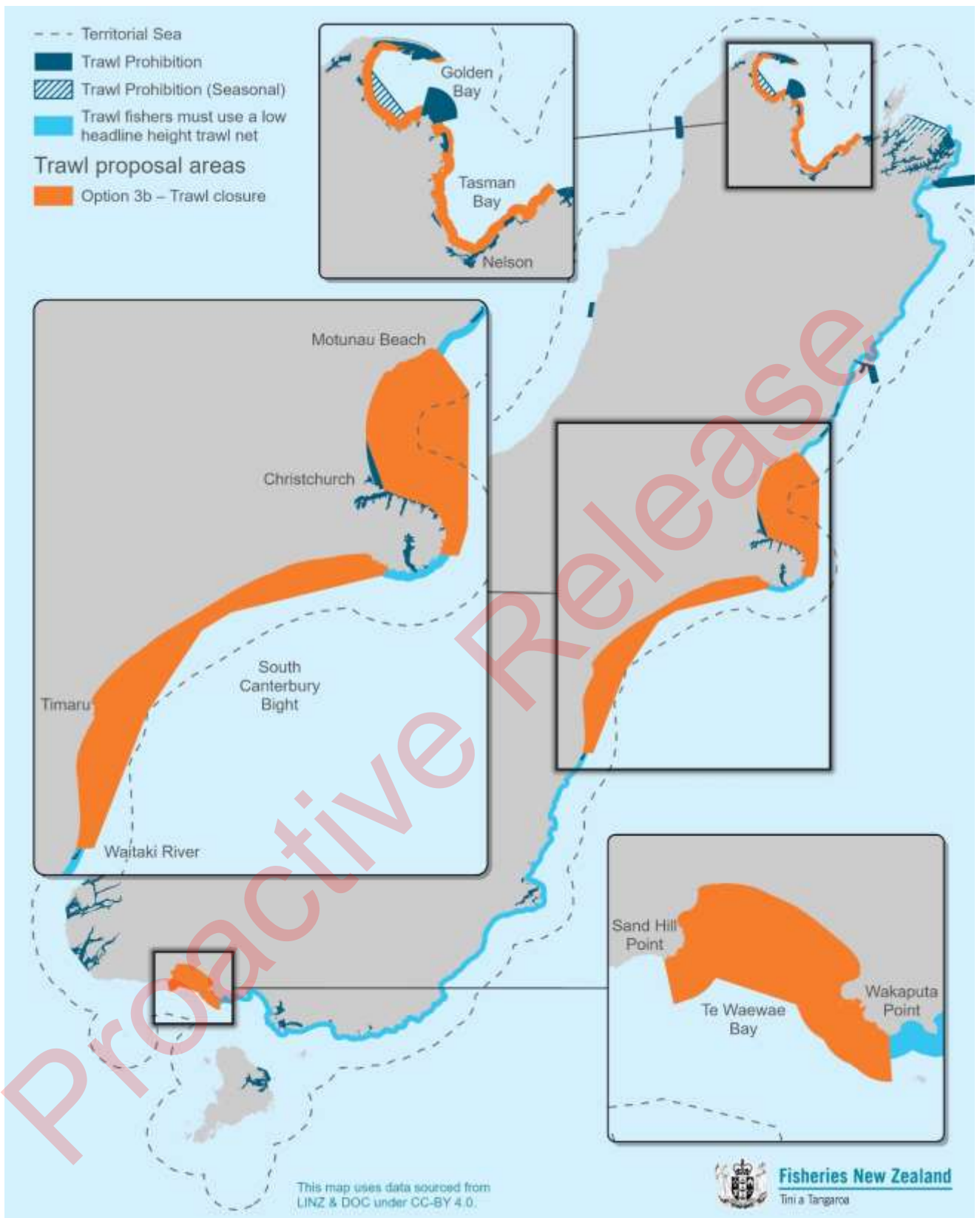
---

<sup>10</sup> Low headline height trawl net of 1 metre refers to nets where the vertical height of the net opening is no more than 1 metre when it is towed along the bottom. Anecdotal and observational information suggests that using a low headline height net or slow trawl speed reduces the chances of dolphins being captured in a trawl net.

<sup>13</sup> Note that the areas proposed for trawl fishing closures are identical to those in option 3a

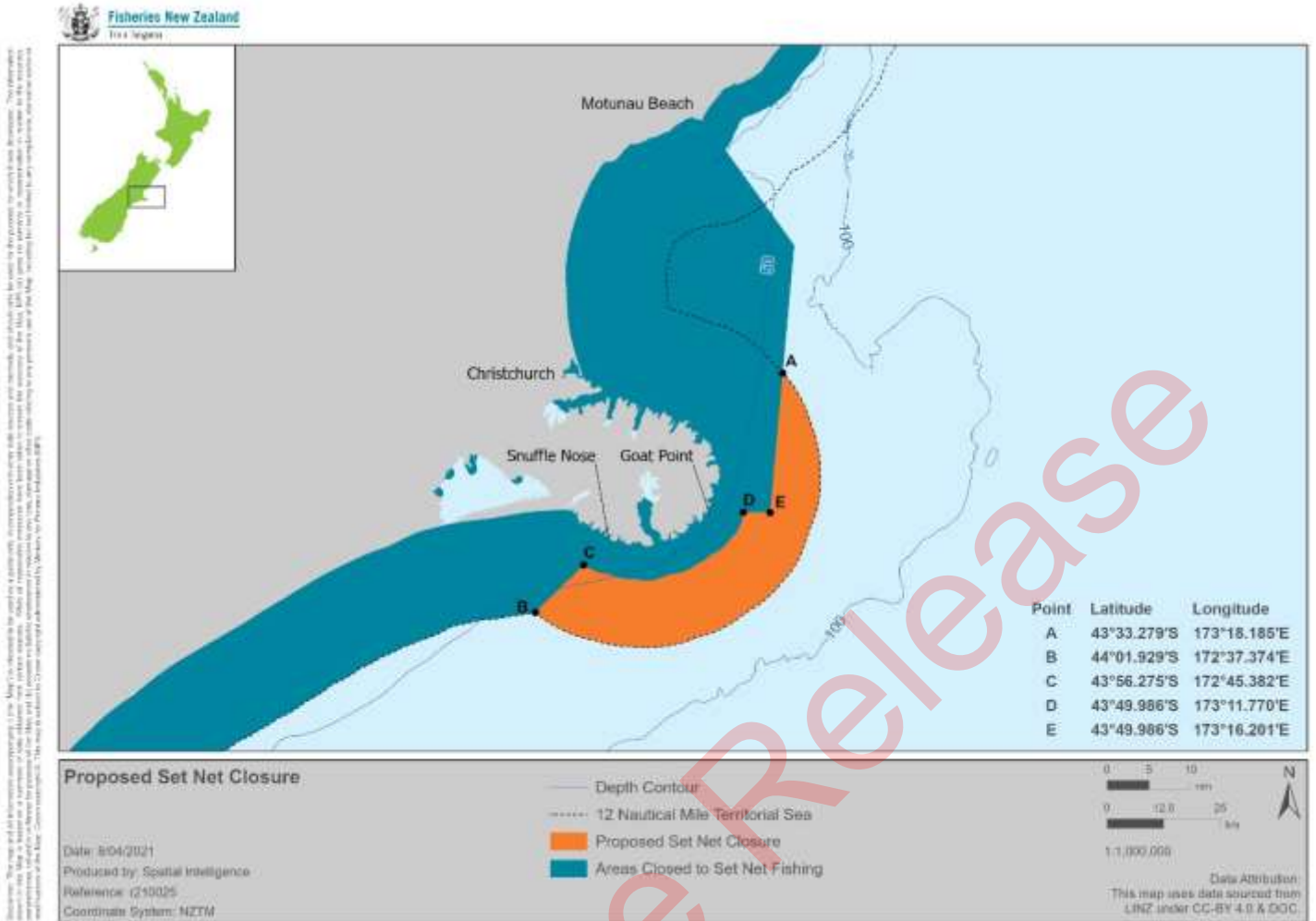


**Figure 4.** Option 3a – Proposed trawl gear restrictions areas in the north, east and south coasts of the South Island.



**Figure 5.** Option 3b – Proposed trawl fishing closures areas in the north, east and south coasts of the South Island.





**Figure 6.** Option 4 – Proposed commercial and recreational set net closure around Banks Peninsula.

## 2.4 Analysis of Options

### Option 1 – Counterfactual

79. Under Option 1, no new measures are implemented specifically aimed at managing the remaining fisheries risk to Hector's dolphins.
80. As for all options, there will be ongoing research to reduce uncertainty in our assessment of fisheries risk, existing electronic catch and position reporting requirements, and on-board camera monitoring to support verification of fisher bycatch reporting.
81. Improved monitoring and information to inform our assessment of the fisheries risk does not of itself improve outcomes for Hector's dolphins. However, improved information may tell us more accurately what further measures, if any, are needed to manage remaining risk for the future.
82. The wider rollout of on-board cameras will significantly improve available information on Hector's dolphin bycatch in these areas, where observer coverage has been low to moderate.

