

Improving whitebait management

Te whakapai ake i te whakahaere īnanga

Discussion document | January 2020
Puka kōrerorero | Kohitātea



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Minister's Foreword | Tā te Minita Kupu Whakataki

New Zealanders are passionate about whitebait. For some, a freshly cooked fritter, enjoyed riverside, is unbeatable. For others, whitebait are valued as an irreplaceable part of New Zealand's biodiversity. Whitebait and whitebaiting are key elements of our culture, and I am determined that whitebait should thrive and that we have a healthy fishery for New Zealanders to enjoy.

However, New Zealand's native fish are in decline. 70% of our remaining 56 species of native fish are at risk or threatened. Among those we call whitebait, 4 of 6 species are at risk or threatened. These are the adult populations of whitebait species, on which the future of the whitebait fishery depends.

In 2018, the Department of Conservation asked New Zealanders what they thought about the issues facing whitebait and options for whitebait management. From that engagement process, the Department learnt that most people think the current management of whitebait is inadequate to secure the future of these species. There is a lot still to learn about whitebait, and their life cycle makes improving our knowledge an extremely slow, challenging and long-term endeavour. Some knowledge gaps may never be filled. We do know enough to improve how we manage these native fish species, their habitat, and the fishery that depends on them.

Some of the issues raised in the 2018 engagement process can be addressed as part of ongoing work by central government, councils and community groups. Improving management of the whitebait fishery requires regulatory change.

This document sets out proposals for an overarching management goal for the whitebait species and options for the future regulation of the whitebait fishery.

For whitebaiting to continue in perpetuity, and for people to be able to enjoy whitebait patties without worrying about eating threatened species, we all need to do our part in looking after these native fish better so that they and the fishery flourish.

I encourage all New Zealanders with views about the future of our native fish and whitebaiting to contribute to this process. With careful habitat management and responsible fishing practices, we can ensure that whitebait and whitebaiting remain a strong part of New Zealand's identity.

Ngā mihi maioha

Hon Eugenie Sage

Minister of Conservation

Tā te Minita Kupu Whakataki | Minister's Foreword

Kei te ngākau whitawhita te hunga nō Aotearoa mō te inanga (whitebait). Ki ētahi, ko te mutunga kē mai nei o te pai ko tētahi mea kōnatunatu, ka kaingia ki te taha o te awa. Ki ētahi atu, e kaingākaunuitia ana te inanga hei wāhanga kāmeheameha o te rerenga rauropi o Aotearoa. Ko te inanga, ko te hao inanga hoki, he āhuetanga pū o tō tātou ahurea, ā, e manawanui ana ahau kia tōnui ai ngā inanga, ā, kia tū ai te mahinga inanga hauora hei pārekareka mō te hunga nō Aotearoa.

Heoi anō, kei te mimiti haere ngā ika māori o Aotearoa. Mai i ngā momo 56 o tō tātou momo ika māori e toe tonu ana kei te pāraruru, kei te mōrearea rānei te 70%. I roto i te huinga e kīia ana e tātou ko te inanga, kei te pāraruru, kei te mōrearea rānei te 4 mai i te ono o aua momo. Ko ēnei ngā taupori kātua o ngā momo inanga, ā, he mea whirinaki ki a rātou te mahinga inanga mō muri atu.

I te tau 2018, i ui atu a Te Papa Atawhai ki te hunga nō Aotearoa he aha tō rātou whakaaro mō ngā take e aro ana ki te inanga, me ngā kōwhiringa mō te whakahaere inanga. Mai i taua hātepe tūhono, i ako Te Papa Atawhai e pēnei ana te nuinga o ngā tāngata kāore i te eke te whakahaere inanga o nāianei ki tērā e hiahiatia ana hei pupuru i te oranga tonutanga o ēnei momo. He nui ngā āhuetanga e toe tonu ana hei ako mō te inanga, ā, nā tā rātou huringa ko te whakapiki i tā tātou mātauranga i pōturi rawa, i uaua hoki, ā, he mahi mā te wā roa. E kore rawa pea e whakakīia ētahi āputa mātauranga. Kei te eke tā tātou mātauranga ki tērā e hiahiatia ana hei whakapai i tā tātou whakahaere i ēnei momo ika māori, i tō rātou nōhanga, i te mahinga ika e whirinaki ana ki a rātou anō hoki.

Ka taea te anganui ki ētahi o ngā take i whakaputaina i te hātepe tūhono i te tau 2018 hei wāhanga o ngā mahi marohi a te kāwanatanga ā-motu, ngā kāwanatanga ā-rohe/takiwā, me ngā rōpū hapori. Kia whakapai i te whakahaerenga o te mahinga inanga ka hiahiatia te panoni waeture.

Ko tā tēnei puka he whakatakoto i ngā marohi mō tētahi whāinga whakahaere tuanui mō ngā momo inanga me ngā kōwhiringa mō te whakarite i te mahinga inanga hei te wā e heke mai ana.

Kia tū tonu te hao inanga mō ake tonu, ā, kia taea ai te hunga te pārekareka i ngā kōnatunatu inanga horekau te āwangawanga mō te kai i ngā momo mōrearea, mā tātou katoa e mātua kawē te wāhanga kei a tātou kia pai ake te tiaki i ēnei ika māori kia puāwai ngā inanga, me te mahinga inanga hoki.

Kei te āki ahau i te hunga katoa nō Aotearoa he whakapae tō rātou mō te āpōpō o tō tātou ika māori, o te hao inanga, ki te whai wāhi mai ki tēnei hātepe. Kia āta whakahaeretia te nōhanga, kia haepapa ngā mahi hao ika, ka taea e tātou te whakapūmau kia noho tonu te inanga me te hao inanga hei āhuetanga pū o te tuakiri o Aotearoa.

Ngā mihi maioha

Hon Eugenie Sage

Minita mō Te Papa Atawhai

Executive summary | Whakarāpopototanga tāhuhu

Whitebait are the young of six species of New Zealand native fish: īnanga/īnaka, kōaro, banded kōkopu, giant kōkopu, shortjaw kōkopu and the common smelt (parohe/paraki). These fish spend time in both freshwater and saltwater environments, and every year, young whitebait leave the ocean to travel upstream and become adult fish. During upstream migrations, these young fish comprise the whitebait fishery.

Four of the six whitebait species are classified by the New Zealand Threat Classification System as At Risk or Threatened. The decline of these species is not attributable to any single factor. Threats and pressures that affect the whitebait species include habitat loss and degradation, fragmentation of habitat by barriers such as culverts that prevent fish moving upstream and downstream, loss of spawning sites, introduced fish species such as trout, and fishing pressure. The nature and extent of threats varies among different locations and between whitebait species.

The Department of Conservation holds most of the management responsibilities relevant to whitebait. These responsibilities include management of the whitebait fishery. Currently, two sets of regulations apply to the whitebait fishery: one on the West Coast of the South Island, and the other around the rest of New Zealand. This fishery is managed as a recreational fishery, although it is not illegal to sell whitebait and commercial activity occurs.

There are many differences between management of the whitebait fishery and other recreational and freshwater fisheries in New Zealand. While essential work continues to address other threats to whitebait (for example, habitat improvement), management of the whitebait fishery can also be improved.

This discussion document provides information on whitebait in New Zealand and DOC's work on whitebait, including management of the fishery. The purpose of this document is to support public consultation on improving whitebait management. Specifically, this consultation seeks feedback on proposals for:

- A recommended management goal for the six species of native fish that are fished as whitebait
- Recommended management outcomes for the whitebait fishery, and,
- Amendments to the whitebait fishing regulations and whitebait export provisions to achieve these outcomes.

Proposals include a series of options (including recommended options) for:

- Amending the timing of the whitebait fishing season
- Introducing nationwide upstream limits on whitebait fishing
- Creating refuges for whitebait species in some waterways (where whitebait fishing is excluded)
- Amending whitebait fishing practices, and,
- Phasing out the export of whitebait.

Submissions are welcomed on the proposals contained in this document, and these can be made online or via letter or email. Further information about work on improving whitebait management and this consultation can be found at:

<https://www.doc.govt.nz/whitebait-management>

Whakarāpopototanga tāhuhu | Executive summary

Ko te īnanga ko ngā punua o ngā momo ika māori e ono nō Aotearoa: ko te īnanga/īnaka, te kōaro, te kōkopu, te kōkopu nui, te kōkopu kauaepoto, te parohe/paraki hoki. Kei te noho ēnei ika ki te wai māori, ki te wai tai anō hoki, ā, ia tau, ka wehe atu ngā punua i te moana ki te rere whakarunga i ngā awa kia pakeke ai. I te wā o ngā rerenga whakarunga, ko ēnei ika te mahinga īnanga.

E whā o ngā momo īnanga e ono e whakarōpūhia ana e te New Zealand Threat Classification System hei Pāraru (At Risk), hei Mōrearea (Threatened) rānei. Kāore i te noho haepapa te āhuatanga kotahi anake mō te mimititanga o ēnei momo. Ko ngā whakatuma me ngā pēhitanga e pā ana ki ngā momo īnanga ka tae atu ki te ngaronga me te te tupuheke o te nōhanga, te wewehenga o te nōhanga nā ngā aukati pērā i ngā karawata e aukati ai te rerenga whakarunga, whakararo hoki o ngā ika ki ngā awa, te ngaronga o ngā wāhi toene, ngā ika rāwāho pērā i te taraute, me te pēhitanga nā te hao ika. Ko te āhua, ko te whānui o ngā whakatuma e rerekē ana i waenganui i ngā tini wāhi, i waenganui hoki i ngā momo īnanga.

Kei Te Papa Atawhai te nuinga o ngā kawenga whakahaere e hāngai ana ki te īnanga. Kei roto i ēnei kawenga ko te whakahaere i te mahinga īnanga. Ināianei, e rua ngā huinga waeture e hāngai ana ki te mahinga īnanga: ko tētahi ki Te Tai Poutini ki Te Wai Pounamu, ā, ko tērā atu puta noa i te toenga o Aotearoa. Kei te whakahaerehia tēnei mahinga ika hei mahinga ika ā-rēhia, ahakoa ehara i te mahi taihara te hoko atu i te īnanga, ā, ka puta he mahi ahumoni.

He nui ngā rerekētanga i waenganui i te whakahaere i te mahinga īnanga me ērā atu mahinga ika ā-rēhia, ā-wai māori hoki ki Aotearoa. I te wā e haere tonu ana ngā mahi waewae hei anganui ki ērā atu whakatuma ki ngā īnanga (hei tauira, te whakapai nōhanga), ka taea hoki te whakapai ake i te whakahaere i te mahinga īnanga.

Kei te tuku tēnei puka kōrerorero i ngā mōhiohio mō te īnanga ki Aotearoa, me ngā mahi a Te Papa Atawhai e pā ana ki te īnanga, tae atu ki te whakahaere i te mahinga īnanga. Ko te aronga o te puka he tautoko i te akoako tūmatanui mō te whakapai i te whakahaere īnanga. Inarā, kei te kimi kōrero whakahoki tēnei akoako e pā ana ki ngā marohi mō:

- Tētahi whāinga whakahaere e taunakitia ana mō ngā momo ika māori e ono e haongia ana hei īnanga
- Ngā hua whakahaere e taunakitia ana mō te mahinga īnanga, ā,
- Ngā panoni ki ngā waeture hao īnanga me ngā wāhanga hoko atu i te īnanga ki tāwāhi kia tutuki ai ēnei hua.

Kei roto i ēnei marohi ko tētahi raupapa kōwhiringa (tae atu hoki ki ngā kōwhiringa e taunakitia ana) mō:

- Te whakarerekē i te wā o te kaupeka hao īnanga
- Te whakauru i ngā paenga pito whakarunga puta noa i te motu mō te hao īnanga
- Te whakauru i te aukati i ētahi kōwhiringa ara wai mō te hao īnanga

- Te whakarerekē i ngā tikanga hao īnanga, ā,
- Te āta whakakore i te hokohoko ki tāwāhi o ngā momo īnanga.

Kei te rāhiritia ngā tāpaetanga e pā ana ki ngā marohi ki roto i tēnei puka, ā, ka tukuna ēnei ā-tuihono, ā-reta, ā-īmēra rānei. Ka kitea ētahi atu mōhiohio e pā ana ki ngā mahi whakapai i te whakahaere īnanga me te akoako nei ki:

<https://www.doc.govt.nz/whitebait-management>



Figure 1. Whitebaiting at the Waikanae River.

Purpose | Te aronga

The purpose of this consultation is to seek feedback on:

- a recommended management goal for the six species of native fish that are fished as whitebait;
- recommended management outcomes for the whitebait fishery;
- proposed amendments to the whitebait fishing regulations (a set of options, including the Department of Conservation's recommended options); and,
- a proposal to phase out the export of whitebait species.

Proposals are set out individually in this document. Packages of these proposals can be applied in different combinations. Feedback is welcomed on each of the proposals set out, as well as how combinations of these proposals could be progressed as a package.

This document also provides information on:

- whitebait in New Zealand, including their life history, conservation status, and how they are managed; and
- the Department of Conservation's (DOC) work on whitebait, including management of the whitebait fishery.

What are the problems that this consultation will address?

1. The management goal for the six whitebait species is unclear. The Conservation Act 1987 sets out DOC's responsibilities for managing these species. How legislative and policy provisions are interpreted specifically for these species and the whitebait fishery has not been set out in recent decades.
2. Management outcomes for the whitebait fishery are unclear. Prior to 1990, sharing catch equitably among fishers was a focus. This focus has not been evaluated or reviewed since the 1990s.
3. The rationale for the regulations currently in place, and the differences in these regulations between regions, is unclear in some cases.
4. Four of the six native fish species whose young make up the whitebait fishery are classified as "At Risk" or "Threatened" (under the New Zealand Threat Classification System). A number of threats and pressures have resulted in the current status of whitebait species. Ongoing work and the additional resourcing provided to DOC through Biodiversity 2018 are insufficient to resolve all of the threats and pressures on whitebait.

Scope | Te hōkaitanga

The scope of this consultation is summarised in the following table:

In scope	Out of scope
<ul style="list-style-type: none">• The management goal for whitebait• Management outcomes for the whitebait fishery• The whitebait fishing regulations• The Conservation Act 1987 (only if required to progress measures emerging from consultation)• Phasing out the export of whitebait	<ul style="list-style-type: none">• The Fisheries Act 1996• The Conservation (Infringement System) Act 2018• The Conservation (Indigenous Freshwater Fish) Amendment Act• The Freshwater Fisheries Regulations 1983• Regulations for the customary fishing of whitebait• Allocation of management responsibilities for whitebait among government agencies• Provisions of the Resource Management Act 1991 that apply to whitebait stands• Management of sports fish (such as trout and salmon)• Conservation management actions undertaken regionally or locally

How to have your say:

You can have your say on the proposals in this discussion document by providing a written submission to DOC. You can do this by:

- completing and submitting the online form at <https://www.surveymonkey.com/r/WhitebaitConsultation>
- emailing whitebait@doc.govt.nz
- writing a letter to:

Whitebait Management Consultation
Department of Conservation
P. O. Box 10420
Wellington 6143

Ensure your submission includes:

- your name and title
- the name of your organisation (if you are submitting on behalf of an organisation)
- if your submission represents the views of that entire organisation or a part of it
- your contact details (email preferred).

Please note DOC's privacy statement (in the front of this document and on the DOC website).

All submissions must be received by DOC by 9:00am on 2 March 2020.

How to find out more:

DOC is holding public sessions to discuss the information and proposals in this document. To find out when and where public discussion sessions will take place, go to: www.doc.govt.nz/whitebait-management.

What happens next?

To find out what will happen after this consultation, see Part 5 of this document.

Part 1: Introduction | Wāhanga 1: Kupu arataki

1.1 What are whitebait? | He aha te īnanga?

Whitebait are six species of native fish

Whitebait are the young of five species of migratory galaxiid fish (īnanga/īnaka, kōaro, banded kōkopu, giant kōkopu and shortjaw kōkopu) and the common smelt (parohe/paraki)². Adult fish of these species vary in size from approximately 8 to 10 cm long (īnanga and common smelt) up to a maximum of 60 cm long (giant kōkopu).

The life cycle of the whitebait species encompasses freshwater and marine habitats (Figure 2). Adult fish of the different whitebait species can live in most of New Zealand's freshwater habitats from lowland wetlands and estuaries to high-altitude tarns. Some galaxiid species are able to climb large waterfalls as juveniles and migrate considerable distances inland. Some common smelt migrate upstream as small transparent juveniles, while others spend most of their life in the marine environment and only migrate into freshwater to spawn as adults^{3,4}.

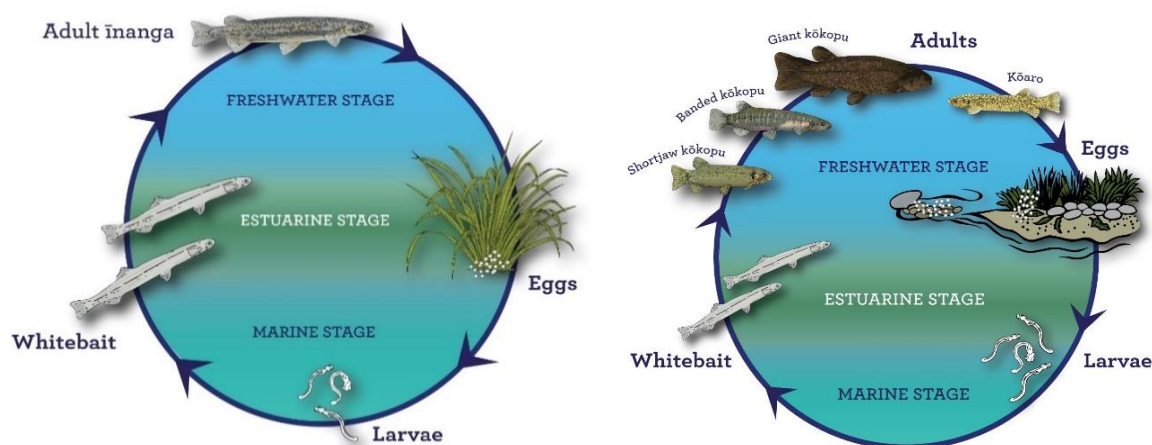


Figure 2. Life cycles of the five galaxiid whitebait species (left: īnanga, right: kōaro and kōkopu). Note that some landlocked populations also occur. Some juveniles of the sixth whitebait species – common smelt – migrate upstream as juveniles, while others only migrate from marine habitats into freshwater as adults to spawn.

Spawning

The spawning patterns of īnanga are broadly understood. This species spawns in the tidal regions of rivers among vegetation that is inundated on spring tides, and where saltwater and freshwater meet. Peak spawning occurs within or near the saltwater wedge (the “tongue” of saltwater that enters bodies of freshwater, such as rivers and creeks). There is limited knowledge of the spawning habitats of the other galaxiid whitebait species. Spawning sites are known to include grasses and leaf litter on the

² As defined in the whitebait fishing regulations.

³ McDowall (1990)

⁴ Goodman (2018)

margins of adult habitat, and in-stream sites under small to medium-sized boulders. Common smelt spawn over river gravels or on lake shorelines⁴.

Most whitebait species have a peak spawning period, within a broader timeframe in which spawning can occur. The timing of spawning varies somewhat year-to-year.

After eggs are laid, they develop for approximately 3 to 4 weeks. Larvae then hatch and are swept downstream into estuarine, marine, or wetland habitats or other slow-moving waters, where they feed and grow for 4 to 6 months^{5,6,7}.

Migration

The transparent juveniles of these species move upstream in large shoals mainly in spring and form New Zealand's whitebait fishery. Migratory behaviour varies both within and between whitebait species depending on the rivers and regions fish are migrating from and back into.

Unlike many other species that 'home' to their natal river, whitebait may return to either their natal river, or another river, to become adults and breed. There is some information on the extent to which the migratory galaxiid species move between rivers. Movement provides enough genetic mixing to prevent the formation of new species. However, movement between rivers is not unlimited. There is emerging evidence of regional structure in whitebait populations. Therefore, local extinctions of the whitebait species may not be recoverable through recolonisation from distant sources⁴.



Figure 3. Whitebait are the young of six species of New Zealand's native fish.

⁵ McDowall et al. (1975)

⁶ McDowall et al. (1994)

⁷ McDowall and Kelly (1999)

1.2 Management of whitebait | Te whakahaere īnanga

Conservation status

The conservation status of New Zealand's freshwater fish has been ranked six times over the past 22 years, using three iterations of the New Zealand Threat Classification System^{8,9,10}. The current New Zealand Threat Classification System is a national system. DOC coordinates expert panels who use this system's criteria to assess the status of New Zealand's flora and fauna. Panel chairs and members are experts in their field and are from universities, research organisations, government and non-government organisations. Classifications are based on population size and/or area of occupancy and the predicted rate of decline of each species.

In 2017, īnanga, kōaro and giant kōkopu were classified as At Risk – Declining. Shortjaw kōkopu was Threatened – Nationally Vulnerable and banded kōkopu and common smelt were considered Not Threatened¹¹. Further, while the constraints of this database are recognised (for example, that data are not collected from nationwide structured surveys), the records held in the New Zealand Freshwater Fish Database indicate a contraction in the geographic range of the adults of the whitebait species and a decline in the number of individual adults captured at some sites¹².

At a global level, the International Union for Conservation of Nature's (IUCN) Red List is the benchmark for assessing the conservation status of flora and fauna. The Red List classifies shortjaw kōkopu as Endangered and the giant kōkopu as Vulnerable. Both have decreasing populations and occur only in New Zealand. The other whitebait species are assessed as Least Concern, with stable or unknown population trajectories¹³.

The decline of the adult populations of whitebait species around New Zealand cannot be attributed to any single factor. Known threats and pressures are⁴:

- loss of habitat, due to draining of wetlands and physical changes to rivers;
- loss of access to waterbodies as a result of fish passage barriers (for example, culverts);
- degradation of habitat, including as a result of deforestation, pollution, and water take (for example, for irrigation);
- loss of spawning sites due to degradation of waterbodies (for species that spawn instream) and changes to riparian margins (for species that spawn on riverside vegetation);
- introduced species; and,
- fishing pressure.

The nature and extent of threats and pressures that influence population status vary from river to river, region to region, and among whitebait species. For example, in one area, a resident population of adult īnanga may have healthy numbers but be unable to

⁸ Molloy and Davis (1992)

⁹ Molloy et al. (2001)

¹⁰ Townsend et al. (2008)

¹¹ Dunn et al. (2017)

¹² <https://www.niwa.co.nz/information-services/nz-freshwater-fish-database>

¹³ IUCN (2019)

spawn successfully because of changes to the banks of their stream due to mowing or spraying. In contrast, another inanga population may have good spawning options but poor adult growth rates or survival due to habitat degradation.