### Stakeholder views

83. Most respondents opposed the status quo. These submissions represented environmental interests, academia, the public, tourism operators, Environment Canterbury, and Te Pātaka o Rākaihautū / Banks Peninsula Community Board.
84. There was some support from tangata whenua for further measures. However, Te Waka a Māui, which represents the nine iwi of the South Island, do not support further measures that restrict fishing.
85. Te Ohu Kaimoana consider the Minister for Oceans and Fisheries' legislative obligations would seem to be met, and collaborative efforts rather than top-down regulation should be undertaken to go beyond statutory requirements.
86. The fishing industry and recreational fishers also supported the status quo.

#### *Considerations post-consultation*

87. Given the current conservation status of the Hector's dolphin populations, if identified threats are not further mitigated then there is a risk that their status will not improve, and the population outcomes and objectives as set out under the Threat Management Plan will not be achieved.
88. Scientific models estimate that the current level of fishing-related mortality of Hector's dolphins exceeds the level required to achieve the subpopulation and local population objectives in some areas. The level of fishing-related mortality is estimated separately for set-net and trawl nets.

#### **Option 2 – Bycatch Reduction Plan**

89. The Bycatch Reduction Plan (the Plan) is intended to incentivise and support fishers to reduce fishing-related Hector's dolphin deaths towards zero over time, irrespective of the level of fishing-related deaths currently occurring (see summary in Table 2 above).
90. The Plan is designed to best meet the Threat Management Plan fisheries objectives, and the strategic direction set out under Te Mana o Te Taiao by:
  - defining and regulating the Government's environmental bottom line by setting fishing-related mortality limits for the south coast subpopulation and each of the east coast local populations, which gives greater certainty that fishing-related dolphin deaths will not exceed the levels necessary to meet the fisheries objectives in these areas,
  - introducing escalating responses to Hector's dolphin captures by a vessel, or in an area, to better incentivise and support fishers to avoid further captures – including in areas where there are no fishing-related mortality limits (for example, north and west coast subpopulations),
  - leveraging new technology to detect and verify Hector's dolphin bycatch, which will help give us certainty when and in what circumstances fishing-related deaths occur so that we can act to prevent further captures,
  - allowing fishers to choose the most effective mitigation approaches for their vessel/method by regulating the desired outcome rather than how it is to be achieved,
  - supporting development and testing of new mitigation techniques (informed by mātauranga and tikanga) to reduce capture of Hector's dolphins over time, and
  - regularly reporting publicly on performance of the Plan to increase transparency.

### *Use of voluntary versus regulatory measures*

91. The larger number of Hector's dolphins (about 15,000) means that there is a relatively low impact on the overall population from a fishing-related death. This provides an opportunity to develop and test innovative approaches, namely the Bycatch Reduction Plan, to reduce fishing-related mortality without putting the viability of the population at risk.
92. The Bycatch Reduction Plan includes a range of voluntary components (as summarised in Table 2) to encourage the development and uptake of new mitigation measures by fishers and their responsiveness to new information on the nature and extent of risks to Hector's dolphins from fishing. These were consulted on to apply to the north, east and south coast Hector's dolphin subpopulations.
93. Regulated fishing-related mortality limits of dolphins provide a backstop to ensure objectives are met, and the proposed wider rollout of on-board cameras would further support the Bycatch Reduction Plan by verifying reporting and providing contextual information where captures occur. Regulated limits are only proposed for subpopulations and local populations where we considered there is a need to reduce or manage the fisheries risk across or within a subpopulation (i.e., at local population levels) and have:
  - a Hector's dolphin abundance estimate, and
  - a population sustainability threshold (PST) that can be expressed as an annual maximum number of deaths that can be sustained while still achieving the relevant subpopulation or local population fisheries objective.
94. Regulated limits were proposed for the south coast subpopulation and each of the east coast local populations. A fishing-related mortality limit was not proposed for the north coast South Island subpopulation as there is insufficient information on population size to inform an estimate of the PST that can be expressed as a number of dolphins per year.

### *Tangata whenua and stakeholder views*

95. The fishing industry does not consider there is a need for further measures, however of the options other than status quo, they generally supported the Plan. However, Fisheries Inshore New Zealand did not support the proposed fishing-related mortality limits for Banks Peninsula and Timaru. They consider they should be increased to the respective Population Sustainability Threshold (PST) levels under the 80 percent local population objective.
96. In their written submission, Te Rūnanga o Ngāi Tahu state that the tools used to protect Hector's dolphins should not undermine the rights and interests of Ngāi Tahu under the Fisheries Settlement. However, they consider the Plan will allow for further information and data to ensure effective management of Hector's dolphin bycatch. They support the various voluntary and regulatory components of the Plan and expect significant involvement in its development.
97. Te Ohu Kaimoana considers that the Minister for Oceans and Fisheries' legislative obligations seem to have been met. However, they support a bycatch "response" (in preference to a "reduction") plan to actively improve fishing practices while progressing towards bycatch elimination.
98. Environmental interests, academics, the public and other submitters were split in their views on the Plan. Views included:
  - The Plan is a step in the right direction but insufficient on its own.

- The Plan legitimises or ‘licenses’ fishing-related deaths
- The proposed fishing-related mortality limits are too high (particularly for the Otago area) and that any fishing-related mortality limit should be set at zero.
- The Plan relies too heavily on voluntary measures.
- The Plan should apply to all areas, including the west coast South Island.

### *Considerations and changes proposed post-consultation*

99. Fisheries New Zealand’s recommended mix of regulatory versus voluntary measures within the Plan was chosen based on an assessment of their effectiveness, and legal ability to implement.
100. Use of regulation provides clarity to fishers and stakeholders about government intervention and enables rules to be enforced. In principle, this provides strong incentives for fishers to comply and greater likelihood for the desired fisheries management outcomes to be achieved than when using voluntary measures. However, where flexibility is needed to achieve an outcome (e.g., trialling and adopting effective mitigation measures, and where better outcomes can be achieved where different operators may use mitigation approaches that are tailored to their specific fishing operation and vessel) regulations can be difficult to formulate in a way that provides for sufficient flexibility.
101. We acknowledge the concerns from some stakeholders about the effectiveness of using voluntary measures (primarily due to lack of enforceability), particularly where those measures impose a cost on the fishing operation. Even small changes to fishing practices can threaten the viability of some operators, which may lead them to dismiss voluntary measures. Also, the relatively large number of independent inshore operators and associated governance issues means that a unified voluntary approach has previously been hard to develop and maintain.
102. Protected species risk management plans (PSRMPs) are not proposed for regulation because:
- regulating the requirement to have a PSRMP alone would not achieve the desired outcomes.
  - the Department of Conservation advises that they are getting positive results from the current voluntary framework (which are tracked via audits carried out by Liaison Officers, Fisheries New Zealand observers and compliance staff).
  - most inshore set net and trawl operators in the South Island currently carry PSRMPs voluntarily.
  - strong incentives to minimise captures are created via the proposed regulation of fishing-related mortality limits and the monitoring of fishers under the Plan.
103. The escalating actions in response to a Hector’s bycatch event are recommended to be implemented voluntarily where the risk of exceeding a fishing-related mortality limit is assessed as low. This is because it is unclear whether measures that apply whenever a single Hector’s dolphin is caught would be considered “necessary” under the Fisheries Act. In other words, such an incident may not meet the legislative threshold at which the Minister could act to avoid, remedy, or mitigate the effect of fishing-related mortality on the Hector’s dolphin population.
104. The purpose of the fishing-related mortality limits is to define in regulation environmental bottom lines that give greater certainty that fishing-related dolphin deaths will not exceed the levels necessary to meet the Threat Management Plan fisheries objectives. Regulation via section 15 of the Fisheries Act 1996 provides the opportunity for government to act more quickly than the standard regulatory process to

implement measures to ensure these limits are not exceeded. Combined with monitoring, the regulation of fishing-related mortality limits and associated certainty around government action to prevent them being exceeded, provides strong incentives for fishers to comply with other voluntary aspects of the Bycatch Reduction Plan and take action to avoid captures of Hector's dolphins.

105. Effective operation of the Plan should result in fishing-related mortality limits becoming less relevant over time (i.e., the limits are not approached or exceeded and trigger further measures) as bycatch is further reduced. However, if this is not the case, then the fishing-related mortality limits enable the Minister to act and put in place further regulatory measures to ensure they are not exceeded.
106. Two changes have been made to the Plan following consultation, in response to submitters' points. We now propose:
- implementation of voluntary aspects of the Plan on the west coast South Island, and
  - amendments to the proposed fishing-related mortality limits for some local populations within the east coast South Island.

#### West coast South Island

107. Initially no management options were proposed for the west coast of the South Island Hector's dolphin subpopulation because the estimates of fishing-related deaths from set net and trawl fishing methods are below the levels required to meet the Threat Management Plan fisheries objectives for this subpopulation. However, voluntary measures within the Plan are in scope for this area following consideration of the feedback received during consultation.
108. Fisheries New Zealand agrees with the views of some submitters and the Department of Conservation that there would be benefit in at least applying voluntary aspects of the Plan to the west coast. Although measures are not needed to meet the fisheries objectives, further voluntary efforts should further reduce fishing-related deaths. Proceeding with a regulated fishing-related mortality limit for this area at this time would first require further consultation before it could be implemented, and we do not consider it required at this time.
109. The rollout of the on-board camera programme will allow independent monitoring of interactions between fishing and Hector's dolphins on the west coast. If this shows that there is a fisheries risk that needs to be managed, then the Minister can be advised on potential responses.

#### Fishing-related mortality limits

110. An important component of the Plan is regulating the proposed fishing-related mortality limits. Applying a fishing-related mortality limit to a subpopulation or local population enables the Minister for Oceans and Fisheries to respond more quickly with additional regulatory measures via notice in the Gazette (rather than only via secondary legislation) within the area covered by the limit to ensure it is not exceeded.<sup>11</sup> This includes a scenario where a limit is met.

---

<sup>11</sup> Sections 15(2) and 15(5)(b) of the Fisheries Act.

111. In the event a limit is exceeded the Minister may use other tools available to them under the Fisheries Act to implement additional regulatory measures to avoid, remedy or mitigate the effect of that fishing-related mortality.<sup>12</sup>
112. This approach provides the following benefits:
- Translates the Threat Management Plan fisheries objectives into clear fishing-related mortality limits.
  - Provides a high level of certainty that the fisheries objectives will be achieved, as a minimum, and when government intervention will occur following Hector’s dolphin bycatch.
  - Incentivises industry, through the use of fishing-related mortality limits, to innovate and collectively take voluntary measures to avoid Hector’s dolphin bycatch.
  - Minimises long-term impacts on the use of fisheries resources because further regulatory measures are only likely to be employed to target areas or periods when they are needed to ensure fishing-related mortality limits are not exceeded.
113. We recommend setting the fishing-related mortality limits so that they apply to both commercial and recreational fishers to manage the risk from both sectors. The fishing-related mortality limits would not apply to customary fishing. Customary fishing rights are part of the settlement of Māori claims to fisheries resources. These rights provide for tangata whenua to autonomously manage their customary non-commercial fishing activities within their customary fishing area (rohe moana), and to enable customary fishing and management traditions to continue.
114. Proposed fishing-related mortality limits under the Plan are informed by the estimated PSTs<sup>13</sup> for each subpopulation and local population. They are precautionary and intended to help meet the Threat Management Plan fisheries objectives, but the Minister for Oceans and Fisheries can exercise reasonable discretion to consider other numbers. The limits provide high certainty that the Threat Management Plan fisheries objectives will be achieved, as a minimum, but are not targets. Fishing-related mortality

---

limits can be reviewed and adjusted if new information becomes available on the estimated PSTs.

115. In the following table, note that Fisheries New Zealand consulted on the fishing-related mortality limits proposed under **Option A**. In response to submissions, alternative fishing-related mortality limits were considered for the east coast local populations (**Option B**).

**Table 4 Fishing-related mortality limit options for each subpopulation or local population relative to the estimated population sustainability threshold (PST).**

Sub or local population	Estimate of annual fishing-related deaths (rounded)	Population Sustainability Threshold (rounded) to achieve:		Fishing-related mortality limit (dolphins per year)	
		For subpopulations: 90% unimpacted status	For local populations: 80% unimpacted status	Option A	Option B

<sup>12</sup> Sections 15(2) and 15(4) of the Fisheries Act.

<sup>13</sup> Population Sustainability Threshold refer para 14.

<b>East Coast</b>	17 (7 – 33.7)	46	-	N/A	N/A
<b>Cloudy Clifford</b>	0.5 (0.2 – 0.9)	-	5	5	5
<b>Kaikōura</b>	7.5 (4 – 12.7)	-	7.6	7	7
<b>Banks Peninsula</b>	2 (0.6 – 5)	-	45	18	20
<b>Timaru</b>	5 (1.5 – 11)	-	27	10	12
<b>Otago</b>	2 (0.9 - 4)	-	6	6	2
<b>South Coast</b>	0.9 (0.3 – 2)	1.6	-	3 dolphins every two years	3 dolphins every two years

116. The proposed local area fishing-related mortality limits (under Options A and B) within the east coast subpopulation are allocated from the PST for the subpopulation (46) based on the relative size of each local area population.
117. We acknowledge submitters' concerns that they consider the estimate for the Otago local population size, which informed our estimate of the PST, is overestimated. Submitters suggested the overall population may be less than 100 or no more than 200. They consider that the PST and proposed fishing-related mortality limit we consulted on (Option A) would put the local population at risk of decline if it were reached. Option B represents an alternative approach to address this concern.
118. Under Option B, we give greater weighting to population size estimates from survey data in the Otago region and expert views rather than the risk assessment model estimate, which means our estimated PST is revised. Reducing the estimated population size from 638 to 200 results in a proportional reduction in the proposed fishing-related mortality limit from 6 dolphins per year to 2. We note that there remains uncertainty in this revised estimate.
119. The difference of four dolphins from the change above is proposed to be allocated equitably to the Banks Peninsula and Timaru populations (this is to retain the sum of all local population limits at 46 dolphins per year - refer **Table 4**). However, the Minister for Oceans and Fisheries has discretion on whether or how any reallocation should be applied.
120. Under both options, the proposed fishing-related mortality limits in Banks Peninsula and Timaru remain less than half of the PST. However, the larger numbers under Option B for these areas were not consulted on, and we note some stakeholder concerns about the size of fishing-related mortality limits in general.

### Option 3a - Trawl gear restrictions

121. Regulations that restrict commercial trawl nets to a low headline height (of 1 metre) are in place along the east and south coasts of the South Island within two nautical miles of shore. Low tow speeds ( $\leq 2.5$  knots) are not regulated but often correspond with vessels that use low headline height trawl nets.
122. Anecdotal information, supported by available data on trawl-related Hector's dolphin bycatch events, suggests that these types of trawl gear restrictions reduce the chance

of Hector's dolphins being captured in a trawl net. However, there is a lack of robust scientific information to verify this claim.

123. It is also uncertain whether further restricting the use of certain trawl gear (refer to **Figure 4** and areas for expansion of restriction) will meet the Threat Management Plan fisheries objectives, and therefore the Minister for Oceans and Fisheries obligations under section 15(2) of the Fisheries Act.
124. Regulating further trawl gear restrictions would result in costs to some fishers to modify their trawl nets and due to the consequent reduced efficiency to catch certain species. However, the impact of trawl gear restrictions on fish catch is difficult to estimate as the effectiveness and efficiency of the trawl gear will vary across the fish species targeted or caught. It may have an allocative effect - expansion of the restrictions may have little impact on smaller, lower powered vessel owners that may already use low headline height and tow at lower speeds versus larger vessel owners that primarily operate with a higher headline height and tow at faster speeds.
125. This option provides no incentive or framework to support fishers to further reduce Hector's dolphin bycatch. It also does not consider the potential displacement of trawl effort (to areas that do not require these restrictions) to other areas where Hector's dolphins are found and gives less certainty to stakeholders about when or if further Government intervention might occur.

#### *Tangata whenua and stakeholder views*

126. Most environmental interests, academics, and the public oppose trawl gear restrictions (low headline height trawl nets and/or low trawl speed) due to the lack of scientific evidence that the measures would be effective.
127. Fishers that already use low headline height trawl nets and low trawl speeds support the measures. Other fishers and industry representative organisations oppose them due to the potential socioeconomic impacts, concern over enforceability, and uncertainty in their effectiveness to avoid Hector's dolphin bycatch.

#### **Option 3b - Trawl fishing closures**

128. Prohibiting the use of trawl gear in the east and south coasts of the South Island (refer **Figure 5**) would meet the Threat Management Plan fisheries objectives, and therefore the Minister's obligations under section 15(2) of the Fisheries Act. It is uncertain whether the closure proposed for the north coast subpopulation would reduce risk sufficiently to achieve the Threat Management Plan fisheries objectives.
129. Method prohibition is the most certain way of preventing Hector's dolphin bycatch where it is applied. It removes overlap between the dolphins and the fishing activity that poses a risk. It does not reduce risk in other areas where the method may be used, and dolphins are present. Prohibitions also do not incentivise fishers to modify their practices.
130. Trawl fishing closures can have a large impact on the use of fisheries resources relative to other options, depending on the value of trawl fisheries in the area. We estimate the closures would come at a significant cost to fishers and the local community on the east, north, and south coasts.



131. The potential economic impacts were calculated assuming that all trawling that is estimated to have occurred in this area will no longer take place. This is likely an over estimation as some of this trawl effort may move beyond the closure area.
- For the east coast South Island there is an estimated annual revenue loss of \$6.09 million and that approximately 9(2)(b)(ii) trawl fishers would have more than 9(2)(b)(ii) of their annual landings affected by the closure.
  - For the south coast South Island there is an estimated annual revenue loss of \$1.57 million and approximately 9(2)(b)(ii) trawl fishers that would have more than 9(2)(b)(ii) of their annual landings affected by the closure.
  - For the north coast South Island there is an estimated annual revenue loss of approximately \$4K.
132. The uncertainty in our estimates of the effectiveness of the trawl closure for the north coast subpopulation comes from our estimate of Hector's dolphin distribution and its overlap with fishing activity in this area. It is likely that the risk assessment model underestimates the proportion of Hector's dolphins that occur closer inshore where the trawl closures would apply, which underestimates our effectiveness of them (as well as the effectiveness of the set net closures implemented in 2020).
133. In the absence of better information on Hector's dolphin distribution (for which research is underway), significantly larger closures would be required to fully address this uncertainty. Closures to that extent would have a significant impact on use. We do not consider this impact is justified given the work underway to improve our estimates of fisheries risk and the lower likelihood of bycatch from trawl relative to set net more generally.
134. Overall, we consider the proposed trawl closures to be a blunt tool that will reduce risk more than necessary and result in greater socioeconomic impacts than needed to achieve the Threat Management Plan fisheries objectives.