In such situations, while fishing pressure may not have previously had a significant impact on its own, it may be problematic when combined with other threats and pressures, particularly for the less numerous species (for example, shortjaw kōkopu). Furthermore, most populations of whitebait species experience the cumulative effects of a range of impacts, including multiple local pressures encountered across freshwater and saltwater habitats at different stages of their lives. An increase in fisher numbers also increases pressure on these fish; the amount of whitebait harvested is known to increase with the number of fishers present⁴.

Legislation and policy context

The Conservation Act 1987, and its associated regulations and notices, gives DOC most of the management responsibilities relevant to whitebait including management of the whitebait fishery. Key elements of this Act that are relevant to whitebait management are summarised in Table 1.

The Ministry for Primary Industries (MPI) and Fisheries New Zealand (FNZ) have no responsibilities for managing the whitebait fishery. The Fisheries Act 1996 specifically excludes whitebait from the management regime that applies to commercial fishing. Whitebait are not in the Quota Management System. MPI does have responsibilities relating to the aquaculture of whitebait species, and the transport of these species around New Zealand.

Table 1. Key elements of the Conservation Act 1987 that underpin management of the native fish that are whitebait.

Conservation Act 1987
<p>Section 6</p> <p><i>(a) to manage for conservation purposes, all land, and all other natural and historic resources, for the time being held under this Act...;</i></p> <p><i>(ab) to preserve so far as is practicable all indigenous freshwater fisheries, and protect recreational freshwater fisheries and freshwater fish habitats;</i></p> <p><i>(b) to advocate the conservation of natural ... resources generally;</i></p> <p><i>(e) to the extent that the use of any natural or historic resource for recreation or tourism is not inconsistent with its conservation, to foster the use of natural ... resources for recreation, and to allow their use for tourism.</i></p>
<p>Section 2</p> <p>Conservation is defined as:</p> <p><i>the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations</i></p>

More broadly, other elements of the legal and policy framework that include provisions relevant to the whitebait species and their management include:

- the Freshwater Fisheries Regulations 1983 (for example, DOC has responsibilities for oversight of regulations ensuring fish passage around obstacles in waterbodies such as culverts, fords);
- the Resource Management Act 1991 (through which local authorities have functions for managing indigenous biodiversity, and DOC can advocate to reduce the impacts of development on the whitebait species. Whitebait stands are also managed under this Act);
- Whitebait Fishing (West Coast) Regulations 1994; and
- Whitebait Fishing Regulations 1994, which cover the rest of New Zealand.

1.3 The whitebait fishery | Te mahinga inanga

The whitebait fishing regulations

Whitebait is defined in the whitebait fishing regulations as the young or fry of inanga (*Galaxias maculatus*), kōaro (*G. brevipinnis*), banded kōkopu (*G. fasciatus*), giant kōkopu (*G. argenteus*), shortjaw kōkopu (*G. postvectis*), and common smelt (*Retropinna retropinna*).

Two sets of regulations underpin the whitebait fishery:

- the Whitebait Fishing (West Coast) Regulations 1994; and
- the Whitebait Fishing Regulations 1994 (which cover the rest of New Zealand including the Chatham Islands).

The regulations in force today have evolved from a series of complex and largely locally oriented regulations first implemented in 1894. DOC assumed responsibility for the whitebait fishery from the Ministry of Agriculture and Fisheries in 1990 and applied the regulations that were already in place. At that time, it was commonly understood that the regulations were focused on providing for the equitable sharing of catch among fishers. The whitebait fishing regulations were last reviewed in the early 1990s⁴.

The whitebait fishery is managed as a recreational fishery. The current regulations attempt to manage whitebait fishing mainly through:

- specifying a fishing season and times of day in which fishing can occur;
- some controls on gear that may be used;
- excluding whitebait fishing around some sites (for example, fishing from bridges, around culverts and fords);
- provisions relating to fishing from licensed structures (whitebait stands);
- areas closed to whitebait fishing; and
- upstream limits on fishing.





There are important differences between the current management of the whitebait fishery and other recreational and freshwater fisheries in New Zealand (Table 2), for example:

- there is no licence required to fish for whitebait;

- there is no daily catch limit in place;
- there are no rules relating to the sale of whitebait caught;
- there is no national or regional total allowable catch of whitebait; and
- overall, total and individual catches are unlimited.

Since DOC assumed responsibility for the fishery in the 1990s, its management approach has largely remained unchanged, focusing on compliance and enforcement of the regulations. Every year, 50 to 100 prosecutions are made under the whitebait fishing regulations. The whitebait fishing regulations have remained substantively unchanged for 25 years.

Table 2. Examples of how New Zealand's recreational fisheries are managed.

	Whitebait 	Trout 	Eel 	Snapper 
Limits	<ul style="list-style-type: none"> ▶ No licence ▶ No bag limit ▶ No size limit 	<ul style="list-style-type: none"> ▶ Licence ▶ Bag limit ▶ Size limit 	<ul style="list-style-type: none"> ▶ No licence ▶ Bag limit ▶ No size limit 	<ul style="list-style-type: none"> ▶ No licence ▶ Bag limit ▶ Size limit
Regulation	<ul style="list-style-type: none"> ▶ Freshwater Fisheries and Whitebait Regulations apply to recreational fishery ▶ Commercial allowed and unregulated ▶ Customary fishing allowed 	<ul style="list-style-type: none"> ▶ Recreational regulated regionally ▶ Commercial not allowed ▶ No customary fishing 	<p>Quota Management System includes:</p> <ul style="list-style-type: none"> ▶ recreational ▶ commercial ▶ customary <p>All are regulated</p>	<p>Quota Management System includes:</p> <ul style="list-style-type: none"> ▶ recreational ▶ commercial ▶ customary <p>All are regulated</p>
Plans	<ul style="list-style-type: none"> ▶ No fishery management plan ▶ 6 species managed as one 	<ul style="list-style-type: none"> ▶ Regional management plans ▶ Single species management 	<ul style="list-style-type: none"> ▶ Draft National Fisheries Plan for Freshwater (MPI) - whitebait and trout not included ▶ Single species management 	<ul style="list-style-type: none"> ▶ Snapper (SNA1) Management Plan (MPI) ▶ Draft National Fisheries Plan for Inshore Finfish (MPI) ▶ Single species management
Knowledge	<p>Fishery very poorly understood, including:</p> <ul style="list-style-type: none"> ▶ impact of fishing ▶ no catch reporting 	<ul style="list-style-type: none"> ▶ Fishery and fishing activity well understood ▶ No catch reporting 	<ul style="list-style-type: none"> ▶ Recreational fishery poorly understood ▶ No catch reporting 	<ul style="list-style-type: none"> ▶ Fishery somewhat understood (especially where the most fishing occurs) ▶ Recreational catch estimated every 5 years in some areas
Management	<ul style="list-style-type: none"> ▶ Managed by DOC ▶ Compliance: DOC ▶ Funded from baseline 	<ul style="list-style-type: none"> ▶ Managed by Fish & Game ▶ DOC manages Taupō trout fishery ▶ Compliance: F&G, DOC ▶ F&G and DOC funded from sale of fishing licences 	<ul style="list-style-type: none"> ▶ Managed by Fisheries New Zealand (MPI) ▶ Compliance: MPI ▶ Funded from baseline 	<ul style="list-style-type: none"> ▶ Managed by Fisheries New Zealand (MPI) ▶ Compliance: MPI ▶ Funded from baseline

The whitebait fishery

Fishing for whitebait takes place in the lower reaches and mouths of rivers and streams. Methods vary for a variety of reasons, for example, location, efficiency, access, and tradition. The fishing community comprises recreational, customary, resident, and transient fishers, and fishers who sell their catch. For example, whitebaiting can range from a visitor “catching a feed” using a scoop net at a river mouth, to a keen recreationalist who catches for themselves and also catches whitebait to sell, to a resident whitebaiter fishing from a whitebait stand on a large river who sells almost all of their catch.

Publicly available catch records for the whitebait fishery are very limited. There is no requirement for fishers to report their catch. There is general agreement and perception among whitebaiters, conservation managers and scientists that there are large fluctuations in whitebait runs year-to-year and that different regions experience high and low seasons in different years⁴. There are anecdotal (including historical) accounts of significant declines in whitebait catches¹⁴. A common point of reference for the historical superabundance of whitebait was its use as garden fertiliser.

Public views about recent declines in whitebait catch vary among fishers and regions, with 39% of fishers considering that whitebait catches have declined in the last 10 years¹⁵. In contrast, declines in the adult fish of whitebait species are documented¹¹, but imperceptible to most people due to the cryptic nature of the adult fish and because it is the young whitebait that fishers target.



Figure 4. Whitebaiters preparing their gear for fishing in the Waikanae Estuary.

¹⁴ McDowall (1984)

¹⁵ DOC (2018)

Cultural values

*Tere te ĭnanga nei, tere ki te auaunga o te wai
Tere te ĭnanga nei, tere ki te hikuhiku o te wai
Oi whiwhia, oi rawea
Homai taku taonga ki au; he taonga!*

*The whitebait swims swiftly, swims against the water's current
The whitebait swims swiftly, swims to the headwaters
An abundance received, an excellent abundance
Grant me my treasure; it is precious!*

Whitebait are taonga for Māori. The relationship of Māori and whitebait, including whitebait fishing, is documented in a range of historical accounts and contemporary reports. For example, for the people of Te Puuaha (lower Waikato River), gathering annually for whitebait fishing created the opportunity for sharing knowledge about fishing and their own history. The ability to provide taonga fish as food to manuwhiri (visitors) was a critical reflection of tribal mana. Early reports of whitebait fishing in Canterbury at Waihora/Lake Ellesmere and Te Roto o Wairewa/Lake Forsyth document ĭnanga fishers repeating charms (for example, as above, documented by Best (1929)), and extensive ceremonial practices taking place around the harvest. The Māori names in common use nationwide for whitebait species today are a small subset of those used among iwi to describe the different species of whitebait, and stages of the life cycles of these fish.

Today, DOC's understanding is that views about whitebait among whānau, hapū and iwi are diverse. During DOC's engagement with Māori through 2018, the major issues for the whitebait species that were most commonly recognised included habitat loss and degradation, blocked fish passage, lack of respect for fished whitebait as a shared resource, overfishing, and the ability to sell whitebait. The lack of recognition of te ao Māori, mātauranga Māori and cultural values for these taonga species were also highlighted.

In 2019 when preparing to conduct public consultation, DOC engaged with Treaty partners around New Zealand to identify options for improving whitebait management. Again, diverse views emerged. Support for a range of management approaches was expressed, including strengthening habitat management, temporary river closures to fishing/rāhui while stocks recover, honorary compliance and monitoring roles for Māori, ending the sale of whitebait, stopping the sale temporarily while species recover, developing a total allowable catch for whitebait and allocating catch to commercial, recreational and customary sectors, and progressing various approaches to management (such as co-management, joint decision-making, co-governance).

DOC's obligation to give effect to the principles of the Treaty of Waitangi is set out in section 4 of the Conservation Act 1987. Part 5B of that Act relates to freshwater fisheries. The Act states that Māori fishing rights are unaffected by any of the provisions set out in its Part 5B. Further, Clause 16 of the Conservation (Indigenous Freshwater Fish) Amendment Bill clarified that regulations do not affect Māori fishing rights.

On an ongoing basis, DOC is working to strengthen its relationships with whānau, hapū and iwi. DOC's understanding is that there is no one-size-fits-all approach to growing Treaty partner engagement in whitebait management, or for customary fishing. DOC welcomes approaches from Treaty partners at any time on these matters.

1.4 Work on whitebait | Ngā mahi e pā ana ki te īnanga

Ongoing work

The focus of DOC's work on whitebait species varies around the country and year-to-year. In the past 10 years, resources have been allocated in the following areas:

- identifying and restoring īnanga spawning sites, often in collaboration with community groups, regional councils and other research organisations;
- ensuring unimpeded fish passage is maintained, and that connectivity is restored where barriers are in place (both operational and policy work);
- implementing a national recovery plan for shortjaw kōkopu, giant kōkopu, banded kōkopu and kōaro (2003 – 2013)¹⁶, as resources allowed;
- surveys to increase knowledge of the presence and abundance of the adults of whitebait species, and the location of spawning sites;
- compliance work including enforcement of the whitebait fishing regulations; and
- providing technical advice and advocating for improved outcomes for the whitebait species in regional planning and resource management planning processes.

¹⁶ DOC (2005)

Biodiversity 2018

The business case for Biodiversity 2018 funding was approved by the Minister of Conservation and the Minister of Finance on 11 November 2018. With this approval, \$76m will be spent over four years to slow the decline in New Zealand's biodiversity.

Within this allocation, there is funding to support work on three indigenous migratory freshwater fish species: shortjaw kōkopu (classified as Threatened – Nationally Vulnerable), īnanga (At Risk – Declining) and longfin eel/tuna (At Risk – Declining) due to concerning trends in their population status. Īnanga is a widespread species, with the juveniles forming the bulk of the culturally significant and iconic whitebait fishery. Longfin eels are also widespread and are a taonga species for tangata whenua.

Biodiversity 2018 funding is being allocated to 12 priority sites for longfin eel, shortjaw kōkopu and īnanga throughout New Zealand over the next four years. Actions to slow the decline of these species will be specific to each catchment but may include removal of fish barriers, identification and enhancement of spawning habitat, restoration of adult habitat and facilitation of a collaborative management approach among DOC, Treaty partners and stakeholders. Habitat improvement and protection work conducted in the 12 priority sites will have flow-on benefits for other species of native fish.

Monitoring and reporting will also be supported by Biodiversity 2018. A new nationwide network to monitor freshwater biodiversity is planned, which will result in monitoring being in place at 150 sites within four years. Targeted monitoring will also be implemented to assess the long-term security of freshwater migratory fish, and a monitoring plan is in preparation currently. Monitoring data will be integrated into reporting frameworks to make this information more available to end-users and the public.

In addition, funding from Biodiversity 2018 increases DOC's capacity to advocate for better outcomes for freshwater fish and their habitats as part of Resource Management Act processes.

1.5 Public engagement | Hononga tūmatanui i te tau 2018

Who did DOC talk to?

From mid-2018 through early 2019, DOC undertook an extensive engagement process to find out what New Zealanders thought about whitebait¹⁵. The engagement process was co-designed with Māori subject-matter experts.

The engagement strategy comprised a project webpage, an online survey, a dedicated email address, and 12 drop-in sessions around the country where attendees could discuss their views on whitebait management. Members of the public who submitted Ministerial letters on whitebait in 2018 were encouraged to contribute their views. Staff participated in four hui with iwi and had ongoing engagement with Te Wai Māori Trust. DOC convened a Whitebait Working Group whose 18 members reflected the diverse interests that New Zealanders have in whitebait.

Overall, contributions were received from more than 3,000 people and organisations during this process. The online survey was completed by 2,870 respondents. Around 400 people attended a drop-in session. People who self-identified as Māori, and/or who reported the perspectives of an iwi entity, contributed approximately 200 responses. The diversity of interests in whitebait was well represented by contributors. For example, among survey respondents, similar proportions (around 45%) identified as fishers and as having environmental interests. Contributors also identified as consumer, scientist, iwi, mātauranga Māori practitioner/expert, and interested member of the public.

What did New Zealanders think?

Contributors identified issues for whitebait that fell into three categories: habitat, the fishery, and management of these species (Table 3)¹⁵. Some of the issues identified can be addressed as part of ongoing work by central and regional government, and without public consultation. Other issues identified require consultation to progress (Table 3).

Public views on different management options for whitebait can be grouped into the same categories as the issues identified for whitebait. Measures most strongly supported during the public engagement process are shown in Table 4. Contributors also identified that knowledge gaps across all three categories constrained whitebait management¹⁵.

Table 3. Major issues for whitebait recognised by contributors across DOC's public engagement process. (Source: DOC 2018). Blue: issues that will be addressed by Government work underway. Green: Issues that can be progressed without public consultation. Yellow: Issues that are included in the scope of this public consultation. White: Issues that are not considered in this consultation.

Habitat	The fishery	Management
Water quality / pollution	Non-compliance with regulations	No clear management goal / target
Loss of habitat	Ability to sell whitebait	No dedicated funding for management
Fish passage blocked	Fishing season is too long	Lack of knowledge, for example, to support / enable management
Lack of spawning sites	Fishery inadequately regulated	Management framework complex and does not adequately involve iwi
Inadequate enforcement (of habitat-related rules, consent conditions)	Inadequate enforcement of regulations	Management inconsistent with other freshwater fisheries
	Overfishing	
	Fishery not respected as shared resource	
	Lack of knowledge of fishing regulations	

Table 4. Management options for whitebait that were most strongly supported by contributors to DOC's engagement process. Options are grouped under the category of issues they address. (Source: DOC 2018). Yellow: Management options included in this consultation.

Habitat	The fishery	Management
Habitat protection and restoration	Increase enforcement of fishing regulations	More cohesive management (government, councils, iwi)
Mitigate barriers to fish passage	Temporary closure (rāhui) of some rivers to whitebaiting	Divide the fishery by sector for management
Increase enforcement relevant to whitebait habitat (such as consent conditions)	Permanent closure of some rivers to whitebaiting	Create a proper legislative framework for the sale of whitebait
	Require a licence to fish for whitebait	Science and research to address knowledge gaps
	Shorten the fishing season	
	Catch limits (such as daily limits)	
	Ban the sale of whitebait	
	Gear restrictions (for example, ban sock nets, name gear)	
	Restrict fishing where whitebait aggregate	
	Restrict fishing to specific areas in rivers	
	Ban fishing on spring tides	

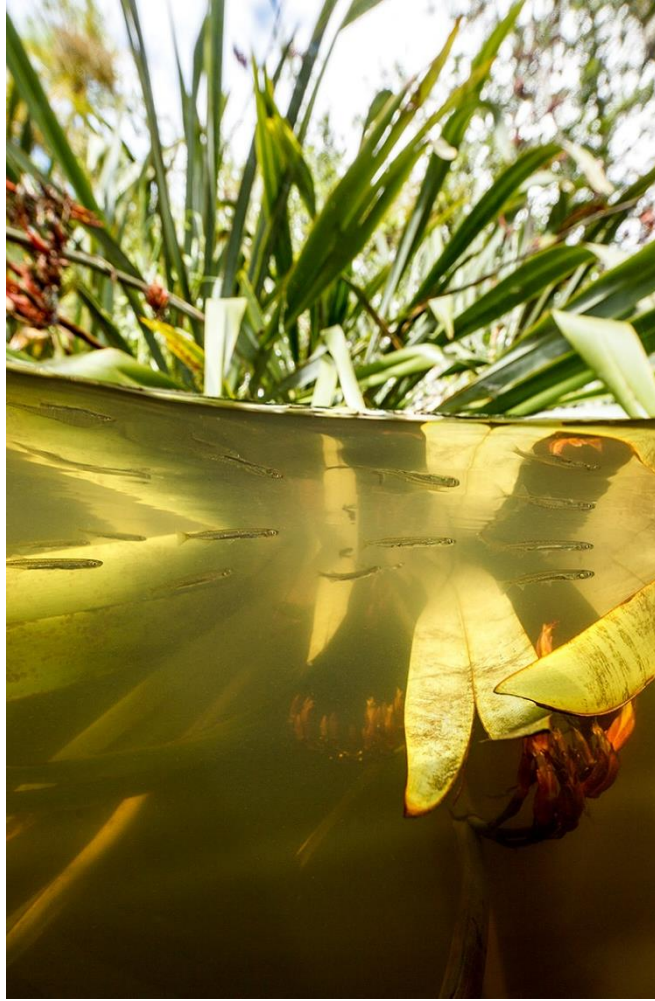


Figure 5. Above and below the water, in whitebait habitat on the Waikato River.

Part 2: This consultation | Wāhanga 2: Tēnei akoako

2.1 A management goal for whitebait | He whāinga whakahaere mō te īnanga

Feedback from public engagement highlighted that the goal for managing whitebait could usefully be clarified¹⁵. The goal must reflect the conservation of these species, and the preservation and protection of the whitebait fishery. Therefore, the following management goal is proposed for the whitebait species:

Ensure healthy and restored whitebait populations and provide for a sustainable fishery

It is proposed that key elements of this goal are qualified as set out in the following table.

Element	Interpretation
Ensure	There is confidence, supported by evidence, that whitebait populations are healthy and being restored.
Healthy and restored	Populations of whitebait species are stable or increasing over time. The status of Threatened and At Risk whitebait species, as defined by the New Zealand Threat Classification System, improves within 15 years. There is no net loss of whitebait species from their current habitats. The distribution of whitebait species is restored, for example, by restoring fish passage in waterways.
Whitebait populations	Includes all life stages (including larvae, fry, juvenile and adult fish) of īnanga, kōaro, banded kōkopu, giant kōkopu, shortjaw kōkopu, and common smelt.
Provide for	Manage both the whitebait fishery and these fish species well, and support the fishery with improved habitat management.
Sustainable fishery	Ensuring fishing does not hinder the goal of healthy and restored whitebait populations.