#### *Tangata whenua and stakeholder views*

135. The fishing industry strongly oppose trawl closures given the estimated impact on fishers' livelihoods and expected loss of millions of dollars of assets and future revenue. Individual trawl owners and small commercial fishing operations also emphasised the acute economic loss they would suffer.
136. Ngāi Tahu Seafoods have potentially nine Ngāi Tahu whānau trawl fishers affected by the proposed measures. Te Rūnanga o Ngāi Tahu consider that over time these whānau would have their businesses seriously disrupted by the proposed trawl closure areas and are also concerned about the potential displacement of fishing effort into other grounds that may not sustain a greater level of effort. They note that it is critical that decisions on measures to protect Hector's dolphin do not impinge or dilute the rights of Ngāi Tahu whānui as guaranteed under the fisheries Treaty Settlement.
137. Te Ohu Kaimoana consider more finely targeted approaches are better used to manage fisheries risk to Hector's dolphins than spatial exclusion zones.
138. Te Waka a Māui consider the social and economic impacts of proposals have been underestimated, particularly the impacts on whānau fishers and the communities they reside in. They consider that iwi would likely incur significant losses from the sale of annual catch entitlement (ACE), and the value from sale of fish and processing.

139. While trawl closures do not apply to customary fishing, customary fishing is undertaken using commercial fishing vessels in some areas. In addition, many commercial fishers are the holders of mātauranga Māori and the tikanga of fishing for their hapū. Te Waka a Māui considers that measures that would lead to the removal of commercial fishers from the community will have an impact on the exercise of customary fishing rights and the Treaty rights that have been guaranteed in the 1992 Fisheries Deed of Settlement.
140. Most environmental NGOs, academics, and the public submissions support the trawl closures. Many environmental interests consider that the costs of trawl closures are overstated, and the benefits understated.

#### **Option 4 – Commercial and recreational set net fishing closure – Banks Peninsula**

141. This option is intended to meet the Threat Management Plan fisheries objectives (and Minister for Oceans and Fisheries obligations under section 15(2) of the Fisheries Act) through implementation of regulatory measures that prohibit commercial and recreational set net fishing offshore around Banks Peninsula (refer to **Figure 6**).
142. The estimated risk reduction achieved from the most recent set net closures in 2020 north and south of Banks Peninsula is significant, and we estimate the fisheries objectives for the local populations of Banks Peninsula and Timaru have been met.
143. There were concerns expressed by submitters that the 2020 closures would result in a displacement of set net effort to other areas offshore of Banks Peninsula where Hector's dolphin are also found, thereby moving the risk of set-net related deaths rather than reducing it. Historically, we have seen fishing effort shift at times, which has had negative impacts on the levels of risk reductions we have tried to achieve.
144. In the 2020-21 October fishing year set net effort increased in comparison to the effort over the previous four complete fishing years. However, it is too early to conclude the overall impact on our estimates of risk reduction in the long-term. The overall level of displacement of set net effort at this stage is relatively low, with few set-net events so far in the October 2021 fishing year, as of April 2022 when advice was provided to the Minister for Oceans and Fisheries.
145. We consider there is benefit in ensuring the risk reductions that have been achieved in these two local populations are maintained, and that on balance the added protection is appropriate given the impact on use is estimated to be low.

#### *Tangata whenua and stakeholder views*

146. The fishing industry and Te Rūnanga o Ngāi Tahu oppose the set net extension because they consider there is no evidence of an increase in risk sufficient to warrant regulatory intervention. Te Rūnanga o Ngāi Tahu encourage a proper assessment of the effectiveness of the current measures before implementing further set net closures.
147. Most environmental interests, academics, the public, tourism operators, recreational fishers, Environment Canterbury, and community boards support the closure.

### **2.5 How do the options compare to the counterfactual within each Hector's dolphin subpopulation?**

148. There are differences in the level of impact and estimated effectiveness of the options within each of the Hector's dolphin subpopulation areas. A comparison of the options to the counterfactual within each subpopulation, using the criteria set out in Section 2.1, is summarised below.

Proactive Release

East coast South Island subpopulation

Criteria	Option 1 Status quo/ counterfactual	Option 2 Bycatch Reduction Plan with fishing-related mortality limits	Option 3a Trawl gear restrictions <sup>14</sup>	Option 3b Trawl closures <sup>15</sup>	Option 4 Set net closure
Relevant local population	All	All	Banks Peninsula and Timaru	Banks Peninsula and Timaru	Banks Peninsula
Criterion 1: Does the option effectively reduce the fisheries risk to a level that enables the subpopulation to recover to a size that is no more than 10 percent lower than what it would be if there was no fisheries impact?	<b>0</b> The subpopulation fisheries objective is estimated to be met.	<b>+</b> The subpopulation fisheries objective is estimated to be met under the status quo. Further controls would not be implemented under the Bycatch Reduction Plan unless needed to maintain this criterion.	<b>+</b> The subpopulation fisheries objective is <b>estimated to be met under the status quo.</b>  Trawl gear restrictions (low headline height +/- slow tow speed) would reduce fishing risk further but are more than is necessary to achieve criterion.	<b>+</b> The subpopulation fisheries objective is <b>estimated to be met under the status quo.</b>  Measures would reduce fishing risk further but are more than is necessary to achieve criterion.	<b>+</b> The subpopulation fisheries objective is <b>estimated to be met under the status quo.</b> Measures are more than is necessary to achieve criterion. But this option will ensure set net effort (and associated fisheries risk) is not displaced into this area, so not to undermine the achieved fisheries objective.
Criterion 2: Does the option prevent or avoid localised depletion?	<b>0</b> Does not address the excess fisheries risk in Kaikōura.	<b>+</b> This option applies across all local populations and provides a more responsive mechanism to local depletion risks as they arise. Enables fisheries risk to be targeted if/when required to ensure the local population objectives are met.	<b>+/-</b> This option would apply only to Banks Peninsula and Timaru, where the local population fisheries objective is estimated to already be met. Does not account for or provide a mechanism to prevent depletion within Kaikōura or other local population areas.	<b>+/-</b> This option would apply only to Banks Peninsula and Timaru, where the local population fisheries objective is estimated to already be met. Does not account for or provide a mechanism to prevent depletion within Kaikōura or other local population areas.	<b>+/-</b> Likely – This option will ensure set net effort (and associated fisheries risk) is not displaced into this area, so that it doesn't undermine the local population fisheries objective we estimate achieved. Does not account for or provide a mechanism to prevent depletion within Kaikōura or other local pop. areas.
Criterion 3: Is the option responsive to changes in fisheries risk (spatial and temporal)?	<b>0</b> Relies on reactive response and standard processes.	<b>+</b> Considers fisheries risk across each local population area with escalating responses to ensure fishing-related mortality limits are not exceeded.	<b>-</b> Does not address potential trawl effort displacement <sup>16</sup> and changes in fisheries risk post-implementation.	<b>-</b> Does not address potential trawl effort displacement and changes in fisheries risk post-implementation.	<b>+/-</b> Prevents displaced set net effort from 2020 set net closures transferring into this area.
Criterion 4: Does the option encourage industry to shift to better fishing practices to avoid dolphin captures?	<b>0</b> Does not create incentive to change.	<b>+</b> Includes collaboration and escalating responses to encourage industry to avoid dolphin captures, along with on-board cameras and FRMLs.	<b>+/-</b> Fishers may or may not feel incentivised to adjust their trawl gear use more broadly. Set net fishers are not incentivised to shift to better practices.	<b>-</b> Fishers may feel pushed to use other methods to keep fishing in the area, but not incentivised to avoid dolphin captures more generally.	<b>-</b> Fishers may feel pushed to use other methods to keep fishing in the area, but not incentivised to avoid dolphin captures more generally.
Criterion 5: Does the option allow fishers to choose the most effective mitigation measure(s) for their operation?	<b>0</b> Does not prescribe how fishers should avoid or mitigate bycatch outside of existing closed areas (e.g., to set nets) and trawl gear restrictions.	<b>+</b> Does not prescribe how fishers should avoid or mitigate bycatch but the escalating area and vessel-based responses are designed to incentivise fishers to reduce fishing-related mortality toward zero over time.	<b>-</b> Regulates the use of trawl gear restrictions in the defined areas and does not allow fishers to choose a mitigation measure for their operation in this area.	<b>-</b> Regulates trawl fishing closures in the defined areas and does not allow fishers to choose a mitigation measure for their operation in this area.	<b>-</b> Regulates set net fishing closures in the defined area and does not allow fishers to choose a mitigation measure for their operation in this area.
Criterion 6: Does the option minimise the impact (including cost) on fishers to the extent possible?	<b>0</b> Yes – but may not in the future.	<b>+/-</b> Uncertain – will depend on the levels of footage review required in those local population areas where a fishing-related mortality limit is small, and the extent of the voluntary measures needed to ensure fishers remain within the FRML.	<b>+/-</b> Partial – Depends on a fishers' ability and need to adopt the measures. Approximately 40-60% of estimated effort in the defined areas would have to adapt or shift elsewhere.	<b>-</b> Closures will have significant impact on use and go further than necessary to achieve criteria 1 and 2.	<b>+</b> Closure will have a small impact, relative to the expected benefits achieved under criteria 2 and 3 for this local population.
<b>Total Annual Revenue Lost</b>			\$1.79M	\$6.09M	9(2)(b)(ii)

<sup>14</sup> The economic impact estimates for trawl gear restrictions use average estimated catch data (from the 2017-18 to 2019-20 fishing years) and port price estimates for species caught to estimate revenue from the proposed areas. Electronic reporting fishing start and end positions are used where available to determine catch in the proposed area. Where there was a discrepancy between electronic reporting and geospatial position reporting (GPR) data, GPR data is used.