2.2 Achieving the management goal | Te whakatutuki i te whāinga whakahaere

To support the delivery of the management goal proposed above, and clarify the intent for managing the whitebait fishery, the following outcomes for this fishery are proposed:

Proposed outcome	Rationale
The whitebait fishery is well managed.	Management of the whitebait fishery is provided for by the Conservation Act. Good management must provide for both fishing and conservation of these species.
The fishery is managed for the recreational enjoyment of participants.	The Conservation Act requires the protection of recreational freshwater fisheries. This proposed outcome clarifies DOC's focus on managing the fishery for recreational purposes, such that the recreational experience of fishing and that all fishers catching some whitebait takes precedence over each fisher catching a large amount of whitebait.
Treaty partners are involved in the management of the whitebait fishery.	The Conservation Act must be interpreted and administered as to give effect to the principles of the Treaty of Waitangi. Treaty settlements also underpin relationships between government agencies and some Treaty partners. Whitebait are taonga for Māori, and DOC is committed to working alongside whānau, hapū and iwi to manage these species, including in the context of the fishery. Some Treaty partners report not yet having the level of involvement in whitebait management that they would like.
Fishing activity does not compromise the intrinsic value of the species and resource.	The Conservation Act requires the management of natural resources for conservation purposes. The Act defines conservation to include preservation and protection of natural resources to maintain their intrinsic values (that is, the inherent qualities and values that whitebait have as native fauna).
Options of future generations are safeguarded.	The Conservation Act defines conservation to include safeguarding the options of future generations. There are gaps in scientific knowledge about whitebait, including how much impact current threats and pressures have on these species, and the relationship between the young whitebait comprising the fishery and the ongoing viability of the populations of adult fish. DOC needs to ensure that whitebait are managed so that our impacts do not compromise the options of tomorrow's New Zealanders, including options for using and

	valuing whitebait that are not currently exercised.
Management of the whitebait fishery is nationally consistent.	The whitebait fishing regulations in place have evolved over time, with varying local and regional applications and purposes. Streamlining the regulations at a national level will reduce complexity and facilitate compliance efforts. (DOC notes that customary regulations may not be aligned with this outcome).
Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	Non-compliance can result from fishers not knowing or understanding the fishing regulations, or intentionally disregarding those regulations. Ensuring compliance with the management regime benefits all who value the fishery and these species. Non-compliance undermines the efficacy of fishery management. Conducting effective enforcement and achieving compliance is challenging in the whitebait fishery, and DOC works to improve compliance on an ongoing basis.
The fishery is well supported by habitat management.	Without suitable habitat, the whitebait species will not persist. DOC will support the whitebait fishery by continuing its own work, and working with others, to safeguard habitat for all life stages of these species. This includes advocacy work conducted under the Resource Management Act.



Figure 6. Whitebait stands on a West Coast river.

Part 3: Review of the whitebait fishing regulations | Wāhanga 3: Te arotake i ngā waeture hao īnanga

Options proposed

Feedback is sought on proposed options for amending the whitebait fishing regulations and phasing out the export of whitebait. These options are set out under a series of headings:

- What is proposed?
- What is the current situation?
- Why is this option proposed?
- How would this option work?
- Which proposed management outcomes is this option expected to contribute to?
- Alternative options considered, and
- DOC's recommended option among those proposed.

Part 4 sets out the advantages and disadvantages of each option compared to the current situation, which includes the Biodiversity 2018 work programme.

Part 5 describes the next steps after consultation, including how the regulatory options proposed for whitebait would be monitored to evaluate their success.

Part 6 includes questions about the proposed options. These questions are intended to guide feedback and the provision of additional information to inform consideration of the options.

A summary of the options proposed, how they compare to the whitebait fishing regulations currently in place, and key points of rationale is shown in Table 5.

Table 5. Summary of the regulatory proposals in this document, how they compare to the whitebait fishing regulations currently in place, and key elements of rationale. DOC's recommended options are shown with *, or as described. Further information is provided for each option in the subsequent sections of this document.

Change proposed	Options	Comparison with existing regulations	Summary rationale
Timing of the whitebait season	For New Zealand, excluding the Chatham Islands: <ul style="list-style-type: none"> • 15 August – 14 October* • 1 September – 30 October • 1 September – 15 November 	1 September – 15 November is the current season for whitebait fishing on the West Coast of the South Island. In the rest of New Zealand excluding the Chatham Islands, the whitebait season runs 15 August – 30 November.	Increase the passage of fish upstream and reduce fishing pressure, particularly during peak migration periods of whitebait species that are most Threatened or At Risk.
Nationwide upstream limits on whitebait fishing	<ul style="list-style-type: none"> • Introduce back-pegs to mark upstream limits to whitebait fishing* • Where back-pegs are not in place, whitebait fishing occurs within tidal limits* <p>(Both elements comprise DOC's recommended option).</p>	The upstream limit of whitebait fishing is defined using back-pegs and the tidal extent on the West Coast of the South Island. Around the rest of New Zealand, there is currently no upstream limit for whitebait fishing.	Whitebait would not be exposed to fishing pressure beyond back-pegs and tidal limits, so that the proportion of whitebait passing through lowland habitats and upstream would increase.
Creation of whitebait refuges in selected waterways (fishing excluded)	<ul style="list-style-type: none"> • Temporary short-term (2 years on, 2 years off) • Temporary medium-term (5 – 10 year timeframe) • Longer-term (10+ year timeframe)* 	Permanent closures to whitebait fishing are in place in some waterways on the West Coast of the South Island. Whitebait fishing is excluded from national parks and certain reserves, unless a specific permission is in place.	Excluding whitebait fishing from some waterways will provide refuges for the adults of the whitebait species and for whitebait migrating upstream from the sea. These waterways are likely to act as sources of whitebait for rivers open to fishing.
Whitebait fishing practices	<ul style="list-style-type: none"> • Phase out: <ul style="list-style-type: none"> -sock nets* -traps in nets* 	Sock nets, traps and screens may be used around New Zealand.	Reduce fishing pressure on the

	-screens and diversions*		whitebait species and bycatch species.
	<ul style="list-style-type: none"> Nationwide size and location restrictions on screens and diversions 	Regulatory provisions for screens differ between the West Coast (for example, size and placement) and the rest of New Zealand (no specific requirements).	Increase equity of catching opportunities among fishers.
	<ul style="list-style-type: none"> Fishing prohibited from structures other than stands* 	This provision is in place on the West Coast of the South Island but not elsewhere around New Zealand.	Improve consistency of the regulatory regime.
	<ul style="list-style-type: none"> Fishing prohibited within 20 m of weirs, groynes and illegal diversions* 	Fishing is prohibited within 20 m of any tide gate, flood gate, outlet pipe or culvert around New Zealand. On the West Coast, fishing is not permitted within 20 m of illegal diversions.	
	<ul style="list-style-type: none"> Nets not to be located beyond outer edge of stand* 	This provision is in place on the West Coast of the South Island but not elsewhere around New Zealand.	
	<ul style="list-style-type: none"> One net used when fishing from a stand* 	This provision is in place on the West Coast of the South Island but not elsewhere around New Zealand.	
	<ul style="list-style-type: none"> Nationwide maximum overall length limit for gear of 6 m* 	This provision is in place around New Zealand but not on the West Coast of the South Island. Other limits (such as on net size) also apply within this overall limit.	
	<ul style="list-style-type: none"> Nationwide maximum incursion of gear (excluding stands) into a waterway of one-quarter* 	This distance is currently 1/3 of the width of a waterway. (Other limits, such as gear size limits also apply within this incursion distance).	
	<ul style="list-style-type: none"> Drag net provisions to 	This provision is in place around New Zealand but not on the West	

	apply nationwide	Coast of the South Island.	
	<ul style="list-style-type: none"> Minimum fixed distance of 20 m between fixed fishing gear (not stands)* 	There is currently no minimum distance set between fixed fishing gear (excluding stands).	
Phasing out the export of whitebait	<ul style="list-style-type: none"> Phase out export of the whitebait species* 	Export of whitebait is legal.	Reduce harvesting pressure on the whitebait species (including in future, as the export market will not grow).

3.1 Timing of the whitebait fishing season | Te wā o te kaupeka hao inanga

What is proposed?

Three options are proposed to align the whitebait fishing season around New Zealand (excluding the Chatham Islands). Two of these proposals provide for a shorter fishing season of approximately nine weeks in duration. Options are:

- 15 August – 14 October (DOC’s recommended option);
- 1 September – 30 October; and
- 1 September – 15 November (the current whitebait fishing season on the West Coast of the South Island, which would be applied around New Zealand, excluding the Chatham Islands, in future).

What is the current situation?

Currently, the whitebait fishing season operates:

- 1 September – 15 November on the West Coast of the South Island;
- 1 December – the last day of February on the Chatham Islands; and
- 15 August – 30 November around the rest of New Zealand.

Within these seasons, there are time limits on the hours of whitebait fishing, to provide for day fishing only.

Why change the timing of the whitebait fishing season?

The whitebait fishery is managed as a recreational fishery. As such, it should provide reasonable access for fishers to enjoy the recreational benefits of fishing, which include landing catch. As the manager of the whitebait fishery, DOC is required to balance recreational enjoyment with the conservation of the fished species.

This measure is proposed to reduce fishing pressure on whitebait, by increasing the opportunity for these species to pass upstream when migrating (and especially during periods of peak migration). This is particularly important for whitebait species that are Threatened or At Risk.

The annual timing of peak whitebait migrations upstream is relatively well understood. These periods show some variability between years and rivers or regions⁴, with available information summarised in Table 6 below.

Data for medium to large rivers indicates that īnanga comprises most of the whitebait catch⁴. For īnanga, the peak migration period is relatively protracted (Table 6). Therefore, while īnanga is an At Risk species, a shorter season that overlaps with less of the peak upstream migration period will ensure that catching opportunities are provided for while fishing pressure is still reduced overall.

One fishing season is proposed for mainland New Zealand to simplify the regulations and facilitate compliance. The current timing of the Chatham Islands whitebait fishing season would be retained (see below).

Table 6. Summary of the timing of upstream migrations by the juveniles of whitebait species (light blue = range in migration period, dark blue = peak migration). The horizontal black lines overlay the proposed timings for a nationwide whitebait fishing season. Option (1) 15 August – 14 October, (2) 1 September – 30 October, (3) 1 September – 15 November. (Sources: Hamer 2007; Goodman 2018).

Species	Conservation status	Months							
		May	June	July	Aug	Sep	Oct	Nov	Dec
Īnanga	At Risk – Declining				1 2 3				
Kōaro	At Risk – Declining				1 2 3				
Banded kōkopu	Not Threatened				1 2 3				
Giant kōkopu	At Risk – Declining				1 2 3				
Shortjaw kōkopu	Threatened – Nationally Vulnerable				1 2 3				
Common smelt	Not Threatened				1 2 3				

In DOC’s public engagement process that took place in 2018 through early 2019, 75% of all survey respondents supported shortening the whitebait season, including 50% of fishers¹⁷. Sixty-four percent of respondents who identified as Māori supported a shorter season¹⁵.

Other feedback received during engagement included that November is less preferable for fishing, for example, because the fishing is not as good as earlier in the season, the catch of “blackbait” or “gutty” bait (fish that have been feeding in rivers and are pigmented) has increased, the fish are older, and other activities take up recreational time. A variety of proposals on timing and duration of the whitebait season were also received, for example, a four-week season, a season comprising September and October, the season starting in July or August¹⁵.

Retention of the current Chatham Islands fishing season is proposed for several reasons. Whitebaiters known to fish on the Chatham Islands are resident, and so the difference in timing with the rest of New Zealand does not cause confusion. Whitebaiting on the Chatham Islands appears not to be intensive. Further, knowledge of the timing of whitebait runs is less extensive for the Chatham Islands, and so there is no known biological benefit for changing the season.

How would a change to the whitebait fishing season work?

Any changes to the whitebait season would be specified in the future regulations for whitebait fishing. The date from which the new regulations apply would also be specified. (For example, there may be a transition period after which the new dates apply).

Which proposed management outcomes is this measure expected to contribute to?

How amending the whitebait fishing season could contribute to the proposed management outcomes is set out in the following table. All of the three options would contribute to some extent as set out below. DOC’s recommended option is expected to contribute to a greater extent than the other two options.

Proposed outcome	How this measure could contribute
The whitebait fishery is well managed.	A shorter whitebait fishing season for New Zealand (excluding the Chatham Islands) is proposed as part of a more consistent nationwide management framework for the whitebait fishery. This is intended to help ensure persistence of whitebait species, thereby contributing to the continuation of the fishery in perpetuity.
The fishery is managed for the recreational enjoyment of participants.	This measure is intended to help ensure persistence of the species, thereby contributing to the continuation of the fishery in perpetuity. A shorter season every year (that still coincides with peak inanga migration) provides ongoing whitebait fishing opportunities.
Treaty partners are involved in the	This management measure will reduce fishing pressure on Threatened and At Risk taonga species. Feedback received

¹⁷ In DOC’s engagement process, support was interpreted as respondents agreeing or strongly agreeing with an issue or option. A lack of support was defined as respondents who ticked “disagree” or “strongly disagree”. These interpretations apply to figures reported from public engagement throughout this document.

management of the whitebait fishery.	during engagement included that whitebait were not being treated appropriately as taonga.
Fishing activity does not compromise the intrinsic value of the species and resource.	A shorter whitebait fishing season is proposed as part of the future management framework for the whitebait fishery. This measure is intended to reduce fishing pressure on these species, thereby building confidence that intrinsic values can be maintained in perpetuity.
Options of future generations are safeguarded.	A shorter whitebait fishing season is proposed as part of the future management framework for the whitebait fishery. This measure is intended to reduce fishing pressure on whitebait species, thereby building confidence that the options for future generations are safeguarded.
Management of the whitebait fishery is nationally consistent.	Under the current management framework, there are three whitebait fishing seasons. Aligning seasons nationally around the main islands of New Zealand will increase consistency and simplify the management regime. No negative consequences are expected from retaining the current Chatham Islands season.
Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	Compliance education about differences in seasons will not be required when seasons are aligned. Whitebait caught illegally out-of-season in one area and represented (for example, for sale) as legal in-season catch from another area cannot be distinguished. Aligning seasons nationwide will address this.
The fishery is well supported by habitat management.	Habitat disturbance due to whitebait fishing may be reduced, with earlier recovery from disturbance enabled, if fishing occurs in a shorter timeframe.

Alternative options considered

Alternative options to amending the duration of the whitebaiting season are set out in the following table.

Alternative considered	Why this is not recommended
Opening a whitebait fishing season in alternate years (or less frequently)	<p>Feedback from public engagement included support for fishing seasons for whitebait opening in alternate years (or less frequently). Rationale provided for this approach was to support regeneration of the populations of whitebait species, and provide for fishing to continue¹⁵. This approach is another way to reduce fishing pressure on whitebait populations.</p> <p>Management of this measure would require compliance effort to ensure people did not fish in closed years. At this time, it is DOC's view that a complete closure of the whitebait fishery in alternate years on an ongoing basis is not required to achieve the proposed management goal for these species.</p>
In-season closures	During the public engagement process, contributors proposed in-season closures (for example, a two-week stand-down period during the season, and restricting fishing to certain days of the week) ¹⁵ . These measures could contribute to the overall goal of reducing fishing pressure and could be designed with consideration of peak upstream migrations. In-

	<p>season closures have not been progressed to consultation because of the consequent and ongoing increased compliance requirement. Such changes create additional complexity in the regulations; in addition to deliberate non-compliance, people may forget or not know when stand-downs are in place and when they can fish.</p>
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3.2 Nationwide upstream limits on whitebait fishing | Ngā paenga pito whakarunga puta noa i te motu mō te hao inanga

What is proposed?

Two approaches to introducing nationwide limits to the upstream extent of whitebait fishing are proposed. These are:

- introducing back-pegs to demarcate the upstream extent of whitebait fishing on selected rivers around New Zealand; and
- where back-pegs are not in place, whitebait fishing occurs within the tidal portion of waterways.

DOC's recommended option is to incorporate both of these elements into the future management regime.

Alternative options include implementing either one of the above two components.

What is the current situation?

The Whitebait Fishing (West Coast) Regulations 1994 specify limits to the upstream extent of whitebait fishing. Both back-pegs and the exclusion of whitebaiting from non-tidal areas are included in those Regulations. Back-pegs are physical markers placed at a waterway, that are identified with DOC's logo and a reference to the whitebait fishing regulations (Figure 7).

The regulations that currently apply to the rest of New Zealand do not limit the upstream extent of whitebait fishing.

Why propose nationwide upstream limits on whitebait fishing?

This measure is proposed to increase the proportion of whitebait passing through lowland habitats, so that whitebait are not exposed to fishing pressure beyond tidal limits (or upstream of back-pegs). Tidal limits are those areas within which the water level fluctuates with the tides.

Upstream limits to whitebait fishing have been in place on the West Coast of the South Island for decades¹⁸. The introduction of upstream limits to whitebait fishing around the rest of New Zealand is proposed to improve national consistency in the management regime.

¹⁸ For example, the Fisheries (West Coast Whitebait Fishing) Notice 1984.

Excluding fishing activity from specified areas is a routinely applied fisheries management tool that can be used to address a variety of objectives^{19,20,21,22}. Information available to date shows that harvesting removes 1 to 45% of the whitebait in a run⁴. Environmental factors such as river flow and tidal height, also influence the proportion of whitebait removed. Total whitebait catch increases with the number of fishers present⁴.

Prohibiting whitebait fishing in upstream habitats will provide refuges for whitebait returning from the sea. As a secondary benefit, this measure is likely to reduce one source of disturbance and damage to the spawning and adult habitat used by the whitebait species (except *inanga*²³), which can result from gear placement and fishers entering waterways (noting that other disturbances, for example, stock entry to waterways, also have impacts in this regard).

DOC did not specifically seek feedback on upstream limits in the public engagement process in 2018 through early 2019. However, some contributors provided comments supporting the implementation of upstream limits and back-pegs as part of a nationwide management framework (including West Coast fishers)¹⁵.



Figure 7. Back-peg that marks the upstream limit on whitebait fishing on the West Coast of the South Island. (Photo: A. Watson).

¹⁹ Roberts et al. (2005)

²⁰ Suski and Cooke (2007)

²¹ Worm et al. (2009)

²² FAO (2012)

²³ This species spawns within the area of tidal influence.

How would upstream limits work?

Upstream limits would provide for whitebait fishing to occur close to the coast around New Zealand. In addition to proposing to limit fishing to tidal areas, the use of back-pegs in selected fished rivers is considered particularly valuable where:

- the tidal limit is ambiguous;
- the tidal limit is extremely variable (for example, rivers with low gradient); and
- whitebaiting is particularly popular, to provide clarity about upstream limits and therefore facilitate compliance by fishers.

It would be impractical and prohibitively resource-intensive to place back-pegs on all rivers.

Which proposed management outcomes is this measure expected to contribute to?

Establishing upstream limits to whitebait fishing around New Zealand could contribute to the proposed management outcomes as set out in the following table. Either of the components proposed would contribute to some extent as set out below. DOC's recommended option of implementing both components is expected to contribute the most.

Proposed outcome	How this measure could contribute
The whitebait fishery is well managed.	Upstream limits are proposed as part of the future management framework for the whitebait fishery nationwide. This measure is intended to help ensure persistence of the species, thereby contributing to continuation of the fishery in perpetuity. There are also secondary benefits expected in terms of reducing some disturbance to spawning habitat (by focusing fisher activities downstream of the spawning habitats of some species).
The fishery is managed for the recreational enjoyment of participants.	This measure is intended to help ensure persistence of whitebait species by increasing juvenile escapement and reducing habitat disturbance on banks and in waterways. Such changes will contribute to continuation of the fishery in perpetuity.
Treaty partners are involved in the management of the whitebait fishery.	Work would continue with Treaty partners to establish upstream limits (for example, selecting rivers and locations within rivers for the placement of back-pegs).
Fishing activity does not compromise the intrinsic value of the species and resource.	This measure is intended to help ensure persistence of the species, thereby contributing to the maintenance of intrinsic values.
Options of future generations are safeguarded.	This measure is intended to help ensure persistence of the species, thereby contributing to the maintenance of options for future generations.
Management of the whitebait fishery is nationally consistent.	Under the current management framework, there are only upstream limits on whitebait fishing activity on the West Coast of the South Island. The proposal to apply this measure around the country would increase the consistency of the management regime.

Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	Nationally consistent regulations provide less complexity than when rules differ by region. This reduces the likelihood of confusion among fishers about what is allowed where. Back-pegs provide a very clear demarcation of fishing areas and non-fishing areas. On the West Coast of the South Island, non-compliance with limits set by back-pegs is very low.
The fishery is well supported by habitat management.	Disturbance to spawning habitat upstream (resulting from whitebait fishing) is avoided by focusing fishing activity downstream.

Alternative options considered

Alternatives to establishing nationwide upstream limits to whitebait fishing, are set out in the following table.

Alternative considered	Why this is not recommended
Rotational river closures	This measure provides an alternative approach to increasing whitebait escapement from fishing activity. It would involve opening and closing rivers to whitebaiting on an ongoing basis. Rotational closures are part of the management framework in the Tasmanian recreational whitebait fishery ²⁴ . Temporary river closures received broad support in public engagement (80% of survey respondents, 75% of Māori respondents, and 54% of fishers supported this measure) ¹⁵ . However, rotational closures create significant complexity for implementation, including compliance. Fishers would need to remain up-to-date on where they couldn't fish and when, and modify their fishing locations accordingly.
Voluntary closures to whitebait fishing	The proposed approach does not preclude the implementation of voluntary spatial restrictions on whitebait fishing. These may work well when strongly supported by communities. Overall, voluntary limits implemented at a national level are considered unlikely to be maintained as effectively as regulated limits on a long-term basis, for example, as their proponents move in and out of communities and start or stop whitebaiting, and new people (including visitors) enter an area to fish.

²⁴ <https://www.ifs.tas.gov.au/whitebait-recreational-fishery>

3.3 Creating short-term and longer-term refuges for whitebait species | Te hanga ruruhau mō te wā tata, haere ake nei hoki mō ngā momo inanga

What is proposed?

It is proposed that refuges for the whitebait species are created in selected waterways, from which whitebait fishing is excluded for short-term or longer periods. Three terms are proposed:

- refuges in which fishing is permitted for 2 years, then excluded for 2 years, in a repeating ongoing cycle;
- refuges in which whitebait fishing is excluded for 5 to 10 years initially and then reviewed; and
- long-term refuges that are in place for at least 10 years, and on an ongoing basis if no review is undertaken.

DOC's recommended option is for refuges to be in place long-term, to:

- enable selected waterways²⁵ to act as refuges for the adults of whitebait species on an ongoing basis;
- enable these protected adult populations to provide whitebait that contribute to runs in other rivers on an ongoing basis; and
- provide a focus for habitat improvement work which will have enduring positive impacts on these protected populations of the adults of whitebait species over time.

However, shorter-term options may be more acceptable to fishers using popular fishing rivers, or where the impacts and outcomes of excluding whitebait fishing are less certain. Therefore, a mixed model of some short-term and some longer-term refuges may be optimal, to balance conservation and fishing outcomes.

Waterways selected as refuges would be regularly reviewed and any new relevant information (for example, on the efficacy or appropriateness of the location or timeframe for the exclusion of fishing) would be considered.

What is the current situation?

Currently, whitebait fishing is excluded from national parks and certain reserves, unless a specific permission is in place. There are also rivers, creeks and wetlands on the West Coast of the South Island that are closed to whitebait fishing under the whitebait fishing regulations. Some of the West Coast closures have been in place since the 1960s, while others were introduced later, for example, the mid-1990s. Fishery sustainability and social imperatives underly the closure of some of these West Coast areas to whitebait fishing²⁶. Similar closures to whitebait fishing have not occurred elsewhere.

Why propose the creation of refuges for the whitebait species?

Areas that are already closed to whitebait fishing provide some protection for whitebait from fishing pressure. However, because closed areas are focussed on the West Coast of the South Island, conservation of biological or genetic population structure is not effectively provided for. Selecting additional waterways to act as refuges for the

²⁵ "Waterways" is used in an inclusive sense here, to encompass waterbodies in which whitebait occur (for example, including creeks, rivers, lagoons, estuaries, etc).

²⁶ McDowall (1999)

whitebait species and from which whitebait fishing is excluded would better support the long-term persistence of these fish throughout New Zealand.

Information available to-date shows that the proportion of whitebait removed by fishing varies from 1 to 45% of the whitebait in a run. Environmental factors, such as river flow and tidal height, also influence the proportion of whitebait removed⁴. Preliminary results from research underway on the West Coast of the South Island suggest that juvenile inanga densities were higher in some unfished sites than in fished sites, during the 2018 whitebaiting season²⁷. The effects of fishing are expected to vary between rivers, regions, and years due to the species present, the size of the river and the number of people fishing. Total whitebait catch is known to increase with the number of fishers present⁴.

Unlike many other species that 'home' to their natal river, whitebait may return to either their natal river, or another river to become adults and breed. Therefore, some whitebait that hatch from eggs laid in refuge rivers are expected to contribute to runs in other rivers⁴. There is some information on the extent to which the migratory galaxiid species comprising the whitebait fishery move between rivers. Movement provides enough genetic mixing to prevent the formation of new species. However, movement between rivers is not unlimited. There is emerging evidence of regional structure in whitebait populations²⁸. Therefore, local extinctions of the whitebait species may not be recoverable through recolonisations from distant sources⁴.

Excluding fishing activity from specified areas is a routinely applied fisheries management tool that can be used to address a variety of objectives^{19,20,21,22}. Regardless of what the specific relationship is between adult fish, whitebait and fishing around New Zealand, waterways with appropriate habitat will act as refuges for adults of the whitebait species, and for whitebait returning from the sea. Populations of adult fish in refuge rivers would act as sources of whitebait to augment runs in other waterways.

In public engagement conducted in 2018 through early 2019, 69% of survey respondents and 33% of fishers supported the permanent closure of more rivers to whitebait fishing. Among Māori respondents, this figure was 59%¹⁵. Temporary river closures (of undefined duration) also received broad support, from 80% of all survey respondents, 54% of fishers, and 75% of Māori respondents¹⁵.

How would refuges work?

Creating refuges for the whitebait species in each region of New Zealand is proposed, to balance the need to provide for whitebait fishing and conserve the whitebait species. Three timescales are proposed.

Waterways selected as refuges would be set out in the new whitebait fishing regulations by name and/or location (if unnamed), and time periods of whitebait fishing exclusions would be stated. At any time in future, waterway selections or time periods for whitebait fishing exclusions could be revised (by regulatory amendment) if considered appropriate, for example, review would consider any new information.

How would waterways be selected as refuges?

DOC has used existing data to create a list of waterways for consideration as refuges for whitebait species in each region. Feedback is sought on this list. It is not proposed that whitebait fishing is excluded from all of these waterways. Instead, a long list of waterways in each region is set out, to help draw out information during consultation that will guide site selection and to identify the time periods that whitebait fishing exclusions could apply. As an example, it is proposed that whitebait refuges in place in

²⁷ A. Watson, unpublished data

²⁸ Egan (2017)

the long-term are introduced on 5 to 15 rivers per region. It is also proposed that the number of waterways selected as refuges depends on the size of the region (such as, smaller numbers of refuges would be selected for smaller regions, where there may be fewer whitebaiting rivers for fishers to use).

The New Zealand Freshwater Fish Database (NZFFD) contains over 34,000 records of freshwater fish observations in streams, rivers, lakes and wetlands throughout New Zealand. This information is publicly available²⁹. Each NZFFD record typically has information about where records were collected, the fish species detected, and their abundance. Abundance is recorded as a category (rare, occasional, common or abundant) or an absolute number of fish. For this analysis the data extracted about species abundance were standardised so that both categorical data and numerical data were comparable. The total abundance per catchment was divided by the number of records to get an average abundance within the catchment.

Data were extracted from the NZFFD for the past 20 years (1999 to present) for the six whitebait species. This 20 year timeframe optimises the geographic spread of records and the use of more recent data. Sites are presented here within regions of New Zealand (delineated using regional council jurisdictions). Regional boundaries and biogeographic units (developed by considering ocean currents that facilitate larval movement) were considered to ensure sites were spread around New Zealand. It should be noted that the distribution of whitebait species is not even around New Zealand, with hot spots in some regions and species absences in other regions⁴.

Both individual species abundance and an analysis of the overlap of the six species were mapped, to visually assess the distribution (spread) of populations. The overlap of sites in which one or more of the six whitebait species occurred was conducted to identify rivers that could act as refuges for multiple species.

Characteristics of these sites are presented in appendices 1 to 16. The information provided in these appendices can also be downloaded from <https://www.doc.govt.nz/whitebait-management>. Fishing exclusions would be proposed for selected sites in these Appendices, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). As noted above, further information is sought to guide which waterways should and shouldn't become refuges from which whitebaiting is excluded. For example, information could include identifying additional whitebaiting rivers, or waterways in which spawning sites for whitebait species are known to occur.

Which proposed management outcomes is this measure expected to contribute to?

How creating refuges for the whitebait species could contribute to the proposed management outcomes is set out in the following table. All of the time periods proposed would contribute to some extent to the outcomes set out below. Short-term exclusion of whitebait fishing is expected to contribute less to conservation, compliance and habitat outcomes, compared to long-term exclusions.

²⁹ <https://www.niwa.co.nz/information-services/nz-freshwater-fish-database>

Proposed outcome	How this measure could contribute
The whitebait fishery is well managed.	Exclusion of whitebait fishing from some waterways is proposed as part of the future management framework for this fishery nationwide. This measure is intended to help ensure persistence of the species, thereby contributing to continuation of the fishery in perpetuity. Waterways selected as refuges can be reviewed if appropriate in future, for example, if new information becomes available.
The fishery is managed for the recreational enjoyment of participants.	This measure is intended to help ensure persistence of whitebait species, thereby contributing to the continuation of the fishery in perpetuity. Whitebait from waterways designated as refuges would augment runs in other rivers to some degree. A range of timeframes for fishing exclusions is proposed, to better accommodate whitebaiting.
Treaty partners are involved in the management of the whitebait fishery.	Input and knowledge of Treaty partners is sought to guide the selection of waterways that would become refuges for the whitebait species (and timeframes for fishing exclusions), under the whitebait fishing regulations.
Fishing activity does not compromise the intrinsic value of the species and resource.	This measure is intended to help ensure persistence of the species, thereby contributing to the maintenance of intrinsic values.
Options of future generations are safeguarded.	This measure is intended to help ensure persistence of the species, thereby contributing to the maintenance of options for future generations. Waterways selected as refuges can be reviewed in future as considered appropriate.
Management of the whitebait fishery is nationally consistent.	Under the current management framework, areas closed to whitebait fishing do not occur around New Zealand. Introducing refuges where whitebait fishing is excluded for specified timeframes is proposed, using site selection criteria and feedback received in consultation. This will increase the consistency of the management regime. For example, the West Coast whitebait fishing regulations currently set out areas closed to whitebait fishing, but the regulations applying to the rest of New Zealand do not.
Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	Excluding whitebaiting from selected waterways creates a new compliance and enforcement requirement. DOC's recommended option is that selected waterways are refuges for whitebait species in the long term to simplify the management regime and to provide clarity about regulatory requirements and required compliance effort.
The fishery is well supported by habitat management.	Considering the landscape setting of rivers chosen is proposed, with the aim of prioritising rivers with more adjacent protected land. This is because secure habitat is critical to the long-term persistence of adult fish of the whitebait species, and the habitat quality of rivers surrounded by protected land is expected to be more secure long term than for rivers surrounded by unprotected land.

Alternative options considered

The following alternatives to the proposal set out for creating refuges for whitebait species were considered.

Alternative considered	Why this is not recommended
Rotational river closures	<p>This would involve opening and closing different rivers to whitebaiting on an ongoing basis. Rotational closures are part of the management framework in the Tasmanian recreational whitebait fishery³⁰ and were raised during public engagement¹⁵.</p> <p>Rotational closures create significant complexity for implementation, such as, determining which rivers would be opened or closed on an ongoing basis, and how long closures would apply for. Fishers would need to maintain current knowledge of which rivers were open and closed in each season, and move between rivers accordingly.</p> <p>Because of these complexities, rotational closures were not progressed to consultation.</p>
Opening a whitebait fishing season in alternate years	<p>Feedback from public engagement included support for the nationwide fishing season for whitebait opening in alternate years (or less frequently)¹⁵. Rationale provided for this approach was to support regeneration of the populations of whitebait species, and provide for fishing to continue.</p> <p>This approach is another way to reduce fishing pressure on whitebait populations. For īnanga, which usually live for only one year and also comprise most of the whitebait catch, there is very little benefit of having whitebait seasons in alternate years. Longer intervals would be more beneficial.</p> <p>Management of this measure would require compliance effort to ensure people did not fish in closed years. At this time, it is DOC's view that a complete closure of the whitebait fishery in alternate years on an ongoing basis is not required to achieve the proposed management goal for these species.</p>
In-season closures	<p>During public engagement¹⁵, contributors proposed in-season closures (for example, a two-week stand-down period during the season, and restricting fishing to certain days of the week). In addition, 61% of survey respondents (including 53% of Māori) supported closures around spring tides. There is rationale to support these measures, such as, maximising genetic diversity in fished rivers by ensuring cohorts from different whitebait runs can access and occupy upstream habitat, and increased fishing pressure around spring tides⁴. However, in-season closures have not been progressed to consultation because of the increased and ongoing compliance requirement. Day-to-day or week-to-week changes create additional complexity in the regulations; in addition to deliberate non-compliance, people may forget or not know which days they can fish.</p>

³⁰ <https://www.ifs.tas.gov.au/whitebait-recreational-fishery>

Voluntary closures to whitebait fishing	<p>The proposed approach does not preclude the implementation of voluntary closures and these may work well when strongly supported by communities.</p> <p>Overall, voluntary closures are considered unlikely to be maintained as effectively as regulated fishing exclusions, for example, because proponents of voluntary closures would move in and out of communities and start or stop whitebaiting over time. Also, new residents in communities may have different views, and visiting fishers may choose not to adhere to a voluntary closure.</p> <p>When voluntary closures are implemented, they are unlikely to be at a nationwide scale required to enhance the persistence of whitebait species populations over time.</p>
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3.4 Whitebait fishing practices | Ngā ritenga hao īnanga

What is proposed?

DOC is proposing to restrict the use of some fishing practices that enable or facilitate a fisher to readily catch high volumes of whitebait, while still providing for a range of fishing gear to be used. Elements that together comprise DOC's recommended option are identified with * below. However, all of the elements set out below could also be implemented independently, or in a variety of combinations.

Specific changes proposed are to:

- phase out sock nets*;
- phase out traps in nets*;
- phase out screens (and prohibit diversions)*; or,
- implement nationwide size and location restrictions on the use of screens and diversions
 - screens (including screens deployed from stands) may not exceed a total length of 3 m
 - screens may only:
 - extend from the water's edge or margin of riparian vegetation extending into the water, or,
 - be used in conjunction with a whitebait stand
 - screens may be used only on the bank side of any whitebait net, and may not be set beyond the outer limits of a stand;
 - other than screens, nothing may be used to influence whitebait movement (for example, to divert whitebait into a net). This includes not placing a net to divert whitebait into another net;
- prohibit fishing for whitebait from structures other than stands (that are subject to the Resource Management Act 1991)*;
- prohibit fishing for whitebait within 20 m of weirs, groynes and illegal diversions*;
- require that nets may not be located beyond the outer edge of a stand*;
- one net to be used when fishing from a whitebait stand*;

- implement a maximum overall length limit of 6 m for fishing gear used to take whitebait (excluding spotter boards) nationwide, within which other limits apply (such as the limit on net size)*;
- revise the current regulations that provide for fishing gear (excluding stand structures) to span one third of the width of a waterway, to provide for gear to span up to one quarter of the width of a waterway*;
- apply the current provisions for drag nets in the whitebait fishing regulations (excluding the West Coast) nationwide; and
- set a specified minimum distance of 20 m between fixed fishing gears (not stands) that span one third of a waterway (so that no part of any two fishers' gear of this type may be less than 20 m of each other)*³¹.

What is the current situation?

Among all gear types, sock nets, screens and traps were most commonly identified by contributors to public engagement as problematic because they enable large catches of whitebait with minimal effort¹⁵. Some also retain catch including if whitebaiters are not present to monitor gear (for example, overnight, or because they are running more than one net).

Sock nets

Sock nets are a type of passive fishing gear that many consider to be a particularly efficient way to catch whitebait. This efficiency can result in catching a large amount of whitebait with minimal effort (Figure 8). (A trap or traps may also be located inside the sock net. Traps are considered separately below). Some fishers report that the only way they feel they can compete for catch with sock net users is to use the same gear themselves. Sock nets may be left in place in waterways for extended periods, during which the nets keep fishing. Such situations can lead to the death of fish, including non-target species, because these are not cleared from nets sufficiently frequently. The ability to set nets in waterways to fish passively also means a fisher can readily leave the net unattended and may encourage the use of more than one net per fisher (which does not comply with the whitebait fishing regulations).

Traps

Traps inside nets prevent whitebait swimming out after capture (Figure 8, Figure 9). Therefore, they facilitate large catches of whitebait and enable fishers to not monitor gear but still catch fish. The use of traps has, at times, been linked to the prevalence of offences relating to unattended gear and the simultaneous use of multiple sets of gear (which does not comply with the whitebait fishing regulations)³².

Screens

Screens facilitate whitebait catch by directing whitebait from a broader area of a waterway towards the open net (Figure 9). Currently provisions for the use of screens differ between the West Coast regulations for whitebait fishing and the regulations that apply to the rest of New Zealand.

The West Coast regulations include provisions for a maximum size of screens (3 m, unless deployed from a licensed structure) and for where they must be placed in the river (extending from the water's edge, on the bank side of the net, so that, screens cannot be deployed from the net outwards to mid-river, and cannot be extended

³¹ Note that if the proposal to amend this one-third span to one-quarter is progressed (as above), the 20 m distance would still apply.

³² DOC (1990)

outward of a licensed structure). The West Coast regulations also prohibit the use of diversions other than screens.

Around the rest of New Zealand, there are no specific requirements for screens or diversions.

Fishers and other river users cite concerns with screens including prolonged extensions into rivers (when screens are used in association with a licensed structure on the West Coast), illegal modification of riverbanks to secure screens, and debris in rivers when screens wash away during floods and are (illegally) left in place after the season.

Fishers report that access to fishing spots and catch becomes particularly problematic when large screens are in place. In such circumstances, whitebait escapement upstream also becomes increasingly difficult.

Fishing prohibited from structures other than stands

This provision is in place in the West Coast regulations for whitebait fishing. It is not in place around the rest of New Zealand. (Stands themselves are subject to the Resource Management Act 1991).

Fishing prohibited within 20 m of weirs, groynes and illegal diversions

Currently, regulations applying across New Zealand prohibit fishing within 20 m of any tide gate, flood gate or culvert. This regulation is also interpreted as including piped outlets, which has been unclear to fishers in some locations (for example, at Washdyke Creek, near Timaru).

The 20 m prohibition is in place because whitebait congregate around these structures.

On the West Coast of the South Island, fishing for whitebait is not permitted within 20 m of an unlawful diversion. This provision does not currently apply to the rest of New Zealand.

Nets not to extend beyond whitebait stands

This provision is in place in the West Coast regulations for whitebait fishing. It is not in place around the rest of New Zealand. Where this measure is not in place, the reach of any stand into a waterway could functionally be extended by the length of the net used.

One net to be used when fishing from a whitebait stand

This provision is already in place on the West Coast of the South Island, but not around the rest of New Zealand. Using multiple nets on a stand increases fishing pressure on whitebait.

Inclusive length limit for fishing gear

The current whitebait fishing regulations include various gear specifications, for example, net mouth, net length, framing width. The regulations for most of New Zealand (excluding the West Coast) also specify the legal dimensions of drag nets, and a maximum overall length of fishing gear. Fishing gear includes nets, ropes, screens, and anything else used for the purposes of taking whitebait. It does not include whitebait stands or spotter boards.

The maximum length of fishing gear that applies in most of New Zealand (excluding the West Coast) is currently 6 m. Within this overall limit, other limits apply (such as the limit on net size). Again, this maximum does not include whitebait stands.

Fishing gear to span up to one-quarter of a waterway

The whitebait fishing regulations currently provide for fishers to set or use fishing gear that spans up to one-third of a waterway. Within this limit, other limits also apply (such as maximum net dimensions) such that the gear used must fall within all limits.

This is inconsistent with the Fisheries (Amateur Fishing) Regulations 2013, made under the Fisheries Act 1996 for species other than whitebait. Those regulations provide for the

setting or use of nets to extend up to one-quarter of the width of a waterway (during fishing that is not for commercial purposes).

Extend the current provisions for drag nets nationwide

Drag nets (Figure 10) are an active fishing gear currently provided for in the whitebait fishing regulations that apply to New Zealand excluding the West Coast of the South Island. (Note that drag nets are defined in the current whitebait fishing regulations, and in the Glossary to this document).

Minimum distance between fixed gears that span one-third of a waterway

The current regulations for whitebait fishing do not specify any minimum distances between fishing gear (excluding when fishing near stands on the West Coast). Some contributors to public engagement proposed that a minimum distance between fishers is introduced, for example, to provide for fairer access to catch and to address the “staggering” of whitebait gear. Staggering is when gear extending one-third of a waterway is set on opposite banks but in close proximity, so that functionally whitebait passage is blocked across two thirds of a waterway (Figure 11). This practice also reduces the access of fishers upstream to passing fish.

The proposed distance of 20 m is analogous to the current regulations. Currently, 20 m is the limit within which whitebaiting is allowed near areas where whitebait congregate, for example, where two or more waterways converge, culverts, and tide gates.

Prescribing distances between fishers using mobile gear is considered impractical.

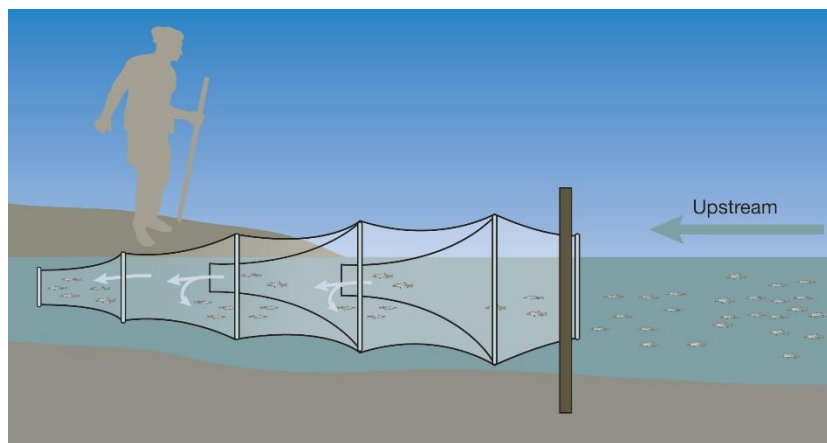


Figure 8. Schematic diagram of a sock net with two traps. The traps retain catch inside the net.

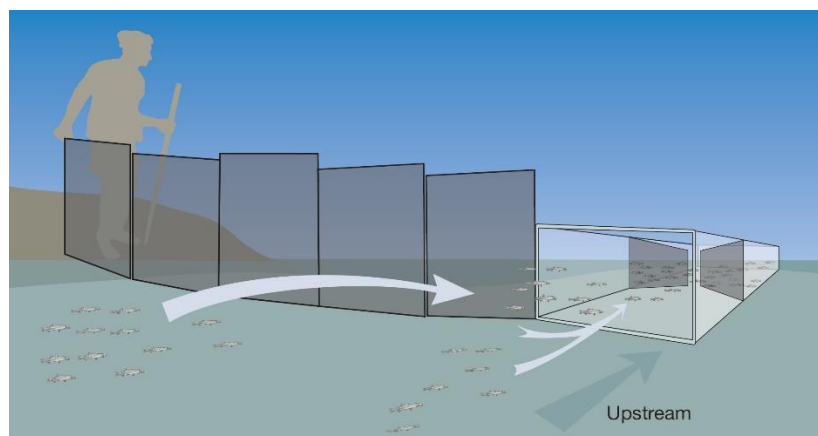


Figure 9. Screens set in a waterway to direct whitebait into a net fitted with a trap.

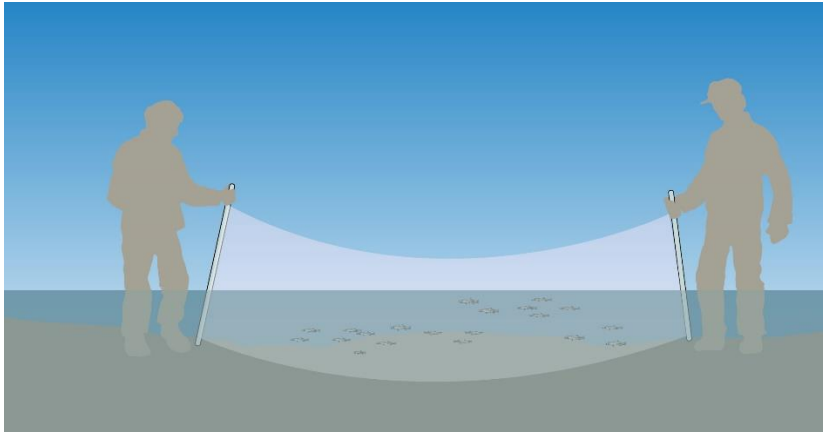


Figure 10. Example of one form of a drag net for whitebait fishing.