<sup>15</sup> The estimated economic impact of trawl closures have been carried over from the [2019 Technical Advice paper](#). These estimates were based on 10-year average catch data (2007-2017) and revenue-based export price estimates for species caught to estimate revenue from the affected areas.

<sup>16</sup> Refers to when management measures such as area closures for a particular method result in fishers adjusting their operations (effort) to fish using that method in the remaining open areas.

<b>Total Economic Impact – 1 Year</b>	Option 1 has no added costs for fishers. Costs associated with the onboard camera programme (which sit outside of this consultation) are yet to be finalised.	Unknown - Costs will be informed by associated costs of the rollout of on-board cameras (e.g., levels of footage review) and dependent on fishers' individual actions to avoid bycatch, the liaison programme, and whether fishing-related mortality limits are approached or exceeded resulting in further voluntary or regulatory measures on fishers.	\$5.06M	\$17.16M	9(2)(b)(ii)
<b>Total Economic Impact – 3 Year</b>			\$8.58M - \$13.96M	\$29.51M - \$48.63M	9(2)(b)(ii)
<b>Total Economic Impact – 5 Year</b>			\$9.22M - \$21.46M	\$31.89M - \$76.63M	9(2)(b)(ii)
<b>Overall assessment</b>	Not preferred	<b>Preferred</b>	Not preferred	Not preferred	<b>Preferred</b>

**Key:** Better than the counterfactual +, Partially Met /Uncertain +/-, Worse than the counterfactual -

Proactive Release

*East coast South Island subpopulation: What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?*

149. In considering the views of tangata whenua, the submissions received and our assessment of the options against the status quo, our preferred options for the east coast South Island are the Bycatch Reduction Plan (Option 2) and further set net closure in Banks Peninsula (Option 4).
150. The Bycatch Reduction Plan (the Plan) seeks to better protect the subpopulation and local populations while incentivising and supporting fishers to avoid dolphin captures. The rollout of on-board cameras enables verification of interactions and the setting of fishing-related mortality limits for each of the five local populations, is a regulatory mechanism that allows the Minister for Oceans and Fisheries to respond with further measures more quickly, if necessary, should fishing-related deaths reach levels that would put achieving the Threat Management Plan fisheries objectives at risk. Below this level the escalating area and vessel-based responses are designed to incentivise fishers to reduce fishing-related mortality toward zero over time.
151. The economic impact of the Plan on the fishing industry is difficult to estimate as it depends on a fisher's need and ability to adapt, the likelihood a fishing-related mortality limit may be reached or exceeded, and the costs of the on-board camera programme. The fishing industry may incur costs from:
- **Avoiding Hector's dolphin bycatch:** Industry may incur costs if they change their gear, buy and use mitigation tools, invest in research, or shift to fish in areas where the risk of interaction with Hector's dolphins is lower. Such costs are difficult to estimate and depend on an individual vessel's operation and their risk of bycatch.
  - **Monitoring:** There will be costs associated with the use of on-board cameras, particularly the levels of footage review that may be required in a local population area to incentivise fisher reporting as well as verify reported captures.
  - **Liaison Programme:** The DOC Protected Species Liaison Programme supports development of protected species risk management plans and is cost-recovered from the fishing industry. That programme covers a range of fleets nationally and applies to a range of protected species. Its expansion may need further funding through cost recovery if our estimates of the likelihood of Hector's dolphin bycatch is significantly underestimated.
152. Fishers' ability to adapt is more flexible under Option 2 compared to Option 3a (trawl gear restrictions), 3b (trawl closures), or 4 (set net closure), because they can choose how to best avoid Hector's dolphin interactions under the voluntary escalating responses rather than have it prescribed.
153. The associated monitoring costs of footage review under this option may be greater than the estimated impact of Option 1, trawl gear restrictions (Option 3a) and set net closure (Option 4), but less than trawl closures (Option 3b). This is due to the levels of monitoring that would be required in each local population to support verification of bycatch reporting.
154. The further commercial and recreational set net fishing closures around Banks Peninsula (Option 4) will prevent any potential displacement of set net effort around Banks Peninsula to ensure the expected reductions in set net-related deaths from the 2020 measures are maintained. We consider there is benefit in ensuring the risk

reductions that have been achieved in these two local populations are maintained, and that on balance the added protection is appropriate given the impact on use and annual revenue is estimated to be low.

Proactive Release

South coast South Island subpopulation

Criteria	Option 1 Status quo/counterfactual	Option 2 Bycatch Reduction Plan with a fishing-related mortality limit	Option 3a Trawl gear restrictions <sup>17</sup>	Option 3b Trawl closures <sup>18</sup>
Criterion 1: Does the option effectively reduce the fisheries risk to a level that enables the subpopulation to recover to a size that is no more than 10 percent lower than what it would be if there was no fisheries impact?	0 The subpopulation fisheries objective will not be met.	+	+/-	+
Criterion 2: Does the option prevent or avoid localised depletion?	0 Does not prevent or provide mechanisms to avoid the concentration of fisheries risk in any localised area.	+	+/-	+/-
Criterion 3: Is the option responsive to changes in fisheries risk (spatial and temporal)?	0 Relies on reactive response and standard processes.	+	-	-
Criterion 4: Does the option encourage industry to shift to better fishing practices to avoid dolphin captures?	0 Does not create incentive to change	+	+/-	+/-
Criterion 5: Does the option allow fishers to choose the most effective mitigation measure(s) for their operation?	0 Does not prescribe how fishers should avoid or mitigate bycatch outside of existing closed areas (e.g., to set nets) and trawl gear restrictions.	+	-	-
Criterion 6: Does the option minimise the impact (including cost) on fishers to the extent possible?	0 Yes – but may not in the future	+	+/-	-
<b>Total Annual Revenue Lost</b>	Option 1 has no added costs for fishers. Costs associated with the onboard camera programme (which sit outside of this consultation) are yet to be finalised.	Unknown - Costs will be informed by decisions and associated costs of the rollout of on-board cameras (e.g., levels of footage review) but will also be dependent on fishers' individual actions to avoid bycatch, the liaison programme, and whether the fishing-related mortality limit is approached or exceeded resulting in further voluntary or regulatory measures on fishers.	\$0.17M	\$1.57M
<b>Total Economic Impact – 1 Year</b>			\$0.47M	\$4.42M
<b>Total Economic Impact – 3 Year</b>			\$0.80M - \$1.31M	\$7.59M - \$12.51M
<b>Total Economic Impact – 5 Year</b>			\$0.86M - \$2.01M	\$8.21M - \$19.72M
<b>Overall Assessment</b>	Not preferred	Preferred	Not preferred	Not preferred

**Key:** Better than the counterfactual +, Partially Met/Uncertain +/-, Worse than the counterfactual -

<sup>17</sup> The economic impact estimates for trawl gear restrictions use average estimated catch data (from the 2017-18 to 2019-20 fishing years) and port price estimates for species caught to estimate revenue from the proposed areas. Electronic reporting fishing start and end positions are used where available to determine catch in the proposed area. Where there was a discrepancy between electronic catch and geospatial position reporting (GPR) data, GPR data is used.

<sup>18</sup> The economic impact of trawl closures have been carried over from the [2019 Technical Advice paper](#). These estimates were based on 10-year average catch data (2007-2017) and revenue-based export price estimates for species caught to estimate revenue from the affected areas.