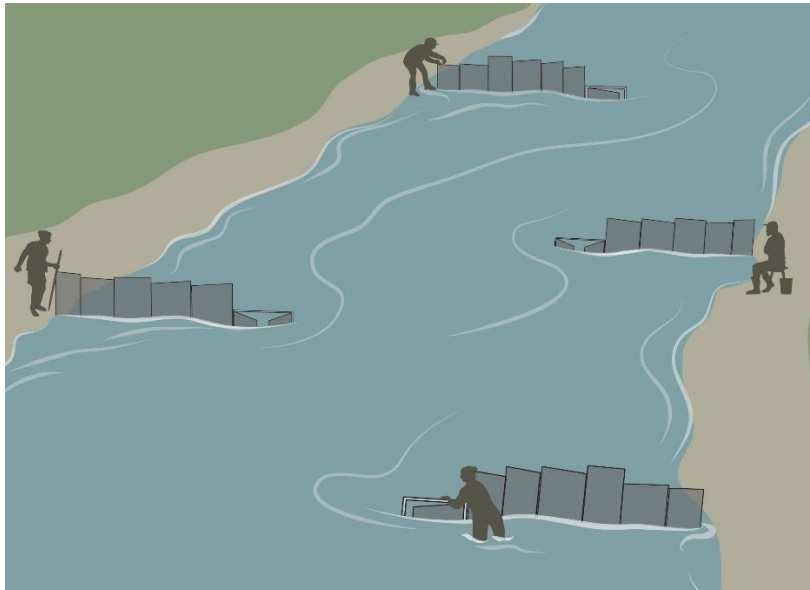


Figure 11. Whitebait fishing gear set from both riverbanks with a staggered layout, such that whitebait passage is blocked across two thirds of a waterway.

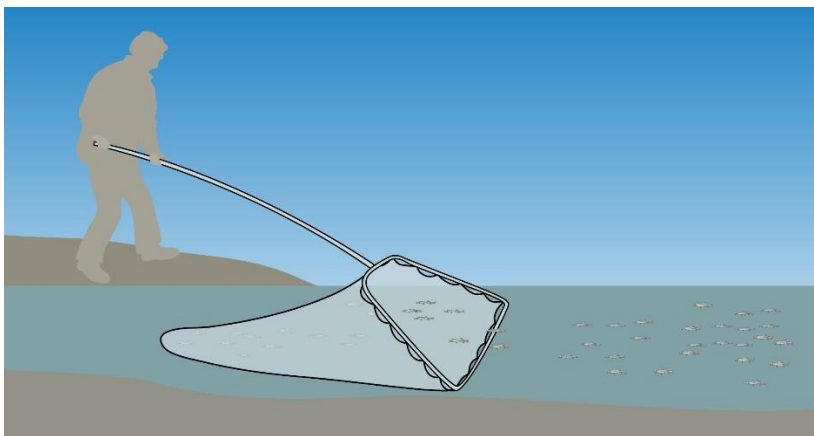


Figure 12. A scoop net used for whitebait fishing.

Why propose to amend whitebait fishing practices?

Fishing gear used for whitebaiting is diverse; store-bought gear and homemade rigs are both in extensive use. Proposals are focused on providing for a variety of fishing gear to be used, ensuring fishers who must share fishing grounds have reasonable access to fishing spots and catch, and avoiding undue impacts on fished and bycatch species (Table 7).

During public engagement, 78% of all survey respondents, 56% of fishers, and 71% of Māori respondents agreed or strongly agreed that there should be more restrictions on gear used to fish for whitebait. Contributors highlighted their perception that in addition to facilitating the capture of large amounts of whitebait, sock nets, traps, large screens and gear staggered along rivers had negative impacts on access to catch by other fishers. The inconsistency of rules around stands nationwide was also highlighted¹⁵.

Non-target species are also caught in whitebait nets³³. This includes a variety of freshwater fish, some of which are Threatened species (Table 7). Gear that increases the likelihood that non-target species would escape or be released alive is preferred.

Table 7. Non-target species that are known to be caught in whitebait fishing nets. At Risk and Threatened species are shown with %. Blue = native predominantly freshwater fish species, grey = introduced species, green = indigenous estuarine and marine species. Adults of the six whitebait species may also be caught in whitebait fishing gear. (Source: McDowall 1972; DOC, unpublished).

Non-target species caught in whitebait fishing gear	
Stokell's smelt (<i>Stokelia anisodon</i>)% (Canterbury rivers only)	Brown trout (<i>Salmo trutta</i>)
Redfin bully (<i>Gobiomorphus huttoni</i>)	Quinnat salmon smolt (<i>Oncorhynchus tshawytscha</i>) (South Island only)
Bluegill bully (<i>G. hubbsi</i>)%	
Common bully (<i>G. cotidianus</i>)	Kahawai (<i>Arripis trutta</i>)
Giant bully (<i>G. gobioides</i>)%	Sprat (<i>Clupea antipodum</i>)
Upland bully (<i>G. breviceps</i>)	Anchovy (<i>Engraulis australis</i>)
Torrentfish (<i>Cheimarrichthys fosteri</i>)%	Yellow eyed mullet (<i>Aldrichetta forsteri</i>)
Lamprey (<i>Geotria australis</i>)%	Black or river flounder (<i>Rhombosolea retiara</i>)
Longfin eel (<i>Anguilla dieffenbachii</i>)%	
Shortfin eel (<i>A. australis</i>)	

Sock nets

Contributors to public engagement highlighted concerns about the unselective nature of sock nets, the accumulation of large catches, the lack of fisher involvement in fishing, sock nets being set for extended periods, and bycatch not being released. Feedback included concerns about sock nets being used at all, and advocacy for a nationwide or regional/river-based bans¹⁵.

³³ McDowall (1972)

Traps

For traps, some similar concerns were raised, including the passive nature of fishing and that when traps were in place, fishers did not need to attend their nets¹⁵. As for sock nets, catch can accumulate unmonitored and multiple nets can be set, leading to large catches and unnecessary mortalities of unwanted catch.

Screens

Screens were seen by fishers as limiting participation in the fishery where these take up large sections of rivers. As well as supporting the prohibition of screens and limits on screen sizes, contributors to public engagement proposed sizes of 1 m and 2 m for screens¹⁵. Diversions are included in this proposal as they are intended to function similarly to screens, to control the movement of whitebait (and divert them towards a net).

Fishing prohibited from structures other than stands

This provision would address the creation of other structures that are intended for use as whitebait stands, and fishing from structures that were not intended for that purpose.

Fishing prohibited within 20 m of weirs, groynes and illegal diversions

Prohibiting fishing within 20 m of weirs, groynes and unlawful diversions is proposed to provide consistency with existing regulations for other human-made structures where whitebait aggregate.

Through time, restrictions relating to the structures around which fishing may not occur have changed (sometimes for reasons that are unclear). Conceptually, the key element has remained that whitebait fishing should not occur near human-made structures around which whitebait aggregate³⁴.

Nets not to extend beyond whitebait stands

Beyond the West Coast of the South Island (where this measure is already in place), the reach of any stand into a waterway could currently functionally be extended by the length of the net used. This is not aligned with the intent of regulations to provide for whitebait passage upstream.

One net to be used when fishing from a whitebait stand

Overall, the use of multiple nets from stands decreases the likelihood of whitebait escapement upstream by increasing the fishing effort. Addressing the lack of consistency between the West Coast regulations and the rest of New Zealand would align with the intent to provide for whitebait escapement upstream.

Inclusive length limit

An overall 6 m length limit on gear is proposed, for example, including pulleys, ropes, nets and screens, and gear deployed from stands, but excluding physical stand structure. This is proposed to address the issues created by ghost nets (these are nets that make fishing possible in areas a considerable distance away from riverbanks) and large fishing gear setups, to balance fisher access to fishing opportunities and catch, and escapement of whitebait upriver to perpetuate the species. This limit is in place in most of New Zealand already.

Minimum distance between fixed gears that span one-third of a waterway³¹

DOC proposes to specify a distance between fishing gear (not stands) extending one-third of the width of a waterway, to address the issue of "staggering", where gear is set on opposite sides of waterways in close proximity such that functionally two thirds of a waterway is effectively blocked to whitebait passage.

³⁴ For example, the 1964 whitebait fishing regulations.

Fishing gear to span up to one-quarter of a waterway

The existing provision in the whitebait fishing regulations for gear to extend up to one-third of the width of a waterway is broadly based on balancing the ability of fishers to catch whitebait and the ability of whitebait to pass fishing gear and move into adult habitat. One-quarter would, on average, provide for greater escapement of whitebait than one-third (while the precise difference in escapement between the one-third and one-quarter limits expected to vary between rivers, runs of whitebait and with environmental conditions).

Extend the current provisions for drag nets nationwide

This is proposed to improve nationwide consistency in the whitebait fishing regulations.

How would amending the suite of regulated whitebait fishing practices work?

Using feedback from this consultation, DOC would formulate its final recommendations on the suite of fishing practices recommended for the future whitebait fishery. A timeframe would also be developed to phase in the new requirements. As noted above, the focus when considering these measures is on ensuring a range of fishing methods are available to whitebait fishers, while balancing fishing impacts on whitebait and non-target native fish species.

Phasing in the new requirements would also involve addressing areas of inconsistency in the current regulations, such as the definitions they contain. For example, the definition of "fishing gear" is inconsistent between the two sets of whitebaiting regulations.

Which proposed management outcomes is this suite of measures expected to contribute to?

How the measures above would contribute to the proposed management outcomes is set out in the following table. All of the elements set out above would contribute individually to some extent. Implementing all elements comprising DOC's recommended option is expected to contribute the most.

Proposed outcome	How these measures could contribute
The whitebait fishery is well managed.	There was strong public feedback from engagement that management of whitebait and the whitebait fishery needs to improve ¹⁵ . The measures proposed above address some of the issues highlighted during engagement, including those most frequently raised.
The fishery is managed for the recreational enjoyment of participants.	The suite of measures proposed incorporates suggestions and feedback from fishers concerned about recreational whitebaiting opportunities, including access to catch among fishers.
Treaty partners are involved in the management of the whitebait fishery.	Feedback received during engagement included that whitebait are not being treated appropriately as taonga ¹⁵ . The proposed suite of measures would reduce fishing pressure on whitebait and non-target fish (including other taonga species).
Fishing activity does not compromise the intrinsic value of the species and resource.	As part of an improved management framework for whitebait, the measures proposed are intended to maintain the whitebait fishery while not compromising intrinsic values of these species.

Options of future generations are safeguarded.	The focus in developing these proposals is on ensuring a range of fishing methods are available to whitebait fishers, and balancing fishing impacts on whitebait and non-target fish species. This approach is expected to contribute to safeguarding options for future generations.
Management of the whitebait fishery is nationally consistent.	The proposals described include addressing inconsistencies between the whitebait fishing regulations that currently apply to the West Coast, and those that apply to the rest of New Zealand.
Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	Compliance with the whitebait fishing regulations is expected to be more straightforward, as inconsistencies between the two sets of regulations are addressed and the rationale of regulatory provisions is better understood. Phasing out gear that enables the passive accumulation of large catches is expected to lead to increased compliance, as the ability to set multiple nets that will retain larger volumes of catch over longer periods is reduced.
The fishery is well supported by habitat management.	This set of proposals is focused on catch and whitebait escapement, not specifically habitat management. However, different gear types would be expected to have different impacts on waterways.

Alternative options considered

Two alternative options were considered, as set out in the following table.

Alternative considered	Why this is not recommended
Rules around whitebait stands	<p>Stands have always been a controversial element of the whitebait fishery; they are perceived by some fishers as enabling unfair access to whitebait¹⁵. When created in 1987, DOC became responsible for licence requirements relating to whitebait stands. With the Resource Management Act 1991, the responsibility for stands was transferred to Councils, for example, requiring a consent application for the placement of stand.</p> <p>Contributors to the public engagement process provided extensive feedback on stands¹⁵. DOC can work with councils on whitebait stands as part of its ongoing working relationships. For example, proposals for changes to the management of whitebait stands can be progressed through coastal planning processes. Therefore, proposals specifically relating to whitebait stands are not included in this consultation (for example, the number of stands and their locations).</p>
Voluntary changes to gear used by whitebait fishers	<p>Fishers are free to choose the gear they use within what is provided for by the whitebait fishing regulations. There is also scope for additional voluntary changes to whitebait fishing gear used, which could be coordinated through local and regional efforts.</p> <p>This consultation does not preclude additional local and regional controls being implemented on a voluntary basis. However, voluntary initiatives are considered unlikely to be</p>

	as enduring, or to take effect, at a comparable scale to regulatory measures.
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3.5 Phasing out the export of whitebait | Te āta whakakore i te hokohoko ki tāwāhi o te inanga

What is proposed?

Phasing out the export of all life stages of the whitebait species is proposed.

DOC's recommended option is to end the export of the whitebait species from when new legislation for this comes into effect.

What is the current situation?

Whitebait is exported to a small number of countries annually.

Why propose to phase out the export of whitebait?

Exports of frozen and chilled whitebait are reported, for example, to Australia and the Pacific (Table 8). Export prices varied from \$15 to \$183/kg. Export volumes have decreased since 2016. The export market for whitebait appears small. Addressing export while the market is small and not growing avoids a future export-driven increase in fishing pressure on these native species.

Table 8. The quantity and destination of whitebait exported from New Zealand, 2015 to 2018. FOB = Free on board (The value of export goods, including raw material, processing, packaging, storage and transportation up to the point where the goods are about to leave the country as exports. (Sources: Seafood New Zealand (2015, 2016, 2017, 2018)).

Year	FOB value / kg (NZD)	Export destinations (in order of quantity received, highest to lowest)	Quantity (kg)
2015	\$15 - \$95	Hong Kong, Australia, Cook Islands, Niue, Vanuatu, Papua New Guinea	1,207
2016	\$20 - \$183	Australia, Hong Kong, Niue, Cook Islands, Papua New Guinea	2,058
2017	\$47 - \$182	Australia, Hong Kong, Samoa, Cook Islands, New Caledonia, Fiji	1,374
2018	\$29 - \$104	Australia, Cook Islands, Niue	1,092

How would phasing out the export of whitebait work?

It is proposed that the export of the whitebait species would end when new legislation for this comes into effect.

Which proposed management outcomes is this measure expected to contribute to?

How phasing out the export of the whitebait species would contribute to the proposed management outcomes is set out in the following table.

Proposed outcome	How this measure could contribute
The whitebait fishery is well managed.	This measure will ensure that an export market does not incentivise catches of the whitebait species.
The fishery is managed for the recreational enjoyment of participants.	This measure will ensure that an export market does not incentivise catches of the whitebait species.
Treaty partners are involved in the management of the whitebait fishery.	Feedback received during engagement included that whitebait species are not being treated appropriately as taonga ¹⁵ . Among Treaty partners and Māori, some responders considered that sale of whitebait should cease temporarily or permanently. Addressing the export market is one component of the commercial activity around the whitebait species, which can be addressed with a low level of impact on existing businesses.
Fishing activity does not compromise the intrinsic value of the species and resource.	This measure will ensure that an export market does not incentivise catches of the whitebait species.
Options of future generations are safeguarded.	This measure will ensure that an export market does not incentivise catches of the whitebait species.
Management of the whitebait fishery is nationally consistent.	This measure would be applied nationwide.
Compliance with the management regime is the norm and the extent and severity of non-compliance does not increase over time.	This measure will ensure that export does not incentivise harvest of the whitebait species. Non-compliance is incentivised by any factor that encourages high per-fisher catches.
The fishery is well supported by habitat management.	Ending export is not expected to have a significant impact on this outcome.

Alternative options considered

Alternatives to ending the export whitebait species are set out in the following table.

Alternative considered	Why this is not recommended
Implementing catch limits for whitebait	<p>Catch limits are a common fisheries management tool for controlling harvest²². Setting biologically relevant catch limits for whitebait would be guesswork, based on current knowledge. Further, for this management measure to be an alternative to ending whitebait catch for export, an export-specific catch limit would be required, which would be impractical to implement.</p> <p>In Tasmania, catch limits are part of the management framework³⁵. The limits are 2 kg per day and 10 kg per season. Enforcement of these limits is facilitated by the relatively small number of rivers in which whitebaiting can take place (14 rivers in 2019).</p> <p>Catch limits for whitebait were strongly supported by contributors to the public engagement process. Eighty-three percent of all survey respondents and 73% of Māori respondents supported the implementation of a catch limit for whitebait. Sixty-one percent of fishers supported catch limits¹⁵.</p> <p>Given the enormous number of locations in which whitebait fishing can occur in New Zealand, enforcing catch limits effectively would be impossible. DOC's preference is to apply other measures to manage whitebait catch, rather than implementing a limit that would be impossible to enforce. Therefore, catch limits (of any sort) are not included in this consultation.</p>
Phasing out export of wild-caught whitebait	<p>The export of aquacultured whitebait would not create pressure on the wild populations of these fish species. Therefore, an alternative option to phasing out export completely is to limit export to whitebait that are harvested from closed-cycle aquaculture. Distinguishing wild-caught and aquacultured whitebait is problematic. Therefore, for this measure to be implemented effectively, an appropriate administrative, reporting, monitoring and compliance framework would need to be established. Creating this framework would involve costs.</p>

³⁵ <https://www.ifs.tas.gov.au/whitebait-recreational-fishery>



Figure 13. A West Coast whitebaiter's hut, with whitebait stands and screens used to direct these fish into the waiting nets.

Part 4: Advantages and disadvantages of regulatory change proposals | Wāhanga 4: Ngā huanga me ngā taumahatanga o ngā marohi panoni waeture

Timing of the whitebait fishing season

Advantages and disadvantages of maintaining the current situation, and of amending the timing of the whitebait fishing season in some or all of New Zealand, are summarised in the following tables. If Option 1 or 2 is implemented, the advantages and disadvantages of amending the season apply around New Zealand’s main islands. If Option 3 is implemented, the current situation will continue for the West Coast of the South Island, and the advantages and disadvantages of amending the season would apply to elsewhere around the main islands of New Zealand.

Continuing the current situation	
Disadvantages	Advantages
To Whitebait Fishers	
Because of fishing pressure at key life stages, including on the young of Threatened and At Risk species, there is less certainty about the long-term security of whitebait species, and consequently the whitebait fishery.	No immediate change to fishing periods required.
To Government	
Lack of response to public feedback and biological information on the peak spawning periods of Threatened and At Risk species means that public confidence in the management regime does not increase. As fishery manager, DOC is less likely to effectively deliver on its responsibilities. Current compliance issues distinguishing illegal out-of-season catch and legal in-season catch continue at scale.	No additional compliance or education requirement.
To the Public	
Long-term security of whitebait species is less certain, because fishing pressure on the young of Threatened and At Risk species is not managed optimally. Options of future generations may be less effectively safeguarded.	None.

Amending the timing of the whitebaiting season	
Disadvantages	Advantages
To Whitebait Fishers	
The duration of the fishing season is less than currently (in some areas or around the main islands of New Zealand).	<p>Annual fishing seasons are maintained at times of peak migration for juvenile īnanga (which comprise the bulk of the whitebait catch).</p> <p>Higher intensity compliance effort will be enabled during a shorter season, thereby better maintaining the integrity of the management regime and fairness to fishers who follow the rules.</p>
To Government	
Education on the new rules would be required when first introduced.	<p>Compliance effort can be more focused in a shorter timeframe.</p> <p>Delivery on management responsibilities for whitebait and the fishery is improved.</p> <p>Public confidence in the management regime increases.</p>
To the Public	
None.	<p>Public confidence in the management of whitebait increases, because management is based on clear rationale which considers species life history and conservation status, and is consistent around mainland New Zealand.</p> <p>Feedback from public engagement includes reports of hostility and threats from some whitebaiters, and pollution by fishers on-site. A shorter season in areas where such user conflicts arise would provide for improved and safer recreational experiences.</p>

National upstream limits to whitebait fishing

Advantages and disadvantages of maintaining the current situation, and of introducing national upstream limits to whitebait fishing, are summarised in the following tables. The advantages of introducing upstream limits would apply at a lower level if just one component is implemented, and more so if both elements are implemented.

Continuing the current situation	
Disadvantages	Advantages
To Whitebait Fishers	
<p>Fisher confidence that compliance can be effectively monitored will not increase.</p> <p>Long-term security of whitebait species, and therefore the whitebait fishery, may be less certain.</p>	<p>No immediate change to fishing locations required.</p>
To Government	
<p>Public confidence in the management regime does not increase, because of a lack of response to public feedback to improve whitebait management.</p> <p>As fishery manager, DOC is less likely to effectively deliver on its responsibilities.</p>	<p>No additional compliance or education requirement.</p>
To the Public	
<p>Long-term species persistence, and the options of future generations, are less likely to be safeguarded.</p> <p>Confidence that compliance can be effectively monitored will not increase.</p>	<p>None.</p>

Nationwide upstream limits to whitebait fishing	
Disadvantages	Advantages
To Whitebait Fishers	
Some fishers may need to relocate their fishing activity elsewhere. Some sites may become congested at peak fishing times.	<p>Upstream limits are expected to help ensure the persistence of whitebait species, by increasing escape of young fish and reducing potential disturbance to spawning habitat.</p> <p>Fishing regulations are simplified and nationally consistent.</p> <p>If most fishers comply with spatial limits, other elements of whitebait fishery compliance work would become focussed within tidal areas and downstream of back-pegs. This would improve the efficacy of enforcement.</p>
To Government	
<p>Compliance effort is required to ensure fishers respect limits, especially where these have not previously been in place. The additional effort required would be expected to decrease over time as fishers get used to the rules.</p> <p>Education on the new rules would be required.</p>	<p>Delivery on management responsibilities for whitebait and the fishery is expected to improve over time.</p> <p>Public confidence in the management regime increases if compliance with the management regime improves, and the government is seen to be responsive to public feedback to improve whitebait management overall.</p>
To the Public	
If introducing upstream limits to whitebait fishing results in fishers moving to other areas used by the public, congestion may result in some recreational areas at peak fishing times.	Public confidence in the management regime increases (as above).

Creating refuges for the whitebait species in selected waterways

Advantages and disadvantages of maintaining the current situation, and of creating refuges for the whitebait species in selected waterways (with the exclusion of whitebait fishing for variable timeframes), are summarised in the following tables. The advantages of introducing refuges are expected to be maximised when fishing is excluded on a long-term basis.