---

Proactive Release

*South coast South Island subpopulation: What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?*

155. In considering the views of tangata whenua, the submissions received and our assessment of the options against the status quo, our preferred option for the south coast South Island is the Bycatch Reduction Plan (Option 2).
156. The Plan creates an immediate incentive and framework to support commercial fishers to reduce fisheries risk to Hector's dolphins across the entire subpopulation. It provides a more defined means of setting out, in advance, steps that would follow if a fisher caught a Hector's dolphin(s) to help avoid further captures. It provides clarity to tangata whenua, industry, and the public on when government may intervene.
157. The Bycatch Reduction Plan seeks to better protect the subpopulation while incentivising and supporting fishers to avoid dolphin captures. The rollout of on-board cameras enables verification of interactions and the setting of fishing-related mortality limit for the south coast population is a regulatory mechanism that allows the Minister for Oceans and Fisheries to respond more quickly, if necessary, should fishing-related deaths reach levels that would put achieving the Threat Management Plan fisheries objectives at risk. Below this level the escalating area and vessel-based responses are designed to incentivise fishers to reduce fishing-related mortality toward zero over time.
158. The socioeconomic impact of the Bycatch Reduction Plan on the fishing industry is difficult to estimate (as described above in para 140) as it depends on a fisher's need and ability to adapt, the likelihood a fishing-related mortality limit may be reached or exceeded, and the costs of the on-board camera programme.
159. The low fishing-related mortality limit (3 Hector's dolphins every two years) may disincentivise fishers from reporting if the interaction may result in a fishing method(s) being closed in an area for a period. The proposed fishing-related mortality limit could be exceeded following a single bycatch event. To offset that risk, it will be important to have a high level of footage review and target the footage review to maximise the likelihood of detection, while also considering any associated costs on fishers.
160. Notwithstanding this risk, Fisheries New Zealand considers the overall benefits of the Plan remains. Fishers can continue to fish, taking all available steps to avoid any capture, while a regulatory backstop is in place to enable the Minister for Oceans and Fisheries to respond quickly in the event the fishing-related mortality limit may be met or exceeded.
161. Fishers' ability to adapt is more flexible under this Option 2 compared to Option 3a (trawl gear restrictions) or 3b (trawl closures) because they can choose how best to avoid Hector's dolphin interactions under the voluntary escalating responses rather than have it prescribed. However, given the high level of use of low headline height trawl nets in the south coast area (see Option 3a below), if trawl gear restrictions are effective then the ease (and cost) with which fishers can adapt their practices may be low.
162. The associated monitoring costs of footage review under this Option 2 are unknown but may be greater than the estimated impact of Option 1 and trawl gear restrictions (Option 3a), but less than trawl closures (Option 3b). This is due to the high level of monitoring that would be required to support verification of bycatch reporting,

compared to monitoring a complete ban of using trawl nets in the same area; which can be done through global position reporting.

Proactive Release

North coast South Island subpopulation

Criteria	Option 1 Status quo/counterfactual	Option 2 Bycatch Reduction Plan, without a fishing-related mortality limit	Option 3a Trawl gear restrictions <sup>19</sup>	Option 3b Trawl closures <sup>20</sup>
Criterion 1: Does the option effectively reduce the fisheries risk to a level that enables the subpopulation to recover to a size that is no more than 10 percent lower than what it would be if there was no fisheries impact?	0 The subpopulation fisheries objective will not be met.	+	+/- We estimate the fisheries objective would not be met under this option. There is uncertainty in the level of risk reduction achieved from trawl gear restrictions and uncertainty in Hector's dolphin distribution (the proportion of Hector's dolphins that occur in this area and would be protected) to give sufficient confidence that this measure would be effective.	+/- We estimate the fisheries objective would not be met under this option. There is uncertainty in Hector's dolphin distribution (the proportion of Hector's dolphins that occur in this area and would be protected) to give sufficient confidence that this measure would be effective.
Criterion 2: Does the option prevent or avoid localised depletion?	0 Does not prevent or provide mechanisms to avoid the concentration of fisheries risk in any localised area.	+	+/- Uncertain – Dependent on whether trawl effort displacement pushes trawl gear effort into other areas where Hector's dolphins are present. However, the overall level of effort that may be displaced is small and may not have much effect on fisheries risk in any localised area.	+/- Uncertain - Dependent on whether trawl effort displacement pushes trawl effort into other areas that remain open where Hector's dolphins are present. However, the overall level of effort that may be displaced is small and may not have much effect on fisheries risk in any localised area.
Criterion 3: Is the option responsive to changes in fisheries risk (spatial and temporal)?	0 Relies on reactive response and standard processes.	+	- Does not address potential trawl effort displacement and changes in fisheries risk post-implementation.	- Does not address potential trawl effort displacement and changes in fisheries risk post-implementation.
Criterion 4: Does the option encourage industry to shift to better fishing practices to avoid dolphin captures?	0 Does not create incentive to change.	+	- Little trawl effort occurring in the proposed trawl restrictions area. Fishers may or may not feel incentivised to adjust their trawl gear use more broadly but are more likely to retain current trawl practices outside the restricted area. Fishers are not incentivised to avoid dolphin captures more generally.	- Little trawl effort occurring in the proposed trawl closure area. Fishers may feel pushed to use other methods to keep fishing in the area but are more likely to transfer their effort elsewhere. Fishers are not incentivised to avoid dolphin captures more generally.
Criterion 5: Does the option allow fishers to choose the most effective mitigation measure(s) for their operation?	0 Does not prescribe how fishers should avoid or mitigate bycatch outside of existing closed areas.	+	- Regulates the use of trawl gear restrictions in the defined areas and does not allow fishers to choose a mitigation measure for their operation in this area.	- Regulates trawl closures in the defined areas and does not allow fishers to choose a mitigation measure for their operation in this area.
Criterion 6: Does the option minimise the impact (including cost) on fishers to the extent possible?	0 Yes – but may not in the future.	+	+/- Partial –there is low trawl effort in this area overall, so the costs of this option are small. Some trawl effort could continue to occur in the area if fishers adapted their gear.	- Option does not minimise overall impact.
<b>Total Annual Revenue Lost</b>			\$4,079	\$4,079
<b>Total Economic Impact – 1 Year</b>	Option 1 has no added costs for fishers. Costs associated with the on-board camera programme (which sit outside of this consultation) are yet to be finalised.	Unknown – Costs will be informed by decisions and associated costs of the rollout of on-board cameras (e.g., levels of footage review) but will also be dependent on fishers' individual actions to avoid bycatch and the liaison programme.	\$11,502	\$11,502
<b>Total Economic Impact – 3 Year</b>			\$19,497 - \$31,736	\$19,497 - \$31,736
<b>Total Economic Impact – 5 Year</b>			\$20,947 - \$48,766	\$20,947 - \$48,766
<b>Overall assessment</b>			Not preferred	Preferred

Key: Better than the counterfactual +, Partially Met /Uncertain +/-, Worse than the counterfactual -

<sup>19</sup> The economic impact estimates for trawl gear restrictions use average estimated catch data (from the 2017-18 to 2019-20 fishing years) and port price estimates for species caught to estimate revenue from the proposed areas. Electronic reporting fishing start and end positions are used where available to determine catch in the proposed area. Where there was a discrepancy between electronic reporting and global positioning reporting (GPR) data, GPR data is used.

<sup>20</sup> The economic impact estimates for trawl closures use the same information and approach as done for trawl gear restrictions (Option 3a). Because all trawl effort would potentially be removed under Option 3a, the economic impact is equivalent to that of a closure.

\*Assumes that all fishers have PSRMPs in place that they comply with and any voluntary measures are effective. Government may also choose to act and regulate further dependent on the levels of bycatch observed. However, in the absence of an estimated maximum number of annual Hector's dolphin deaths that can occur while still achieving the Threat Management Plan fisheries objectives, there is some uncertainty.

---

Proactive Release

*North coast South Island subpopulation: What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?*

163. In considering the views of tangata whenua, the submissions received and our assessment of the options against the status quo, our preferred option for the north coast South Island is the Bycatch Reduction Plan (Option 2) without a fishing-related mortality limit.
164. The Plan creates a framework to support fishers to reduce fisheries risk to Hector's dolphins across the entire subpopulation. We consider the Plan will achieve the Threat Management Plan fisheries objectives while minimising the impact on use of the fisheries. The Plan provides a more defined means of setting out, in advance, steps that would follow if a fisher caught a Hector's dolphin(s) to help avoid further captures. It provides greater clarity to tangata whenua, industry, and the public on how government will work with fishers via the vessel-based escalating response.
165. The Plan provides an incentive to avoid bycatch through increased monitoring, and verification and regular public reporting of any bycatch, irrespective of the use of a fishing-related mortality limit. The absence of a fishing-related mortality limit lessens the certainty of when further action may occur, relative to capture events, but Government may choose to act and regulate further at any time, dependent on the levels of bycatch observed.
166. The socioeconomic impact of the Bycatch Reduction Plan on the fishing industry is difficult to estimate (as described above in para 145) as it depends on a fisher's need and ability to adapt, and the potential costs of the on-board camera programme. Fishers' ability to adapt is more flexible under Option 2 than Option 3a (trawl gear restrictions) or 3b (trawl closures), because how they choose to best avoid Hector's dolphin interactions is up to them rather than prescribed. However, the low level of trawl effort in the proposal areas under Option 3a and 3b means for much of their fishing area (which occurs outside the proposal areas) fishers can employ mitigation measures they consider best fit their operation.
167. The associated monitoring costs of footage review under this option are unknown but are likely greater than the estimated impact of Option 1, trawl gear restrictions (Option 3a), and trawl closures (Option 3b). This is because of the broader scale of monitoring that would be required in the subpopulation across set net and trawl vessels to support verification of bycatch reporting.
168. We are not recommending setting a fishing-related mortality limit for the north coast subpopulation currently. There is insufficient information on population size in this area to meaningfully estimate an annual maximum level of dolphin deaths. This can be revised in future when more information from research and monitoring becomes available.
169. The need for further measures will be considered, should fishing-related deaths occur from trawl or any other method across the north coast subpopulation. Any fishing-related death would trigger a response from Fisheries New Zealand, which will include advising the Minister for Oceans and Fisheries on options to address the risk. If the Minister considers it necessary to respond with further regulatory measures, action can be taken using powers under a different section (section 11) of the Fisheries Act.