Continuing the current situation	
Disadvantages	Advantages
To Whitebait Fishers	
<p>Long-term security of whitebait species, and therefore the whitebait fishery, is less certain. This is because there is no cohesive spatial management regime that includes refuges for the whitebait species.</p> <p>The management regime is inconsistent around New Zealand.</p>	<p>No immediate change to fishing locations.</p>
To Government	
<p>Public confidence in the management regime does not increase, because Government has not responded to public feedback to improve whitebait management (including support for excluding whitebait fishing from selected waterways).</p> <p>As fishery manager, DOC is less likely to effectively deliver on its responsibilities.</p>	<p>No additional compliance or education requirement.</p>
To the Public	
<p>Long-term species persistence, and the options of future generations, are less likely to be safeguarded without refuges for adults of the whitebait species.</p>	<p>None.</p>

Creating refuges for the whitebait species in selected waterways	
Disadvantages	Advantages
To Whitebait Fishers	
Where fished rivers are affected by fishing exclusions, fishers would need to relocate their activity elsewhere. Some sites may become congested at peak fishing times.	Waterways identified as refuges would act as sources of whitebait that augment runs in other rivers, and are expected to help ensure species persistence.
To Government	
Compliance effort is required to ensure the integrity of fishing exclusions in selected areas. Education on the new rules would be required, especially when first introduced.	Delivery on management responsibilities for whitebait and the fishery is improved. Public confidence in the management regime increases with actions taken by Government to provide refuges for some adult populations of the whitebait species.
To the Public	
If excluding whitebait fishing from some waterways results in fishers moving to other areas used by the public, there may be congestion in some recreational areas at peak fishing times.	Waterways where whitebait fishing is excluded can still be used freely by other users. Based on current knowledge, long-term species persistence is more likely to be safeguarded than under the current management regime. Public confidence in the management of whitebait increases (as above).

Whitebait fishing practices

Advantages and disadvantages of maintaining the current situation, and of amending whitebait fishing practices, are summarised in the following tables. The advantages of amending fishing practices would be maximised if the elements comprising DOC's recommended option are introduced. However, some advantage is expected if any combination of the proposed changes are introduced.

Continuing the current situation	
Disadvantages	Advantages
To Whitebait Fishers	
Existing issues continue, for example, around access to fishing spots and perceptions of excessive, inequitable and unsustainable take.	No changes to consider.
To Government	
Public confidence in the management regime does not increase as issues highlighted as problematic in feedback received from public engagement continue.	No additional compliance or education requirement.
To the Public	
Public confidence in the management regime does not increase as issues for whitebait identified by the public remain unaddressed. Long-term species persistence, and the options of future generations, are less likely to be safeguarded while the current management regime continues. Known issues remain unaddressed.	None.

Amending whitebait fishing practices	
Disadvantages	Advantages
To Whitebait Fishers	
Some fishers would need to change their fishing practices and gear.	Better access to fishing spots and catch. Perceptions of excessive and inequitable take are diminished or extinguished.
To Government	
Increased compliance requirement as new regulations bed in.	<p>Delivery on management responsibilities for whitebait and the fishery is improved.</p> <p>Public confidence in the management regime increases.</p> <p>Greater fisher satisfaction reflects positively on compliance staff and the Department more broadly.</p>
To the Public	
Gear manufacturers and stockists would need to adjust their production and stocks to suit the new requirements.	<p>There are new sales opportunities for gear manufacturers and suppliers.</p> <p>Public confidence in the management regime for whitebait increases, because government has responded to issues for whitebait identified by the public.</p> <p>Long-term species persistence, and the options of future generations, are more likely to be safeguarded where fishing pressure is not excessive.</p>

Phasing out the export of whitebait

Advantages and disadvantages of maintaining the current situation, and of phasing out the export of the whitebait species, are summarised below.

Continuing the current situation	
Disadvantages	Advantages
To Whitebait Fishers	
Some operators may be motivated by selling for export, which could increase fishing pressure on the whitebait species, and competition for catch and fishing spots.	The status quo for export continues.
To Government	
Harvesting pressure on whitebait continues, where this is due to export.	No additional compliance or education requirement.
To the Public	
Harvesting pressure on these Threatened and At Risk fish species remains as the status quo, and could increase in future for export.	None.

Phasing out the export of whitebait	
Disadvantages	Advantages
To Whitebait Fishers	
The (currently small) export market for the whitebait species would not exist. Therefore, exporters would not buy catch.	Other avenues for whitebait sale are unaffected.
To Government	
Communication with exporters (and fishers who may catch for export) and compliance monitoring of the new requirement is needed.	Public confidence in the management regime may increase slightly because government has responded to one factor contributing to harvesting pressure on the whitebait species.
To the Public	
	Public confidence in the management of whitebait may increase (as above). Harvesting pressure on whitebait will not increase in future due to export.



Figure 14. Whitebaiters access a river near the bridge to fish on the West Coast.

Part 5: Implementation | Wāhanga 5: Te whakatinanatanga

DOC proposes to finalise any regulatory changes progressed from this consultation prior to the 2020 whitebait fishing season. Changes would then be phased in, in accordance with a timeframe developed after considering the feedback from this consultation.

5.1 Implementation risks and mitigation | Ngā mōrearea o te whakatinanatanga me te whakamauru

In the following table, risks that may be associated with the proposals in this discussion document are set out, together with the level of risk, and the proposed approach to mitigation.

Risks	Level of risk	Mitigation
Fishers are unclear about what the new regulations for whitebait fishing are, and when they come into effect.	Medium	Set out clear transitional provisions and phase-in timeframes in the new regulations. Conduct proactive communications using a range of methods to inform fishers of the changes and when new requirements take effect.
Fishers do not follow the new regulations.	Medium	Conduct proactive communications using different methods to inform fishers when the changes apply. Apply a graduated approach to compliance interventions when regulations change, starting with facilitating compliance through education and escalating as appropriate to enforcement (using warnings, and infringements and other penalties as appropriate to the level of offending).
The new regulations might have unintended consequences that are not aligned with the management goal for whitebait.	Medium to Low	A monitoring plan is implemented (as below) with emerging issues identified and reviewed promptly. Emergent issues are addressed (including through further regulatory amendment if appropriate) to ensure the management regime is robust.
Longer term, the new management approach (including habitat improvement work) does not deliver on the management goal for whitebait.	Medium	Review management and modify as appropriate to address management goal.

5.2 Monitoring, evaluation and review | Te aroturuki, te aromātai, me te arotake

The following table sets out how the regulatory options proposed for whitebait would be monitored, to evaluate their success. It is proposed that changes to the whitebait fishing regulations could be phased in over time. After the new regulations take effect, they would remain in place until review was triggered, for example, due to new government policy or the emergence of new information (including from the monitoring described below). In accordance with the monitoring approach set out below, conducting a review within five years of the new regulations coming into force would be appropriate.

Monitoring and review timeframes identified may require amendment depending on when any new regulatory requirements are phased in.

Monitoring element	Options that monitoring is relevant to	Monitoring approach	Timeframe for monitoring
Compliance	All	<ul style="list-style-type: none"> • DOC rangers conduct compliance and law enforcement in the whitebait fishery annually. This work will continue in future. • Compliance with the new regulations would be evaluated by monitoring the number and nature of infringements and prosecutions. DOC has maintained a record of prosecutions since the 1990s. Infringements are a new tool introduced through the Conservation (Infringement System) Act 2018. Infringements will be introduced in the whitebait fishery from 2020. 	Ongoing
Status of the whitebait species populations	All	<p>On an ongoing basis, DOC monitors the populations of native fish that produce young that comprise the whitebait fishery by:</p> <ul style="list-style-type: none"> • Evaluating their status every five years using the New Zealand Threat Classification System • Assessing the presence and abundance of these species using the New Zealand Freshwater Fish Database <p>Over the next four years, DOC is initiating new monitoring programmes for freshwater species, supported by Biodiversity 2018. These will:</p> <ul style="list-style-type: none"> • Establish 150 sites for monitoring freshwater biodiversity (including freshwater fish), and, • Establish a targeted monitoring programme for migratory 	Ongoing

Monitoring element	Options that monitoring is relevant to	Monitoring approach	Timeframe for monitoring
		freshwater fish, to assess the persistence and security of these species long-term.	
Fishery characteristics	Creation of whitebait species refuges in selected waterways (where whitebait fishing is excluded)	<ul style="list-style-type: none"> DOC Operations staff could be asked to report on their observations about fisher movements between rivers as fishing exclusions started and after these ended. 	Annually for five years, then as required (for example, when closed rivers open).
Public opinion of the efficacy of fishery management	All	<ul style="list-style-type: none"> Media relating to whitebait is monitored by DOC's communications team. Media stories and social media posts on whitebait and the whitebait fishery would be evaluated for key messages. 	Ongoing

5.3 Next steps | Ngā mahi whai muri

After the consultation period concludes, DOC will:

- consider all submissions received;
- prepare a summary of submissions;
- develop advice on final policy options, including recommendations on how to proceed;
- progress the update of whitebait management (including the whitebait fishing regulations) in accordance with Cabinet decisions; and
- communicate those decisions to iwi and stakeholders.



Figure 15. Whitebaiters fishing at the Waikanae Estuary.

Part 6: Consultation questions | Wāhanga 6: Ngā pātai akoako

Consultation questions are set out in the following table.

Introduction		
p. 11-25		Do you agree with the description of the current state in this Introduction? Is there other information that should be considered?
A management goal for whitebait		
p. 26-29		What (if any) changes do you think should be made to the proposed management goal? Would you like to comment on the management outcomes proposed for the whitebait fishery? Are there other management outcomes that should be considered?
Proposals for amendments to the whitebait fishing regulations		
Section	Options	Consultation questions
Timing of the whitebait season (p. 33-37)	For New Zealand, excluding the Chatham Islands: <ul style="list-style-type: none"> 15 August – 14 October* 1 September – 30 October 1 September – 15 November 	Which of the 3 timing options do you consider most appropriate for the whitebait fishing season? Why?
Nationwide upstream limits on whitebait fishing (p. 37-40)	<ul style="list-style-type: none"> Introduce back-pegs³⁶ to mark upstream limits to whitebait fishing* Where back-pegs are not in place, whitebait fishing occurs within tidal limits* <p>(Both elements comprise DOC's recommended option).</p>	Do you agree with the proposed approach to selecting rivers (outside the West Coast of the South Island) on which to place back-pegs? Why or why not? Do you wish to suggest specific waterways in which back-pegs should be placed? Why do you suggest these waterways?

³⁶ Back-pegs are physical markers used to demarcate the upstream extent of whitebait fishing (see Figure 7).

<p>Creation of whitebait refuges in selected waterways (fishing excluded) (p. 41-46)</p>	<ul style="list-style-type: none"> • Temporary short-term (2 years on, 2 years off) • Temporary medium term (5 – 10 year timeframe) • Longer term (10+ year timeframe)* 	<p>Do you agree with the approach proposed for selecting waterways as refuges for the whitebait species, and for the exclusion of whitebait fishing? Why or why not?</p> <p>Do you have specific feedback on any of the rivers listed as potential refuges? Can you provide any more information about these sites?</p> <p>Which sites do you think should be selected for short-term or longer term fishing exclusions? Please provide information you have that informs your view.</p>
<p>Whitebait fishing practices (p. 46-55)</p>	<ul style="list-style-type: none"> • Phase out: <ul style="list-style-type: none"> -sock nets* -traps in nets* -screens and diversions* • Nationwide size and location restrictions on screens and diversions • Fishing prohibited from structures other than stands* • Fishing prohibited within 20 m of weirs, groynes and illegal diversions* • Nets not to be located beyond outer edge of stand* • One net used when fishing from a stand* • Nationwide maximum overall length limit for gear of 6 m* • Nationwide maximum incursion of gear (excluding stands) into a waterway of 1/4* 	<p>Which options of those proposed do you consider most appropriate? Why?</p> <p>What timeframe do you consider reasonable for phasing in and phasing out any changes to fishing practices?</p>

	<ul style="list-style-type: none"> • Drag net provisions to apply nationwide 	
	<ul style="list-style-type: none"> • Minimum fixed distance of 20 m between fixed fishing gears (not stands)* 	
Phasing out export of the whitebait species		
p. 55-58	Are there other approaches to ending export of the whitebait species that should be considered?	
For all proposed regulatory amendments		
p. 30-68	<p>Is there other information that should be considered?</p> <p>How do you think the options set out will contribute to achieving the management outcomes and goal proposed?</p> <p>Would you like to provide additional information on the alternative options?</p> <p>Would you like to provide other comments on the proposals in this document?</p> <p>Which combinations of these options do you think would contribute best to improving whitebait management? Why?</p> <p>Are there additional options not described in this document which should be considered?</p> <p>Are there other minor changes that should be made to the whitebait fishing regulations, to improve consistency and clarity?</p>	
Implementation		
p. 69-72	<p>What do you see as potential challenges in implementing (any of) the options proposed in this document?</p> <p>When do you think any regulatory changes that are carried forward after this consultation should be introduced?</p> <p>What do you think about the proposed monitoring arrangements?</p> <p>How should the results of monitoring be reported?</p>	

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Glossary | Te kuputaka

Back-pegs	Markers placed by DOC that indicate the upstream limit of whitebait fishing in a waterway
Conservation Act	The Conservation Act 1987
Diversion	Any item (excluding a screen) that may be used to divert whitebait into a net
Drag net	Any net that is weighted on its bottom edge or part of such a net that is operated by surrounding whitebait and being drawn through the water to shore or over the bed of a waterway
Stand	A structure from which whitebait are fished, which is subject to the Resource Management Act 1991 and associated management plans
Screen	Metallic or fabric gauze material and its supporting frame that does not impede the flow of water and can be used to divert whitebait into a net
Whitebait	Young or fry of six species of indigenous freshwater fish: īnanga/īnaka (<i>Galaxias maculatus</i>), kōaro (<i>Galaxias brevipinnis</i>), banded kōkopu (<i>Galaxias fasciatus</i>), giant kōkopu (<i>Galaxias argenteus</i>), shortjaw kōkopu (<i>Galaxias postvectis</i>) and common smelt/pōrohe/paraki (<i>Retropinna retropinna</i>), as defined in the whitebait fishing regulations
Whitebait fishing regulations	Collectively, the Whitebait Fishing (West Coast) Regulations 1994 and the Whitebait Fishing Regulations 1994



Figure 16. Fishers of all ages enjoy whitebaiting at the Waikanae Estuary.

Appendices | Ngā āpitihanga

These appendices and maps showing the locations of waterways identified can be downloaded from <https://www.doc.govt.nz/whitebait-management>. These can also be requested in hard copy from: whitebait@doc.govt.nz.

Appendix 1: Sites in the Northland region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Arapaoa R	Pahi R	726	0	Y					
	Paparoa S	716	0	Y					
Awakino R, Wairoa R	Wairoa R	722	5	Y					
Awanui R	Awanui R	378	14	Y		Y			
	Waihoe Ch	377	8			Y			
Awapoko R, L Ohia	Aurere S	311	11	Y					
Bream Hd	Bream Hd	683	56			Y			
Finlayson's B, Waipu R	Finlayson's B, Waipu R	699	5	Y		Y			
Hatea R	Hatea R	648	0			Y			
	Hatea R	639	1	Y		Y			
	Limeburners C	650	17			Y			
	Waiarohia S	643	3			Y			
Hauturu S	Hauturu S	537	78			Y			
Herekino H, Herekino R	Uwhiroa S	427	40	Y		Y			
Horahora R, Taheke R	Waitangi R	630	2	Y		Y			
Houhora H	Houhora H	259	0			Y			
	Motutangi S	258	12			Y			
	Omianga S	246	4			Y			
	Waingarara S	9188	0			Y			
Kaeo R	Kaeo R	369	9	Y		Y			Y
Kerikeri R	Kerikeri R	414	1			Y			
	Wairoa S	416	1			Y			
Kohinui S	Kohinui S	657	0			Y			
Kowhaitai C	Kowhaitai C	635	0			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
L Mokeno	L Mokeno	146	79	Y					
L Morehurehu, Parengarenga H	L Morehurehu, Parengarenga H	215	0	Y					
L Ngatu	L Ngatu	332	12	Y					
Mangamuka R	Mangamuka R	422	40	Y		Y		Y	
Mimiha S	Mimiha S	560	0	Y					Y
Moetangi S	Moetangi S	556	83			Y			
Muriwai S	Muriwai S	633	21	Y					
Ngakengo S	Ngakengo S	179	99			Y			
Ngunguru R	Ngunguru R	622	1			Y			
Ohae S	Ohae S	614	94			Y			
Omanaia R	Omanaia R	564	25		Y			Y	Y
Omaruhanga S	Omaruhanga S	291	5			Y			
Omata S	Omata S	10848	0	Y					
Orira R	Orira R	457	7	Y					
Otamatea R	Wairau R	717	1	Y					
Owae S	Owae S	521	20	Y		Y			Y
Parengarenga H	Whakatereohao S	192	0			Y			
Parengarenga H, Waitiki S	Waitiki S	185	54			Y			
Punaruku S	Punaruku S	515	62	Y		Y			Y
Rangikariri S	Rangikariri S	374	0	Y					
Ruakaka R	Ruakaka R	687	9			Y			
Spirits Ba	Tapotupotu S	163	99	Y		Y			
	Kapowairua S	158	47	Y		Y			
Taemaro S	Taemaro S	293	4			Y			
Taikarawa S	Taikarawa S	511	85	Y		Y			
Taipa R	Oruru River	341	13			Y			
	Paranui S	343	1			Y			
Takahiwai	Takahiwai	677	0	Y					
Tauhara C, Tauhara R	Tauhara C	876	47	Y					
Tauranganui S	Tauranganui S	9238	0			Y			
Te Kanakana S	Te Kanakana S	154	62			Y			
Te Werahi S	Te Werahi S	172	56	Y					
Waiaua S	Waiaua S	302	0			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waihou R, Whakanekeneke R	Waihou R, Whakanekeneke R	476	47		Y				
Waihou R (Hokianga H)	Utakura R	484	4	Y	Y	Y		Y	Y
Waikare I	Te Ngako C	501	50	Y		Y			Y
Waikare I	Waikare I	487	25			Y			
Waikare R	Waikare R	503	75			Y			
Waikuku Bc	Waikuku Bc	157	68	Y					
Waima R	Waima R	549	4			Y			
Waimamaku C	Waimamaku C	804	0	Y					
Waimamaku R	Waimamaku R	609	32					Y	
Waipoua R	Waipoua R	627	69	Y		Y			
Wairakau S	Wairakau S	335	79	Y		Y			
Wairoa R	Tauraroa R	694	11	Y					
	Te Hopai C	734	0	Y					
	Waiotama R	669	11			Y			
	Wairoa R	695	10			Y		Y	
Waitangi R	Kaipatiki S	451	81			Y			
	Waitangi R	9449	4			Y			
Waitetoki S	Waitetoki S	299	0			Y			
Waitui S	Waitui S	407	25			Y			
Whangakea C	Whangakea S	167	98			Y			
Whangaroa B	Tauranga S	330	17	Y		Y			

Appendix 2: Sites in the Auckland region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Anchor Ba	Anchor Ba	998	0			Y			
Army Ba	Army Ba S	10231	0			Y			
Waitemata H	Meola C	1182	1			Y			
Waitemata H	Purewa C	1186	0			Y			
Awaruku C	Awaruku C	1108	0	Y		Y			
Big Muddy C	Big Muddy C	1261	0	Y	Y				
Campbells Ba	Campbells Ba S	1119	0	Y					
Coxhead C	Coxhead C	974	0	Y					
East Coast Bays, Taiaotea C	Taiaotea C	1112	0	Y		Y			
Whangaparapara H	Unnamed S	957	97	Y					
	1,815,406.503 5,987,110.840 m								
Great Barrier Island	Sunbeam C	964	73			Y			
Happy Valley	Happy Valley	1202	0	Y					
Hatfields Bc, Otanerua S	Otanerua S	1062	8			Y			
Henderson C	Henderson C	10363	0			Y			
	Henderson C, Henderson C	10371	0	Y					
	Lawsons C	1165	0	Y					
	Momutu S	1176	1			Y			
	Paremuka S	1177	0	Y					
Hoteo R, Mahurangi H	Mahurangi R	1003	2	Y					
Hoteo R	Hoteo R	1009	3	Y		Y			Y
Huia B, Huia S	Huia S	1275	0		Y	Y			
Jones Ba	Jones Bay S	1000	0	Y		Y			

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Kaipara R, Kumeu R	Kaipara R 1097	0	Y					
Kaipatiki C, Waitemata H	Kaipatiki C 1147	2			Y			
Karamatura S	Karamatura S 1278	0	Y		Y		Y	
Karekare S	Karekare S 1273	0			Y			
Kaukapakapa R, Waihou R	Kaukapakapa R 1094	2	Y					
Kauritutahi C	Kauritutahi C 1307	0			Y			
Kawakawa Ba	Rautawa S 1254	8			Y			
L Ototoa	L Ototoa 1051	13			Y			
Little Barrier Island	Hut Bay C 10059	98			Y			
Little Barrier Island	Tirikakawa S 952	100			Y			
Little Muddy C	Waituna S 1238	0	Y					
Long Ba	Unnamed S 1107 Long Ba 1,756,159.716 5,939197.842 m	1			Y			
Mahurangi H	Hepburn C 1012	0	Y		Y			
Mangere	Tararata C 1242	13	Y					
Manukau H	Hingaia S 1317	0	Y		Y			Y
Marawhara S	Marawhara S 1226	0			Y			
Marawhara S	Whakatai S 10427	0			Y			
Matakana R	Matakana R 10124	0			Y			
Maungamaungaroa C	Mangemangeroa C 1222	0			Y			
Mellons B	Mellons B 10395	0			Y			
Motutapu Island	Unnamed Stream Emu Ba 1145 1,770,338.905 5,927,413.800 m	98	Y		Y			
Motutapu Island	Unnamed Stream Home Ba 1133 1,771,244.596 5,929,426.736 m	100	Y		Y			
Motutapu Island	Unnamed Stream Motutapu I 1126 1,769,517.657 5,930,037.389 m	100	Y		Y			
Nukumea S	Nukumea S 1064	24	Y		Y			
Okura R	Okura R 1106	4	Y		Y			Y
Okura R	Okura R 10267	94			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Okura R	Okura R	1102	0			Y			
Okura R	Okura R	1103	0			Y			
Omaha Ba	Omaha Ba	969	1			Y			
Orere R	Orere R	1266	0	Y		Y			Y
Orewa R	Orewa R	1068	27			Y			
Pahurehure I	Papakura S	1288	0	Y	Y				
Pahurehure I	Whangapouri C	1329	0			Y			
Pahurehure I, Waimahia C	Pahurehure I, Waimahia C	1285	0	Y		Y			
Pakiri R	Pakiri River	955	0	Y		Y			
Pakuranga S, Tamaki R	Pakuranga S, Tamaki R	1204	1	Y					
Piha S	Piha S	1243	0		Y				
Poutawa S, Tomarata L	Poutawa S, Tomarata L	943	1	Y					
Puhinui C	Puhinui C	1280	1	Y		Y			
Puhoi R	Puhoi R	1044	1	Y		Y			
Taihiki R	Taihiki R	1354	0			Y			
Taiorahi C	Taiorahi C	1114	0			Y			
Tamaki R	Otara C	1253	0	Y					
Tamaki R	Tamaki R	1228	0			Y			
Tapapakanga S	Tapapakanga S	1500	0						Y
Te Puru S	Te Puru S	10393	0	Y					
Te Puru S	Te Puru S	1196	0			Y			
Turanga C	Turanga C	1239	0	Y					
Waiheke Island	Okahiti C	10788	0			Y			
Wairoa R	Wairoa R	143	0			Y			
Waitakere R	Waitakere R	1194	5	Y	Y	Y			Y
Waitemata H	Hillcrest C	1149	0			Y			
Waitemata H	Rangitopuni S	1121	1			Y			
Waitemata H	Ratara S	10319	0	Y		Y			
Waitemata H	Waiarohia S	1152	0			Y			
Waiwera R	Waiwera R	1053	0			Y			
Wekatahi C	Wekatahi C	1231	0	Y	Y	Y			
Whau R	Avondale S	1205	0			Y			
Whau R	Manawa S	1206	0			Y			
Whau R	Wairau C	1200	0			Y			