*West coast South Island subpopulation: What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?*

170. The Bycatch Reduction Plan was not proposed to apply on the west coast South Island because the current level of estimated fishing-related deaths is low enough to achieve the subpopulation Threat Management Plan fisheries objective. The area will also not have on-board cameras introduced until much later than the other South Island subpopulations (in 2024) a key aspect to support verification of reported bycatch under the Bycatch Reduction Plan.
171. Fisheries New Zealand considers there would be benefit in at least applying voluntary aspects of the Bycatch Reduction Plan to the west coast. Although current risk assessment indicates that measures are not needed to meet the fisheries objectives, further voluntary efforts could help minimise fishing-related deaths.
172. The absence of a fishing-related mortality limit does not prevent further measures from being taken under section 11 or section 15(2) of the Fisheries Act if the Minister considers it necessary to respond to fishing-related deaths.

Proactive Release

## 2.6 What are the marginal costs and benefits of the preferred options?

Affected groups	Comment <i>nature of cost or benefit (e.g., ongoing, one-off), evidence and assumption (e.g., compliance rates), risks.</i>	Impact <i>\$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts.</i>	Evidence <b>Certainty</b> <i>High, medium, or low, and explain reasoning in comment column.</i>
<b>Additional costs of the preferred options compared to taking no action</b>			
Commercial fishers and Licensed Fish Receivers (regulated party)	Annual revenue loss from set net closure off Banks Peninsula.  Potential future costs if high bycatch of Hector's dolphins against a fishing-related mortality limit triggers regulatory and potentially voluntary action.	9(2)(b)(ii) [redacted]  Not able to be determined until regulatory measures decided	Medium  High
Recreational fishing sector (regulated party)	Potential loss of set net fishing areas off Banks Peninsula but given distance offshore this is unlikely.	Non-monetised, low	High
Fisheries New Zealand (regulators)	Operation of the Plan may be more resource intensive (at least in the initial stages) to Fisheries New Zealand as we work with tangata whenua and the industry to implement the Plan and undertake oversight of adherence to and performance of voluntary measures.	Will meet resource costs out of baseline funding, low	Medium
Wider government	Total additional fiscal costs to the Government (shared between Fisheries New Zealand and the Department of Conservation) in updating the science, Hector's dolphin population and bycatch monitoring, implementing, and operationalising the Bycatch Reduction Plan, and assessing progress against the fisheries objectives.	Medium	Medium
Customary fishers (non-regulated party)	Pātaka <sup>21</sup> arrangements for iwi that are held by the local fishers/LFRs may be unviable if they are unable to continue to operate in the event of controls put in place following a fishing-related mortality limit being triggered.	Non-monetised, low	High
Wider economy	Considers the direct and indirect impacts of the direct losses to commercial fishers on the wider economy (Total Economic Impact)	9(2)(b)(ii) [redacted] million over 5 years	Medium
<b>Total monetised costs</b>		9(2)(b)(ii) [redacted] million over 5 years	

<sup>21</sup> Fish taken for customary purposes by a commercial fishing operation.



<b>Non-monetised costs</b>		Low/Medium	Medium
<b>Additional benefits of the preferred options compared to taking no action</b>			
Commercial fishing sector (regulated parties)	Increased monitoring can provide greater certainty and demonstration of fishing practices that avoid dolphin bycatch.	Non-monetised, Low/Medium	Medium
Fisheries New Zealand (regulators)	Greater level of regulatory oversight on regulated businesses and practices to manage fisheries risk to Hector's dolphins	Non-monetised, High	High
Wider government	Greater oversight and management of human-induced threats on protected species, improved research focus	Non-monetised, High	High
Other parties	New Zealand's standing internationally in marine mammal protection, and associated spin-offs to domestic and international tourism, marine mammal research, and trade.	Non-monetised, High	Medium
<b>Total monetised benefits</b>		N/A	N/A
<b>Non-monetised benefits</b>	<p>Improve management of fisheries risk to Hector's dolphins.</p> <p>Greater certainty that fisheries-threats are not affecting achievement of population outcomes.</p> <p>Greater certainty for fishers and incentive to adapt their fishing practices to avoid further regulatory intervention.</p> <p>Ability for trawl fishers, in particular, to continue to operate and innovate Hector's dolphin bycatch mitigation tools or practices.</p>	Medium	Medium

### Further qualitative considerations and assumptions of the impact of the preferred options

#### *Effectiveness*

173. The population outcomes under the Threat Management Plan may not be achieved if other human-induced threats (i.e., toxoplasmosis) are not also successfully managed. If this turns out to be the case, then the costs incurred by the fishing sector may result in negligible benefits for Hector's dolphins.
174. Fisheries New Zealand will continue to work in collaboration with the Department of Conservation under the Threat Management Plan to ensure that agencies remain

aligned in efforts to manage human-induced impacts and ensure progress towards population outcomes and objectives being achieved for each subspecies.

#### *Improved reputation with consumers*

175. Proposals that incentivise good fishing practice by fishers and improve environmental performance speak directly to consumer expectations for sustainable seafood. New Zealanders' perceptions of the fishing industry and of how Fisheries New Zealand ensures that the industry operates in a sustainable way would both benefit from the proposals to protect Hector's dolphins.
176. The goal of minimising the fishing-related deaths of Hector's dolphins and creating incentives to drive this towards zero aligns with public expectations around the management of our fisheries. The future implementation of improved monitoring and verification methods will provide an opportunity to enhance this reputation by being able to demonstrate fisher accountability and improvements to the system.

#### *Other*

177. There is always the potential for new information on Hector's dolphin distribution to create the need to reassess and remodel the risk to dolphins from fishing-related activities. The Threat Management Plan and the measures in place to protect Hector's dolphins may need to be reviewed considering any new analysis that reveals a significant threat requiring a management response.
178. Also, the response to fishing-related deaths of Hector's dolphins, particularly when they threaten a fishing-related mortality limit, will be open to the Minister for Oceans and Fisheries. The costs and benefits of any actions, be they regulatory or voluntary, will be analysed and considered at the time.

## **Section 3: Delivering options**

### **3.1 How will the new arrangements be implemented?**

179. Fisheries New Zealand is the agency responsible for the implementation of further fisheries measures to protect South Island Hector's dolphins on behalf of the Minister for Oceans and Fisheries.

#### **Regulatory measures**

180. If the preferred options are approved, amendments and additions to the following regulations would be required:
  - Fisheries (Commercial Fishing) Regulations 2001
  - Fisheries (South-East Commercial Fishing) Regulations 1986
  - Fisheries (Southland and Sub-Antarctic Commercial Fishing) Regulations 1986
  - Fisheries (Amateur Fishing) Regulation 2013
181. The Ministry for Primary Industries will be responsible for the enforcement of new regulations that restrict fishing. Fisheries New Zealand (with support from the Department of Conservation) will be responsible for operation of the Bycatch Reduction Plan across all relevant vessels and areas.

182. Fisheries New Zealand considers the preferred options can be implemented consistent with the Government's expectations for regulatory stewardship.
183. It is proposed that the amendments that require regulatory promulgation would come into force by 1 October 2022. If Cabinet agrees, the Governor-General would then be recommended to make the necessary changes by Order in Council.

### **Voluntary measures**

184. The implementation of certain voluntary aspects of the Bycatch Reduction Plan will use the existing Liaison Officer Programme for protected species that is managed by the Department of Conservation. Fisheries New Zealand will work with the Liaison Programme and industry to ensure there are protected species risk management plans on every commercial set net and trawl vessel that set out the mitigation measures each vessel will use to avoid capture of Hector's dolphins. We note that there are already risk management plans on vessels that account for over 95 percent of the set net and trawl effort for the north, south and east coast areas of the South Island.
185. Fisheries New Zealand will work with the Liaison Officers, Department of Conservation, and the fishing industry alongside vessel operators to investigate the reasons for every Hector's dolphin bycatch incident and, where required, suggest additional mitigation approaches that may not be in the vessel's PSRMP. Operating procedures will be developed to guide this work.

### **Communications**

186. A communications plan will be developed for the notification of all measures. New measures would be publicised through local newspapers, the Ministry for Primary Industries and Fisheries New Zealand website and social media channels directly to affected stakeholders and representative stakeholder bodies, and through MPI Fishery Officers' interactions with fishers in each area.
187. Further detailed information will be provided to affected stakeholders closer to implementation (e.g., during the 28-day Gazette notice period before any regulated measures take effect).

### **3.2 Implementation issues/risks**

188. Implementation risks with the proposed measures fall into the following categories:
- Effort displacement rather than risk reduction,
  - Litigation, and
  - Compliance.