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Whau R	Whau R 1192	0			Y			
Woontons C	Woontons C 10442	0			Y			

Appendix 3: Sites in the Waikato region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ca = Canal, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, Pt = Port, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Awakino R	Awakino R	1777	25			Y			
Awakino R	Manganui R	1776	21	Y					
Raglan H	Bridal C	1649	0			Y			
Colville B	Maurea S / Ahirau S	1403	22	Y		Y			
Coromandel H	Whangarahi S	1439	34	Y	Y	Y			
Fantail C	Fantail C	1380	97			Y			
Grahams C, Grahams S, Tairua H	Grahams S	1506	1				Y		
Hauarahi S	Hauarahi S	1538	0	Y					Y
Hope S	Hope S	1390	54	Y		Y			
Huakitoetoe S	Huakitoetoe S	1414	76	Y		Y			
Kaawa S	Kaawa S	1611	0	Y					Y
Kauaeranga R	Kauaeranga R	1554	79		Y				
Kaupeka S	Kaupeka S	0765	0	Y		Y			
Kiritehere S	Kiritehere S	1741	48	Y	Y				
Kuaotunu R	Kuaotunu R	1429	15	Y		Y			
Marokopa R	Marokopa R	1736	17	Y					
Mataiterangi S (Kennedy Ba)	Mataiterangi S	1415	60	Y	Y	Y			
McCarties S	McCarties S	0759	9	Y					
Mercury B	Tarapatiki S	1454	1	Y					
Mokau R	Mangaotaki R	1762	5					Y	
Mokau R	Mokau R	1754	5		Y				
		1779	20	Y	Y				
Ngamoko S	Ngamoko S	1398	0	Y		Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Ngararahae S	Ngararahae S	1744	0	Y		Y			
Nukuhakari S	Nukuhakari S	8676	0	Y					
Nukuhakari S	Nukuhakari S	1743	20	Y					
Ohautira S (Raglan H)	Ohautira S	1641	1	Y		Y			Y
Ohui S	Ohui S	1534	0			Y			
Ohuka C	Ohuka C	1613	3	Y		Y			
Okahutahi S	Okahutahi S	1382	62	Y		Y			
Oparau R	Oparau R	1701	26	Y					
Opito Pt	Opito Pt	8659	1			Y			
Opitonui R	Opitonui R	1440	25	Y		Y			Y
Otahu R	Wharekirauponga S	1582	64		Y				
Otuwheti S	Otuwheti S	1564	1	Y		Y			
Ounutae S	Ounutae S	1767	0			Y			
Paparahia S	Paparahia Stream	1758	22	Y		Y	Y	Y	
Parakete S	Parakete S	1381	1			Y			
Paraunahi S	Paraunahi Stream	10714	0			Y			
Pepe S	Pepe S	1508	69	Y		Y			
Piako R	Piako R	1568	18			Y			
Piako R	Waitoa Ca	1607	5	Y					
Pitone S	Pitone S	1773	1	Y					
Pt Jackson	Muriwai S	1373	87	Y		Y			
Shag Ba	Unnamed S 1,816,835.438 5,958,111.287 m	1377	99			Y			
Stony Ba	Unnamed S Stony Ba 1,817,464.090 5,956,790.485 m	10776	97			Y			
Stony Ba, Stony Bay C	Stony Bay C	1379	97			Y			
Tairua H	Gumdigger Gully	1524	1	Y		Y			
	Oturu S	1516	51			Y			
	Swampy S	1522	0	Y					
	Tairua H	1512	67			Y			
Tairua R	Tairua R	1527	58	Y		Y			
Tangiario S	Tangiario S	1383	3			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS	
Tararu S	Tararu S	1539	72	Y	Y	Y			Y	
Tawatawa S	Tawatawa S	1548	10	Y		Y			Y	
Te Puaeharuri S	Te Puaeharuri S	1545	0	Y		Y				
Turiakina S	Turiakina S	1734	0			Y				
Waihou R	Ohinemuri R	1598	32	Y					Y	
Waihou R	Waihou R	1560	12	Y		Y			Y	
	Waiomou S	1659	34	Y					Y	
Waihou R (Firth of Thames)	Hikutaia R	1588	51	Y		Y			Y	
Waikaretu S	Waikaretu S	1752	41			Y				
Waikato R	Firewood C	1630	18				Y		Y	
	Karapiro S	1665	0	Y					Y	
	Maire S	1610	0						Y	
	Mangatawhiri S	1584	6	Y	Y	Y			Y	
	Mangawara S	1620	4				Y		Y	
	Pungarehu Stream	1595	9			Y	Y		Y	
	Waikato R	137	140	98			Y			
			142	99						Y
			1599	0			Y			
			1615	0	Y					Y
1615			3			Y			Y	
Whangamarino R	1586	36						Y		
Whangape S	1603	6	Y		Y	Y				
Waikato R, Waikato R (mouth to Waipa R)	Komakorau S	1621	0				Y		Y	
	Waipa R	1624	7				Y		Y	
	Waikato R	1597	2	Y			Y		Y	
Waikato R	Mangaonua S	1648	2	Y		Y	Y			
Waikawau Ba	Gisborne S	1401	63	Y		Y				
Waikawau Ba	Waikawau Ba	10621	97			Y				
Waikawau R	Waikawau R	1396	4	Y		Y				
Waikawau R	Waikawau R	1751	61	Y						
Waikawau S	Waikawau S	1608	0	Y						
Waimai S	Waimai S	1622	0	Y						
Waingaro R	Waingaro R	1637	0	Y					Y	
Waiomu S	Waiomu S	1513	83		Y					

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waitakaruru R	Maukoro Ca 1581		4	Y					
Waitakaruru R	Waitakaruru Ca 1580		6	Y					
Waitetuna R	Waitetuna R 1643		13						Y
Waiwawa R	Waiwawa R 1489		71			Y			
Wentworth R	Wentworth R 1576		60	Y		Y			Y
Whakatiwai S	Whakatiwai S 1535		0						Y
Whangamaroro R	Whangamaroro R 1469		60	Y					
Whangamata H	Waikiekie S 1570		23						Y
Wharekawa H	Kapakapa S 1542		0			Y			
Wharekawa R	Wharekawa R 1553		42	Y					
Whenuakite R	Whenuakite R 1493		12	Y		Y			
Whenuakite R	Whenuakite R 1493		12	Y		Y			
Wigmore S	Wigmore S 1470		Y			Y	2		

Appendix 4: Sites in the Bay of Plenty region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ca = Canal, Ch = Channel, E = Estuary, H = Harbour, Hd = Head, I = Inlet, L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Whakatane R	Whakatane R	1946	0	Y	Y	Y		Y	Y
Kaitemako S, Tauranga H	Kaitemako S	1883	0	Y		Y			Y
Kaituna R	Kaituna R	134	0						Y
Kaituna R	Kaituna R	1893	8						Y
Kaituna R	Mangorewa R	1913	15				Y		
Kopurererua S	Kopurererua S	1870	6	Y					
Motu R	Waiopoahu S	1938	8	Y		Y			
Ohiwa H	Nukuhou R	1985	8	Y					
Ohiwa H	Wainui S	1977	8						Y
Pikowai S, Waitahanui S	Pikowai S	1925	3			Y			
Rangitaiki R	Rangitaiki R	2034	18	Y					Y
Tahawai S	Tahawai S	1814	24	Y		Y			Y
Tarawera R	Tarawera R	1936	9						Y
		2010	53		Y				
Tauranga H, Wairoa R	Tauranga H, Wairoa R	1864	0	Y		Y			
Te Puna S	Te Puna S	1859	8	Y					
Tuapiro C	Tuapiro C	1808	57	Y	Y	Y			Y
Waihi E	Kaikokopu Ca	1903	3	Y					Y
Waimapu S	Waimapu S	1884	4						Y
Waioeka R	Kukumoa C	1972	8	Y					
Waioeka R	Waioeka R	1975	72						Y
Waiotahi R	Waiotahi R	1970	44	Y					
Waipapa R	Waipapa R	1842	2	Y					

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Wairoa R	Wairoa R 1866	18	Y					Y
Waitao S	Waitao S 1880	5						Y
Welcome Ba	Unnamed stream 1882 Welcome Ba 1,881,572.648 5,819,004.907 m	1	Y		Y			
Whangaparaoa R	Whangaparaoa R 1840	0	Y	Y	Y			

Appendix 5: Sites in the Hawkes Bay region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, Lg = Lagoon, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Ahuriri Lg, Taipo S	Ahuriri Lg, Taipo S	2531	6	Y					
Aropaoanui R	Aropaoanui R	2519	6			Y			Y
Clive R	Clive R	2540	0	Y		Y			
Esk R	Esk R	2527	1	Y	Y	Y			Y
Kopuawhara S	Kopuawhara S	2480	0	Y					
Maraetotara R	Maraetotara R	2545	0	Y					
Ngaruroro R	Ngaruroro R	2533	58		Y				
Ngaruroro R, Tutaekuri R	Tutaekuri R	2537	1	Y					
Nuhaka R	Nuhaka R	2473	2	Y					
Porangahau R	Mangaorapa S	2581	0	Y					
	Porangahau R	2582	0	Y					
Te Ngaru S	Pakuratahi S	2524	0	Y	Y				
Tukituki R	Mangaonuku S	2559	1						Y
Tukituki R	Papanui S	2556	0						Y
Tukituki R	Tukipo R	2566	7		Y				
Tukituki R	Tukituki R	2541	1	Y					
		2567	5						Y
		2562	17						Y
	Waipawa R	2558	45		Y				
Tutaekuri R	Mangaone R	2530	0	Y					
	Mangatutu S	2528	24	Y					

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waikari R	Waikari R	2499	4	Y					
Waingongoro S	Waingongoro S	2554	0		Y				
Waipatiki S	Waipatiki S	2521	4	Y					
Wairoa R	Waikaretaheke R	2455	52		Y				
Whangawehi S	Whangawehi S	2488	10	Y					

Appendix 6: Sites in the Gisborne region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, Pt = Port, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Karakatuwhero R	Karakatuwhero R	2040	0	Y					
		2039	39	Y		Y			
Orutua R	Nohomanga S	2047	0			Y			
	Orutua R	2045	0	Y					
Punaruku S	Oruakarahea S	2038	0	Y					
Te Hekawa Pt	Te Hekawa Pt	8961	0			Y			
Turanganui R	Taruheru R	2125	1			Y			
Waiapu R	Waiapu River	2056	8	Y		Y			
Waiotautu S	Waiotautu S	2057	2			Y			
Waipaoa R	Te Arai R	2130	0	Y	Y				
Wharekahika R	Wharekahika R	2035	3	Y				Y	

Appendix 7: Sites in the Taranaki region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Heimama S	Heimama S	2240	0	Y					
Huatoki S	Mangaotuku S	2175	3				Y		
Kaihihi S	Kaihihi S	2192	11	Y	Y	Y	Y	Y	Y
Kapoaiaia S	Kapoaiaia S	2211	30	Y		Y		Y	
Katikara S	Katikara S	2189	17	Y	Y		Y	Y	
Kaupokonui S, Otakeho S	Kaupokonui S	2268	19		Y				
Kohangamoā, Urenui R	Urenui R	2162	19	Y					
Mimi R	Mimi R	2156	15				Y	Y	
Mohakatino R	Mohakatino R	2144	57	Y		Y			
Oakura R	Oakura R	2181	49		Y	Y	Y	y	
Oaonui S	Oaonui S	2232	14	Y					
Okaweu S	Okaweu S	2238	0	Y					
Onaero R	Onaero R	2165	15	Y					
Otahi S	Otahi S	2239	1	Y					
Patea R	Patea R	2294	13	Y	Y	Y	Y		Y
Stony R	Stony R (Hangatahua)	2194	72		Y			Y	
Tangahoe R	Mangemange S	2270	3			Y			
Tapuae S	Tapuae S	2180	1			Y			
Te Henui S	Te Henui S	2174	11		Y	Y		Y	
Timaru S	Timaru S	2184	39					Y	
Tongaporutu R	Tongaporutu R	2147	49			Y			
Waiaua R	Waiaua R	2242	48	Y					Y
Waimoku S	Waimoku S	2183	41	Y					
Waiongana Stream	Waiongana S	2166	3	Y		Y		Y	

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Wairau S	Wairau S	2182	66	Y			Y	Y	
Waitara R	Manganui S	2178	18	Y					
Waitara R	Waitara R	2161	4	Y		Y	Y		
Waitotara R	Moumahaki S	2296	11			Y			
Waitotoroa S	Waitotoroa S	2215	6			Y	Y	Y	
Waiwhakaiho R	Waiwhakaiho R	2173	29			Y			
Warea R (Teikaparua)	Warea R (Teikaparua)	2206	24			Y	Y	Y	
Whenuakura R	Whenuakura R	2295	33						Y

Appendix 8: Sites in the Manawatu-Whanganui region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Akitio R	Akitio R	2434	0	Y					
Awanui R, Waikawa, Waikawa S	Waikawa S	2439	30	Y	Y			Y	
Hokio S, Lake Horowhenua, Manawatu R, Patiki S	Hokio S	2428	1	Y			Y		
Kaikokopu R, Kaikokopu S, Manawatu R to Rangiteiki R	Kaikokopu R, Kaikokopu S, Manawatu R to Rangiteiki R	2395	1	Y					Y
Kaikokopu S	Kaikokopu S	2399	0	Y					
Lake Papaitonga, Waiwiri S	Waiwiri S	2433	10			Y			
Manawatu R	Makino S	2392	0						Y
Manawatu R	Manawatu R	2397	49		Y			Y	
Manawatu R	Manawatu R	2413	3	Y	Y	Y		Y	Y
Manawatu R	Mangaone S	2398	0	Y					
Manawatu R	Mangatainoka R	2414	18					Y	
Manawatu R	Pohangina R	2394	33		Y			Y	
Manawatu R	Tokomaru R	2418	12			Y		Y	
Ohau R	Ohau R	2438	39					Y	
Papuka S	Papuka S	2423	0	Y					
Rangitikei R	Rangitikei R	2393	3	Y	Y	Y	Y	Y	
Turakina R	Turakina R	2372	1	Y					
Waimahora S	Waimahora S	2380	0	Y		Y			
Waimata R	Waimata R	2424	0	Y					
Whangaehu R	Whangaehu R	8441	0	Y	Y	Y			
Whanganui R	Whanganui R	2361	0			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Whanganui R	Whanganui R	2362	29						Y
Kai Iwi S	Kai Iwi S	2318	0	Y	Y	Y			

Appendix 9: Sites in the Wellington region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur).

Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, C = Creek, H = Harbour, I = Inlet, L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
L Ferry	L Ferry	98	99	Y	Y	Y			Y
Awhea R	Awhea R	2762	2	Y					
Castlepoint S	Castlepoint S	2609	0	Y					
Corner C	Corner C	2724	99		Y				
Duck C, Pauatahanui I	Duck C	2647	0	Y		Y			
Horokiri S, Pauatahanui I	Horokiri S	2640	0	Y	Y				
Huatokitoki S	Huatokitoki S	2695	0		Y				
Hurupi S	Hurupi S	2746	85		Y				
Hutt R	Akatarawa R	2639	7		Y				
	Hutt R	2641	1		Y				
	Whakatikei R	2651	0		Y				
Hutt R, Wellington H	Hutt R	2674	10	Y		Y			
Kaiwharawhara S, Korimoko S, Wellington H	Kaiwharawhara S	2684	17			Y			
Karori S	Karori S	2711	11		Y	Y			
Korokoro S, Wellington H	Korokoro S	2671	6		Y				
L Kohangapiripiri	L Kohangapiripiri	2718	5						Y
Little Mangatoetoe S	Little Mangatoetoe S	2777	32		Y				
Makotukutuku S	Makotukutuku S (Washpool C)	2758	69		Y			Y	
Mangatoetoe S	Mangatoetoe S	2775	45		Y	Y			
Motuwaireka S	Motuwaireka S	2648	6	Y					

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Mukamuka S	Mukamuka S 2728	93		Y				
Ngakauau S	Ngakauau S 2612	0	Y					
Ngarara S, Waimeha S	Ngarara S 2596	12	Y					
Ohau Ba	Unnamed S 2677 Ohau Ba 1,738,314.120 5,432,813.273 m	0		Y	Y			
Orongorongo R	Orongorongo R 2741	46		Y				
Otakaha S	Otakaha S 2766	37		Y				
Otaki R	Otaki R 2587	0			Y			
Otaki R	Otaki River 2586	33		Y				
Oteranga S	Oteranga S 2694	0		Y				
Oterei R	Oterei R 2757	0	Y			Y		
Pararaki S	Pararaki S 2765	42		Y		Y	Y	
Pauatahanui I, Pauatahanui S	Pauatahanui S 2645	0	Y		Y			
Pauatahanui I, Ration C	Pauatahanui I, Ration C 2643	2			Y			
Porirua H	Porirua H 7147	95			Y			
Porirua H	Takapuwahia S 2652	1			Y			
Porirua S	Porirua S 2655	7		Y	Y			
Ruamahanga R	Ruamahanga R 100	93	Y					Y
Ruamahanga R	Ruamahanga R 2730	12	Y					
Ruamahanga R	Ruamahanga R 2731	50	Y					
Ruamahanga R	Waingawa R 2626	66	Y					
Taupo S	Taupo S 2637	0			Y			
Te Ikaamaru Ba	Unnamed S 2679 Te Ikaamaru Ba 1,739,390.044 5,432,522.694 m	0		Y				
Waikanae R	Waikanae R 2599	22		Y	Y			
Wainui S, Wainui S	Wainui S 2619	6	Y	Y	Y	Y		
Wainuiomata R	Wainuiomata R 2732	18	Y	Y		Y		
Waitetuna S	Waitetuna S 2776	69		Y			Y	
Waitohi S, Wellington H	Waitohi S, Wellington H 2678	5		Y				
Waitohu S	Waitohu S 2585	35	Y	Y	Y			
Wellington H	Gollans S 2723	15			Y	Y		

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Wellington H	Wellington H	2696	0			Y			
Whakataki R	Whakataki R	2605	0	Y					
Whareama R	Whareama R	2629	2	Y					
Wharekauhau S	Wharekauhau S	2720	73		Y				
Wharemauku S	Wharemauku S	2608	0		Y	Y			
		2608	0		Y	Y			
Wharepapa R	Wharepapa R	2727	73		Y				
Whareroa S	Whareroa S	2613	57	Y			Y		
Whawanui R	Whawanui R	2770	39		Y	Y			

Appendix 10: Sites in the Tasman region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, C = Creek, I = Inlet, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Anatori R	Anatori R	2825	96	Y				Y	
Anaweka R	Anaweka R	2836	100	Y		Y	Y	Y	
Aorere R	Aorere R	2817	42	Y		Y		Y	
		2819	0	Y					
		2827	87	Y				Y	
Aorere R	Burton Ale C	2820	1	Y					
Aorere R	Kaituna R	2826	69			Y		Y	
Atua S	Atua S	2890	7	Y	Y				
Awapoto R	Awapoto R	2870	96	Y		Y		Y	
Awaroa B	Awaroa B	7375	92	Y		Y			
		7377	63	Y		Y			
Awaroa R	Awaroa R	2872	99	Y		Y		Y	
Bark B	Huffam S	2876	99		Y	Y			
Billy King C	Billy King C	2788	87			Y			
Borck C, Waimea I	Borck C, Waimea I	2937	1	Y	Y				
Ellis C	Ellis C	2864	4	Y		Y			
Ellis C to Wainui R	Ellis C to Wainui R	2855	2	Y					
Falls R	Falls R	2877	99			Y		Y	
Ferrer C	Ferrer C	2893	0	Y					
Golden B	Golden B	2782	73	Y		Y			
Gorge C, Ruataniwha I	Gorge C	2816	74	Y		Y	Y	Y	
Green Hills S	Green Hills S	2781	89	Y		Y			
Kaihoka L	Kaihoka L	2786	14			Y			
Kaihoka P	Kaihoka P	2784	26	Y					
Kaikau S	Kaikau S	2851	98			Y			

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Kaiteriteri	Unnamed S Kaiteriteri 1,601,354.133 5456904.568 m	2889	33			Y			
Lesson C	Lesson C	2880	76			Y			
Little Kaituna S	Little Kaituna S	2833	22	Y		Y			
Marahau R	Marahau R	2883	75					Y	
Motueka R	Motueka R	2894	17		Y				
Motupipi R	Motupipi R	2867	17	Y					
O'Connor C	O'Connor C	2926	1	Y					
Onahau R	Onahu R	2848	49	Y		Y			
Onekaka R	Onekaka R	2834	50	Y	Y		Y		
Onetahuti Ba	Unnamed S Onetahuti Ba 1,603,914.744 5,473,817.564 m	2874	98			Y			
Otuwhero R	Otuwhero R	2885	18	Y					
Pakawau I	Onetaua C	2789	64			Y			
Pakawau I	Pakawau C	2791	76	Y		Y			
Pakawau I	Pakawau I	8338	85	Y		Y			
Parapara R	Parapara R	2829	95		Y	Y			
Pariwhakaoho R	Pariwhakaoho R	2838	70						Y
Paturau R	Paturau R	2812	84	Y		Y			
Paturau R, Whanganui I	Paturau R, Whanganui I	2805	74	Y					
Pig C	Pig S	2837	100			Y	Y		
Puremahaia R	Puremahaia R	2847	40	Y					
Riwaka R	Riwaka R	2892	0	Y					
Riwaka R	Riwaka R	2891	45	Y	Y				
Ruataniwha I	Marble C	2814	90	Y		Y			
	Plumbago C	2809	49	Y		Y			
Sandhills C	Sandhills C	2818	76	Y			Y		
Seaton Valley S, Waimea I	Seaton Valley S, Waimea I	2917	2	Y		Y			
Simonet C	Simonet C	2882	100		Y	Y		Y	
Takaka R	Takaka R	2860	78	Y	Y	Y	Y		
Taupata S	Taupata S	2785	87	Y		Y		Y	