#### **Effort displacement**

189. Estimated risk reduction assumes that the fishing effort in an area disappears completely because of a closure. However, fishing effort can instead move from a newly closed area to another area where Hector's dolphins are also found (that is, effort is 'displaced'). This can result in a shift of the risk of fishing-related deaths (fisheries risk) rather than a reduction.
190. Some submissions received during consultation raised concern that effort displacement would occur under the proposed trawl gear restrictions, trawl closures and set net closure options and result in other parts of the Hector's dolphin distribution being subject to an increase in fisheries risk.

191. We consider this risk is best mitigated under our preferred option of the Bycatch Reduction Plan. This option is intended to incentivise and support fishers to reduce fishing-related Hector's dolphin deaths towards zero over time. This option also defines and regulates environmental bottom line fishing-related mortality limits in two of the subpopulations to give greater certainty that fishing-related dolphin deaths will not exceed the levels necessary to meet the Threat Management Plan fisheries objectives.

## Litigation

192. There are concerns that implementation may be compromised if litigation is undertaken by any of the interested stakeholder parties. Litigation can result in a delay and/or failure to put in place additional fisheries measures.

193. There was strong concern from a range of environmental non-governmental organisations and the public that the proposed fisheries measures did not go far enough to provide the most precautionary management approach to reduce the risk of fishing-related deaths of Hector's dolphins.

194. We consider the options presented are consistent with the requirements of section 15(2) of the Fisheries Act, which enables the Minister "to take such measures as he or she considers are necessary to avoid, remedy, or mitigate the effect of fishing-related mortality on any protected species".

## Compliance

195. Successful implementation of fisheries measures requires there to be a high degree of compliance from those directly affected by the measures, including commercial and recreational fishers. For government and Fisheries New Zealand/Ministry for Primary Industries as the administrator of the fisheries management system, there are expected to be short-term costs, including:

- increased monitoring and compliance activities; and
- revised educational and promotional material regarding the fisheries changes.

196. Electronic catch and geospatial position reporting requirements of catch and incidental capture of protected species and current location and activity of vessels is critical. This information is used to monitor compliance with spatial protection measures (e.g., closed areas) and fishing restrictions such as speed at which a trawl net can be towed (if progressed).

197. The planned rollout of the on-board camera monitoring programme on nearly all inshore vessels that use methods that pose the greatest risk to Hector's dolphins is a critical requirement for the preferred Bycatch Reduction Plan option. There is a high dependency on the timing of the camera roll-out for the Bycatch Reduction Plan to become fully operational.

198. On-board cameras provide the most comprehensive means of catch verification, while electronic catch and geospatial position reporting is used to assess whether area measures are complied with. Collectively, these tools help Fisheries New Zealand and the Department of Conservation to evaluate the effectiveness of the measures (e.g., the number of Hector's dolphins captured in remaining open areas versus limits imposed). Failure to successfully implement the on-board camera programme would undermine the effectiveness of the Bycatch Reduction Plan by:

- limiting the level of independent verification of reported Hector's dolphin bycatch,

- reducing tangata whenua and stakeholder confidence in the effectiveness of the measures in place, and
- reducing the accuracy in our understanding of fisheries risk (i.e., estimates of fishing-related deaths, areas of higher risk).

199. Fisheries New Zealand will need to ensure that there is adequate resourcing to assess and review the data and information collected via digital monitoring (electronic catch and geospatial position reporting and on-board cameras) to enable a timely response, including enforcement action where applicable, to interactions between commercial fishers and Hector's dolphins.

### 3.3 How will the new arrangements be monitored, evaluated, and reviewed?

#### Monitoring

200. Fisheries New Zealand/Ministry for Primary Industries collects information to monitor the effectiveness and impact of measures on Hector's dolphins. The new measures would be monitored from two perspectives:
- compliance, and
  - their effectiveness in helping to achieve the fisheries objectives within the Threat Management Plan.
201. The Ministry for Primary Industries monitors commercial and recreational fishers' compliance with fisheries measures, including whether there is illegal fishing activity in closed areas.
202. Electronic and geospatial position reporting requirements for all commercial fishing vessels enables assessment of commercial fishers' compliance with reporting requirements and area closures.
203. The ongoing use of observers and rollout of on-board camera monitoring provides additional means of catch verification and assessing whether measures are complied with, as well as the effectiveness of the measures (e.g., the number of Hector's dolphins captured in remaining open areas).
204. Department of Conservation Liaison Officers will be there to support use of bycatch mitigation using the vessel specific Protected Species Risk Management Plans (PSRMPs). Liaison Officers will conduct audits and, when required, updates of PSRMPs. Audits will also be carried out by MPI Fisheries Observers, and, if required, follow-up action will be taken by Liaison Officers. On-board cameras will also be used to verify use of mitigation measures.
205. Effectiveness of the measures is further monitored via:
- Research (e.g., updated information on abundance and distribution of Hector's dolphins, updated risk assessments) by both Fisheries New Zealand and the Department of Conservation. The spatial risk assessment model significantly improves our ability to estimate the level of fishing-related impacts in different areas and so to assess performance of fisheries measures against the Threat Management Plan fisheries objectives.
  - The necropsy programme managed by the Department of Conservation to determine cause of death when Hector's dolphin carcasses can be recovered.

## Assessment

206. An annual publicly available performance report would assess overall operation of the Bycatch Reduction Plan. Measurement against Threat Management Plan objectives and trends in the number of Hector's dolphin captures and deaths (with respect to fishing-related mortality limits) are obvious baseline measures of performance. Fisheries New Zealand has developed a set of performance measures to monitor the Plan's effectiveness at avoiding Hector's dolphin bycatch, research delivery and monitoring, and transparency (refer to **Table 5**).

**Table 5. Performance monitoring of the Bycatch Reduction Plan.**

<b>Avoiding Hector's dolphin bycatch</b>	Proportion of each relevant fishing fleet with vessel-specific protected species risk management plans that include measures for Hector's dolphins (target: 100 percent)
	Rate of adherence to vessel-specific protected species risk management plans (based on available monitoring and audit data) (target: 100 percent)
	Vessel risk management plans are reviewed and updated to reflect the best available information (target: annual review)
<b>Hector's dolphin bycatch</b>	Rates of Hector's dolphin captures are decreasing
	Fishing-related mortality limits are not reached or exceeded
	Estimated fishing-related deaths or risk ratio (including levels of uncertainty) from the Hector's dolphin spatially explicit risk assessment model relative to the 2019 model outputs are decreasing for all subpopulations
<b>Research and monitoring</b>	Research undertaken specifically for local and subpopulations of particular concern where there is significant uncertainty in our risk assessment (target: underway or completed).
	Uncertainty in risk assessment model inputs (for example, biological and spatial data and parameters, nature of fishing interactions such as vulnerability and cryptic mortality) is decreasing
	Unreported Hector's dolphin bycatch detected via on-board camera footage review (target: zero)
<b>Transparency</b>	Quarterly reporting of Hector's bycatch events and associated management response
	Annual reporting on adherence to associated management responses

207. Existing annual research planning processes run by Fisheries New Zealand (via the Aquatic Environment Working Group) and the Department of Conservation (Conservation Services Programme):

- assess the robustness of research undertaken,
- help to determine new information and analysis needs, and

- involve other stakeholders (e.g., academics, environmental non-governmental organisations, industry representatives) in the discussions to help identify and evaluate their concerns as it relates to the information being gathered or how it is being analysed.
208. Fisheries New Zealand and the Department of Conservation have established a North Island Hector's and Māui dolphin forum and will also establish a South Island forum, made up of scientific experts and interested tangata whenua and stakeholders that have knowledge and experience on the range of human-induced threats being managed under the Threat Management Plan, including fishing. The South Island Hector's dolphin forum will be set up following Ministerial decisions on this review.
209. The forum will provide feedback on the implementation and effectiveness of the new and existing management measures. This would include the Bycatch Reduction Plan if implemented.

## Review

210. Reviews of the fishing-related measures may be proposed if new information on Hector's dolphins changes our assessment of the risk of fishing-related mortality, or supporting information shows the management measures (regulatory or voluntary) are not working as intended to manage the effects of fishing-related mortality to meet the Threat Management Plan fisheries objectives.
211. Evidence supporting a review may include new information on the:
- abundance and distribution of the Hector's dolphin sub or local populations,
  - distribution and intensity of fishing-related threats, and/or
  - vulnerability or susceptibility (or both) of Hector's dolphins to different fishing-related threats.
212. All these factors can affect our estimates of fishing-related mortality.
213. Alternatively, despite new measures and improved monitoring, the observed and reported numbers of fishing-related deaths may exceed the levels needed to meet the fisheries objectives. Consequently, early reviews may also be prompted by new information that indicates:
- the Hector's dolphin sub or local population is at a greater risk of decline than previously thought,
  - a sudden increase in fishing-related deaths, and
  - fishing-related deaths in areas where they are unexpected.
214. Regular engagement by Fisheries New Zealand with tangata whenua (through the Iwi Fisheries Forums) and other interested or affected stakeholders (e.g., commercial, recreational, and environmental non-governmental organisations) via the Science Working Groups and North and South Island Forums provides an opportunity for discussion of concerns with any fisheries measures, achievement of the fisheries objectives, and any other related matters (e.g., research, monitoring, and education).