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Te Rae	Unnamed S Te Rae 1,575,460.334 5,510,460.089 m	8274	14	Y					
Tinline S	Tinline S	2881	96		Y	Y		Y	
Torrent R	Torrent R	2879	98		Y	Y		Y	
Totaranui S	Totaranui S	2852	95			Y			
Tregidga S	Tregidga S	7425	99			Y			
Tukurua C	Tukurua C	2831	39			Y			
Turimawivi R	Turimawivi R	2832	91	Y		Y	Y	Y	
Venture C	Venture C	2871	93	Y		Y			
Waiharakeke S, Wainui R to Awaroa R	Waiharakeke S	2869	99			Y			
Waimea R	Lee R	2945	55		Y				
Waimea R	Wai-iti River	2943	14						Y
Wainui I	Wainui I	2850	91	Y	Y				
Wainui I, Wainui R to Awaroa, Wainui R to Awaroa R	Wainui I, Wainui R to Awaroa, Wainui R to Awaroa R	2858	1	Y	Y	Y			
Wainui R	Wainui R	2857	82	Y				Y	
Wallaby C	Wallaby C	7381	100			Y			
Whanganui I	Whanganui I	8300	3			Y			
Wharariki S	Wharariki S	2779	97	Y					
Whariwharangi B	Whariwharangi B	2844	99			Y			
Winter C	Winter C	2861	5	Y					

Appendix 11: Sites in the Nelson region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: C = Creek, I = Inlet, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Jenkins C, Poorman Valley S	Jenkins C	2931	5	Y					
Jenkins C, Waimea I	Jenkins C, Waimea I	2928	1	Y		Y			
Maitai R, Maitai R	Maitai R	2921	34	Y	Y				Y
Nelson H, Nelson Haven	Oldham C	2916	1	Y					
Poorman Valley S, Waimea I	Poorman Valley S	2932	3	Y	Y	Y			
Reservoir C, Waimea I	Reservoir C	2942	3	Y		Y			
Saxton C, Waimea I	Saxton C, Waimea I	2940	6	Y		Y			
Waimea I	Orphanage S, Stoke	2938	3	Y					Y
Waimea I	Waimea I	2934	6	Y		Y			
Wakapuaka R	Wakapuaka R	2909	19	Y	Y	Y			
Whangamoia R	Whangamoia R	2897	35		Y				

Appendix 12: Sites in the Marlborough region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, C = Creek, H = Harbour, I = Island, In = Inlet L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = ĩnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit	% Prot	Ī	K	BK	GK	SJK	CS
Wairau R	Wairau Diversion 3195	24	Y	Y	Y			
Anakoha B	Unnamed S, Anakoha Ba, 174.108614 41.051880 m 3023	57		Y	Y		Y	
Arapawa I	Unnamed S 3076 Onauku Ba Arapaoa I, 174.372125 41.124092 m	2			Y			
Awatere R	Awatere R 3219	13		Y				
Clova Ba	Totaranui S 3059	57		Y				
	Unnamed S Clova Ba 174.035995 41.114387 m 3073	33			Y			
	Unnamed S Otatara Ba 174.029989 41.080493 m 3041	94			Y			
Crail Ba	Unnamed S 3083 Elie Ba 173.984285 41.135422 m	9	Y					
	Unnamed S 3079 Elie Ba 173.992052 41.133479 m	13	Y					

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Croisilles H	Castor S 3058	4			Y	Y		
	Kaimiko A, Okiwi Ba 3065	2	Y		Y			
Croisilles H	Poawhariki S, Okiwi Ba 3062	95			Y			
	Ruataniwha S 3066	4			Y		Y	
	Unnamed S 3015 Croisilles H 173.677972 41.044939 m	0			Y			
D'Urville I	Leebody C 2951	74			Y			
	Mill Arm C 2958	90	Y		Y			
	Unnamed S 7345 Wells Ba D'Urville I 173.904677 40.803098 m	67			Y			
	Unnamed S 2968 Punt Arm D'Urville I	0			Y			
	Unnamed S 2969 Smylies Arm D'Urville I	0			Y			
	Unnamed S 8235 Wells Ba D'Urville I 173.905297 40.802289 m	15			Y			
	Unnamed S 2967 Wharairiki Ba 173.846920 40.864314 m	0			Y			
	D'Urville I, Moawhиту L outlet, Moawhиту wetland	D'Urville I, Moawhиту L outlet, Moawhиту wetland 2957	98	Y		Y		
D'Urville I	Unnamed S 8232 Greville H D'Urville Island 173.789220 40.851079 m	0	Y					

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Endeavour In	Unnamed S 7649 Endeavour In 174.184235 41.101739 m	84	Y					
	Unnamed S 3063 Big Ba 174.146774 41.107888 m	98			Y		Y	
	Unnamed S 3046 Endeavour In 174.178578 41.085952 m	83			Y		Y	
	Unnamed S 3046 Endeavour In 174.178578 41.085952	83			Y		Y	
Flaxbourne R	Flaxbourne R 3241	2	Y					
Pelorus R	Pelorus R 3146	38	Y					
Pelorus Sound	Unnamed S 3080 Chance Ba	99	Y		Y		Y	
	Unnamed S 3104 Maori Ba 173.830072 41.172474 m	78	Y		Y		Y	
	Unnamed S 3092 Nydia Ba 173.778072 41.152610 m	90	Y					
	Unnamed S 3110 Nydia Ba 173.782968 41.175135 m	49	Y		Y		Y	
	Unnamed S 3085 Nydia Ba 173.784018 41.145981 m	97	Y					
	Unnamed S 3102 Nydia Ba 173.773985 41.173193 m	79	Y		Y			
Pt Underwood	Pt Underwood 3178	5	Y		Y			
Queen Charlotte Sound	Graham R 3150	81	Y		Y			

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS	
Queen Charlotte Sound	Unnamed S 7920 Hitaua Bay 1,696,893.077 5,431,272.021 m	1	Y		Y				
	Unnamed S 3137 Umungata Ba Grove Arm 1,678,784.256 5,432,620.644 m	100			Y				
	Unnamed S 3052 Endeavour In 174.185782 41.091692 m	99			Y				
	Unnamed S 3151 Ahuriri Ba	49			Y				
	Unnamed S 7883 Bottle Ba, Pelorus Sound	93	Y		Y				
	Unnamed S 7866 Fence Ba	96			Y				
	Unnamed S 3138 Kahikatea Ba	0	Y		Y				
	Unnamed S 7893 Monkey Ba	1	Y						
	Unnamed S 3054 Ship Cove 174.234437 - 41.093750 m	100			Y				
	Unnamed S 7931 Waikawa Ba 174.042099 41.268171 m	0			Y				
	Unnamed S 8210 Whatamango Ba 174.083437 41.258914 m	0			Y				
	Robin Hood B	Stace C 3188	88			Y		Y	

Catchment	Planning Unit	% Prot	I	K	BK	GK	SJK	CS
Taipare B	Unnamed S 2996 Big Ba 173.725391 41.013101 m	37	Y		Y			
	Unnamed S 3068 Ngawhakawhiti Ba 173.783495 41.113144 m	99			Y		Y	
Tennyson In	Unnamed S 3074 Duncan Ba 173.760452 41.117470 m	92	Y		Y		Y	
	Unnamed S 3051 Godsiff Ba 173.805397 41.093240 m	100	Y		Y		Y	
Tennyson In	Unnamed S 3071 Harvey Ba 173.756144 41.114318 m	86	Y		Y			
	Unnamed S 3033 Tawa Ba 173.824088 41.070318 m	100			Y		Y	
	Unnamed S 3057 Tuna Ba 173.754367 41.100236 m	90	Y		Y		Y	
Wairau R	Avon R 3220	37		Y				
	Goulter R 3222	98		Y				
	Opawa R 3201	1	Y					
	Seventeen Valley S 3205	1	Y					
	Tuamarina R 3194	25	Y	Y				
	Utewai C 3208	0	Y					
	Waihopai R 3232	48		Y				
	Wairau R 3195	24	Y					
	3196	5	Y					
Yelverton S 3202	1	Y		Y				

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waitata Reach	Unnamed S Waiona Ba 173.875763 41.002419 m	2990	98		Y	Y			
Waitohi R	Waitohi R	3171	27		Y	Y		Y	
Whites B	Pukatea S	3191	96			Y			

Appendix 13: Sites in the Canterbury region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, C = Creek, Ca = Canal, H = Harbour, L = Lake, Lg = Lagoon, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Lyell C	Lyell C	3599	0	Y		Y			Y
Waitaki R	Hopkins R	4038	64		Y				
Waitaki R	Waikakahi S	4079	0		Y				
Waitaki R, Waitaki R	Godley R	4034	71		Y				
Robinsons Ba	Unnamed S Robinsons Ba 1,596,860.353 5,154,524.531 m	3818	0	Y					
Akaroa H	Aylmers S	3831	43	Y		Y			
Akaroa H, Barrys Ba S	Barrys Ba S	3816	2	Y					
Akaroa H, Oteshore S	Akaroa H, Oteshore S	3821	0	Y		Y			
Ashburton R	Lambies S	3761	61		Y				
Ashley R, Waimakariri R	Saltwater C	3714	1	Y					
Avon R, Heathcote R	Avon R, Heathcote R	3735	5	Y					
Balguerie S	Balguerie S	3829	4	Y					
Black Miller S	Black Miller S	3584	87	Y	Y	Y			
Blue Duck C, Rakautara S to Hapuku R	Blue Duck C	3589	4	Y					
Boggy C, Harts C, L Ellesmere	Boggy C, Harts C, L Ellesmere	3858	1	Y					
Clarence R	Alma R	3575	100		Y				
	Clarence R	3578	32	Y		Y		Y	
	Wairau R	3223	84		Y				

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Conway R, Limestone S	Conway R	3622	8	Y	Y				
Halswell R	Selwyn R	3828	3	Y					
Heathcote R	Heathcote R	3737	10	Y		Y			
Horseshoe Lg	Horseshoe Lg	3988	0				Y		
Hurunui R	Hurunui R	3646	73		Y				
Kahutara R	Kahutara R	3606	27	Y					
Kowai R	Kowai R	3703	2	Y					
Kowhai R	Kowhai R	3602	85		Y				
L Ellesmere	L Ellesmere	66	8	Y					
L Forsyth	L Forsyth	3844	6	Y					
Lyttelton H	Te Wharau S	3782	0	Y					
Murrays Mistake	Unnamed S Flea Ba 1580407.966 5144990.446 m	3867	34	Y	Y	Y			
Oaro R	Oaro R	3613	20	Y					
Ohau S	Ohau S	3586	86			Y			
Okains Ba	Opara R	3801	0	Y					
Okarahia S	Okarahia S	3615	0		Y				
Opihi R	Tengawai R	3979	3		Y	Y			
Orari R	Orari R	3981	6	Y					
Otaio R	Otaio R	4005	19		Y				
Otanerito B	Narbey S	3853	0			Y			
Otanerito B	Otanerito B	3870	32			Y			
Pawsons S	Pawsons S	3810	6	Y					
Pegasus, Waimakariri R	Waimakariri R	4030	32	Y					
Rakaia R	Harper R	3706	69		Y				
	Lake S	3721	34		Y				
	Oakden Ca	3707	2		Y				
Saltwater C	Saltwater C	3997	1	Y					
Stony B	Stony B	3860	1	Y		Y			
Waihao R	Waihao R	4015	5	Y					
Waikewai C	Waikewai C	3864	3	Y					
Waimakariri R	Broken R	3705	45		Y				

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waimakariri R	Waimakariri R	3672	95		Y				
	Styx R	4030	32	Y					
Waitaki R	Hen Burn	4059	5		Y				
	Macaulay R	4033	83		Y				
	Pukaki R	4051	80		Y				
	Tekapo R	4043	27		Y				
Waitaki R	Waitaki R	4036	40		Y				
		4037	50		Y				
		4040	32		Y				
		4041	64		Y				
		4054	7		Y				
Washdyke C	Washdyke C	3989	2	Y					
Waitaki R	Waitaki R	4080	7	Y					

Appendix 14: Sites in the West Coast region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: Bch = Beach, C = Creek, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Little Wanganui R	Little Wanganui R	3306	85	Y	Y	Y			
Arahura R	Arahura R	3424	0	Y					
Arawhata R	Arawhata R	3543	99		Y				
Arawhata R	Arawhata R	3572	100		Y				
Buller R	Buller R	3335	90		Y			Y	
	Maruia R	3378	84		Y				
	Warwick R	3372	72		Y				
Cascade R	Cascade R	3555	95		Y				
Cook R	Cook R	3488	87		Y				
Five Mile Bch, Five Mile C	Five Mile C	3463	100	Y		Y	Y	Y	
Five Mile C	Five Mile C	6865	100				Y		
Greigs, Kararoa C	Greigs, Kararoa C	3394	91		Y				
Grey R	Arnold R	3413	71				Y		
	Grey R	89	99				Y		
	Grey R Mawheranui	3404	43	Y		Y	Y		
		3391	91		Y				
	Haupiri R	3407	80		Y				
Haast R	Haast R	3531	96	Y	Y	Y			
Hapuka R	Hapuka R	3534	92	Y					
Hokitika R	Hokitika R	3427	65	Y			Y		
	Kaniere R	3431	78	Y	Y		Y		
	Kokatahi R	3433	75				Y		
Hokitika R	Mahinapua C	3428	17				Y		

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Houhou C	Houhou C	3426	24			Y			
Houhou C	Little Houhou C	3425	12	Y		Y			
Jones C	Jones C	3327	41			Y			
Kahurangi R	Kahurangi R	3263	100			Y	Y		
		3264	100			Y		Y	
Kapitea C	Kapitea C	3418	42	Y					
Karamea R	Karamea R	7026	0	Y					
		3300	93		Y				
Kerr S	Kerr S	3325	72			Y			
Manakaiaua R	Manakaiaua R (Hunts C)	3496	87			Y			
McCullochs C, McCulloughs C, Whataroa R	Whataroa R	3457	61	Y	Y				
Mikonui R	Mikonui R	3435	43			Y			
Moeraki R	Moeraki R	63	99	Y			Y		
		63	99	Y			Y		
Moeraki R	Moeraki R (Blue R)	3518	98			Y		Y	
Mokihinui R	Mokihinui R	3314	85	Y	Y	Y			
New R	New R	3410	42			Y			
New R, Saltwater C, Saltwater C	New R, Saltwater C, Saltwater C	3409	16				Y		
Ohinetamatea R	Ohinetamatea R (Saltwater C)	3491	90		Y	Y			
Okari R	Okari R	3349	0	Y		Y			
Okari R (Okari Lg)	Okari R	3349	29			Y	Y	Y	
Okarito R	Okarito R	3461	84			Y		Y	
Oparara R	Oparara	3296	95	Y	Y	Y			
Orowaiti R	Orowaiti R	3338	44	Y		Y			
Otumotu R	Otumotu R	6805	100			Y			
Paringa R	Paringa R	3510	97		Y		Y	Y	
Poerua R	Poerua R	3454	76	Y	Y	Y			
Punakaiki R	Punakaiki R	3374	96				Y		
Serpentine C	Serpentine C	3415	38	Y	Y	Y	Y		
Smoothwater R	Smoothwater R	3541	99				Y		
Taramakau R	Taramakau R	3411	82		Y				

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Te Rahotaiepa R	Te Rahotaiepa R	3442	17	Y	Y				
Totara R	Totara R	3434	61	Y					
Turnbull R	Turnbull R	3533	91		Y				
Waiatoto R	Waiatoto R	3539	99		Y				
		3540	99	Y		Y	Y		
Waiho R	Waiho R	3464	67	Y	Y	Y	Y		
Waimangaroa R	Waimangaroa R	3329	44		Y				
Waimea C	Waimea C	3419	32		Y				
Wanganui R	Wanganui R	79	100	Y	Y	Y			
Whakapohai R	Whakapohai R (Little R)	3519	100				Y		

Appendix 15: Sites in the Otago region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: Ba = Bay, C = Creek, H = Harbour, Hd = Head, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS	
Akatore C	Akatore C	4277	1		Y					
Big C	Big C	4286	26		Y					
Bull C	Bull C	4291	6			Y				
Catlins R, Owaka R	Catlins R, Owaka R	4324	17	Y		Y				
Clutha R	Clutha R	34	1		Y					
		37	2		Y					
		4093	52		Y					
		4136	25		Y					
		4145	55		Y					
		4148	45		Y					
		4175	2		Y					
		4311	0							Y
		4312	6		Y					Y
Clutha R, Matukituki R	Matukituki R	4091	75		Y					
Drivers C	Drivers C	4216	32	Y						
Fern S	Fern S	4265	0			Y				
Kaka Pt	Kaka Pt	4317	13			Y				
Kakanui R	Waiareka C	4154	0	Y						
Kakanui R	Island S	4153	0	Y	Y	Y				
Kuri Bush	Kuri Bush	4269	0			Y				
Orokonui C, Orokonui Estuary	Orokonui C	4215	53			Y				
Otago H	Smiths C	4236	0				Y			
Otago Peninsula	Battery C	6661	0			Y				
Otokia C	Otokia C	4262	8				Y			

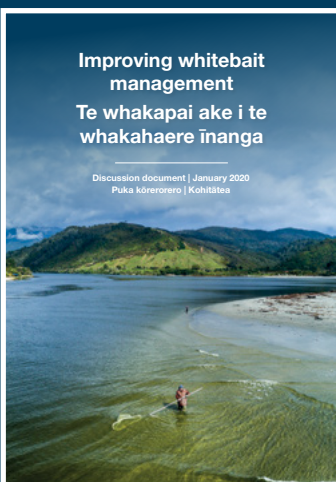
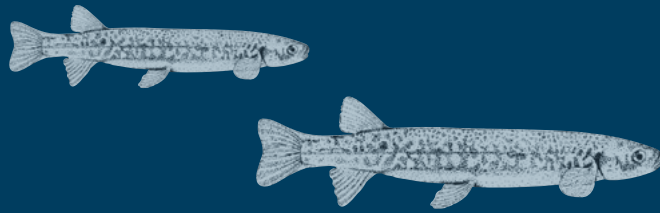
Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Owaka R	Owaka R	4324	17	Y	Y	Y			
Purakanui C	Purakanui C	4221	3			Y			
Shag R	Shag R (Waihemo)	4190	2	Y					
Taieri R	Taieri R	4274	6	Y		Y	Y		
Taieri R	Waipori R	4267	18	Y			Y		
Trotters C	Trotters C	4182	18	Y					
Waikouaiti R	Waikouaiti R	4202	8	Y					Y
Wangaloa C	Rocky Valley C	4297	0			Y			
Wangaloa C	Wangaloa C	4300	0				Y		

Appendix 16: Sites in the Southland region that may be appropriate for selection as refuges for the whitebait species

Note: Feedback is sought on the sites below, in relation to their potential value as refuges for the whitebait species. Fishing exclusions would be proposed for selected sites from the list below, taking effect from the coast up to and including the planning unit identified (in which adult populations of whitebait species are known to occur). Feedback is also sought on appropriate periods for fishing exclusions to apply at any particular site. It is not proposed that whitebait fishing is excluded from all of these waterways. Rows highlighted in blue are known whitebaiting locations. Sites: B = Brook, Ba = Bay, Bc = Beach, C = Creek, Ch = Channel, H = Harbour, Hd = Head, I = Inlet, L = Lake, R = River, S = Stream. Planning unit = all catchments of third order or less, or for larger catchments, third and higher order sub-catchments and the main stem of the waterway. % Prot = % of the Planning Unit that is public conservation land. % Prot = % of the Planning Unit that is protected. Species: Ī = īnanga, K = kōaro, BK = banded kōkopu, GK = giant kōkopu, SJK = shortjaw kōkopu, CS = common smelt.

Catchment	Planning Unit		% Prot	Ī	K	BK	GK	SJK	CS
Aparima R	Aparima R	5044	4	Y					
Aparima R	Hamilton Burn	4796	12		Y				
Aparima R	Otautau S	4942	2			Y			
Cameron C	Cameron C	4964	20			Y			
Cook C	Cook C	5114	30	Y		Y			
Edwardson Sound	Shallow C	4903	101		Y	Y			
Freshwater R (Paterson I)	Freshwater R	5162	100	Y		Y	y		Y
Mataura R	Otamita S	4859	0		Y				
Oreti R	Kingswell C	5063	10			Y			
Oreti R	Oreti R	4704	64		Y				
Pouahiri C	Pouahiri C	5048	2			Y			
Stewart Island	Mill C	5158	49				Y		
Stewart Island	Smoky C	5124	100		Y				
Stewart Island	Murray R	5133	100		Y	Y			
Stewart Island	Unnamed S Stewart I 1,210,407.869 4,815,653.354 m	5612	100			Y			
Stewart Island	Yankee R	5120	100		Y				
Titiroa S	Titiroa S	5086	0	Y	Y	Y			
Unnamed stream Haulashore Cove	Unnamed S Haulashore Cove	6245	100	Y	Y		Y		
Unnamed Stream Knife and Steel H	Unnamed S Knife and Steel H	4991	100	Y		Y	Y		
Waiau R	Mararoa R	4681	60		Y				
Waiau R	Waiau R	4968	40	Y	Y				

Catchment	Planning Unit		% Prot	I	K	BK	GK	SJK	CS
Waiau R	Wairaki R	4850	43		Y				
Waikawa H	Waikawa H	5100	0			Y			
Waikawa R	Waikawa R	5097	37	Y	Y	Y			
Waituna C Lg, Waituna Lg	Waituna C Lg, Waituna Lg	5095	9	Y			Y		
Waituna Lg	Waituna Lg	5094	38	Y			Y		
Woodhen Cove	Woodhen Cove	4760	101		Y	Y			



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