



Te Uru Rākau

Forestry New Zealand

Climate Change Response Act 2002: Permanent Forests and Operational Improvements

Prepared by Te Uru Rākau

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Coversheet: Permanent forests and operational improvements in the Emissions Trading Scheme

Advising agency	Te Uru Rākau, Ministry for the Environment
Decision sought	Approval to create a new permanent forest activity and to implement operational changes in the Emissions Trading Scheme
Proposing Ministers	Hon James Shaw; Hon Shane Jones

Summary: Problem and Proposed Approach

Problem Definition
<p><i>What is our objective?</i></p> <p>New Zealand is committed to taking action on climate change. In 2016, New Zealand ratified the Paris Agreement, which creates an expectation for all countries to reduce domestic emissions and transition to a low-emissions future. Forestry plays an important role because it is our most significant carbon sink for absorbing emissions.</p> <p>The ETS is the Government's key tool for supporting New Zealand to meet emission reduction targets through incentivising reductions in emissions and investment in forests as carbon sinks. We have identified changes to the ETS that could incentivise increased carbon storage in a range of forest types including permanent forests:</p> <ul style="list-style-type: none">• a package of operational changes to improve the way the ETS works for forestry participants; and• the creation of a new permanent forest activity in the ETS (and disestablishment of the previous scheme for earning carbon for permanent forests) <p>To support us to introduce these changes, this RIA provides analysis on a package of options that are intended to improve the ETS specifically for forestry participants and support the delivery of the following objectives:</p> <ul style="list-style-type: none">• increase ability of the ETS for forestry to help New Zealand cost-effectively meet its climate change targets• improve ETS forestry operations• support New Zealand's broader climate change programme <p>Supporting people to establish more permanent forests will be important for New Zealand and there are approximately 1.16 million hectares of highly erodible land across the country, which is well suited for permanent, rather than rotational, forests. Meeting our long term international climate change commitments will require New Zealand to increase the amount of permanent forest planted and maintained in perpetuity. Permanent forests</p>

also deliver environmental co-benefits, including erosion control, biodiversity, better use of marginal land and improved water quality.

Permanent forests can be either indigenous or exotic species, or a mix of both. They are important for the long-term storage of carbon and provide an option for the permanent retirement of land in highly erosion-prone areas.

Status quo – what setting do we currently have?

For permanent forests, we currently have a scheme called the Permanent Forest Sink Initiative (PFSI) that offers owners of forests established in 1990 or later the opportunity to earn (New Zealand Units) NZUs for the carbon absorbed by their forests. Participants enter into a covenant with the Crown, in perpetuity, with the right to terminate after a minimum term of 50 years, and repay the balance of NZUs earned over the 50 year period. If participants choose to take this opportunity to deregister their forest land from the PFSI they are subject to the conditions of their covenant, including the liability to repay the full NZU balance the forest land has been allocated over the 50 year period. A number of participants in the PFSI are currently able to realize a higher market premium for their NZUs than ETS participants with rotation forests.

A year after the PFSI was established, the ETS was developed under the Climate Change Response Act 2001 (CCRA), and introduced new provisions for rewarding carbon stored in forests established after 31 December 1989. These can be registered in the ETS on a voluntary basis. Participants registering eligible post-1989 land in the scheme are entitled to receive NZUs for increases in carbon stocks and must pay units for decreases. No covenant is required as the CCRA meets the same requirements.

What is the problem – why introduce a change?

Permanent forest ETS activity

We want to change the settings for permanent forests because the PFSI is underperforming and retaining it creates an inefficient dual system for the Crown to reward carbon stored in New Zealand's forests. The PFSI has not achieved the expected number of participants or area in permanent forestry since it came into force in 2008. For example, the last new registration was in 2014 and around 2.75 times the area of native forest is registered in the ETS (vs. the PFSI). The PFSI has been reviewed twice, in 2013 and 2015, and was found to be complex for participants, costly to join, and is difficult to comply with in comparison with the ETS.

Operational ETS changes

At the same time, we want to introduce operational improvements to the ETS because the 2017 ETS review found potential for improving the way the scheme operates for forestry. There are numerous operational and technical issues with the forestry provisions of the scheme that need to be improved, clarified or corrected. Operational complexity deters some people from joining the ETS and receiving financial benefit for the carbon stored in

their forests. These problems have reduced the potential of the ETS to incentivise new forest planting particularly by small forest owners.

Opportunity to make these changes to the Climate Change Response Act 2001 (CCRA) as a wider set of amendments is introduced

These changes align with a wider set of climate change focused proposals. These include the ‘Zero Carbon Bill’ and a series of changes to the CCRA to ensure that the ETS is an effective and efficient, credible and fit for purpose tool to support the transition to a low emissions economy. The introduction of these wider changes to the CCRA fosters the opportunity to make these operational improvements and create new provisions for permanent forests while the legislation is under revision.

Proposed Approach

Permanent forest ETS activity

For permanent forests we have analysed the impacts of disestablishing the government’s existing scheme for rewarding carbon stored in permanent forests (the PFSI) and creating a new category inside the ETS. This proposal could simplify the way permanent forests owners can access carbon units for the carbon stored in their forests. It involves:

- introducing a Permanent Post-1989 forest category into the ETS;
- disestablishing the PFSI; and
- offering current PFSI participants the choice to either leave the scheme or transfer their forests into the Permanent Post-1989 forest ETS category.

This new ETS activity will share the majority of the definitions and operational detail with the existing post-1989 forest activity in the ETS. The key point of difference will be that permanent post-1989 forest will have two conditions on it:

- The participant must sign up to the ETS for a non-clear fell period of 50 years (if participants choose to deregister their forest land from the Permanent Post-1989 ETS activity after 50 years, they will then be liable to repay the full NZU balance earned over the 50 year period); and
- during this non-clear fell period, the forest must remain ‘forest’ as defined by the CCRA over its total area, limiting the removal of trees to areas less than 1 hectare in size.

To ensure that a market premium for permanent forest NZUs can be achieved, NZUs issued for carbon stored in a permanent post-1989 forest in the ETS will continue to be ‘tagged’ as coming from a permanent post-1989 forest when they are first issued.

No covenant will be offered to permanent post-1989 forests under the CCRA, but Te Uru Rākau will work to simplify how these forest owners can register with other organisations who offer covenants, e.g. should they choose to share information on the forest.

Operational ETS changes

We have analysed the impacts of four operational changes to the ETS to further strengthen and improve the operation of the ETS specifically for forestry:

1. improving pre-1990 forest land offsetting to allow greater flexibility of land use;
2. simplifying the process to access exemptions from deforestation liabilities for areas of tree weeds (including wilding conifers);
3. excluding post-1989 land that is predominantly tree weeds from the ETS; and
4. improving access to existing exemptions for land in multiple-ownership e.g. land administered under the Te Ture Whenua Māori Act 1993 (and other land in similar situations).

These proposals have been amended in response to submissions received in consultation. The Ministry for Primary Industries (MPI), the Ministry for the Environment (MfE) and Te Uru Rākau publically consulted on the issues discussed in this RIA (amongst others). We received 147 submissions on the forestry ETS decisions and they were generally positive.

Public consultation workshops were held in Wellington, Auckland, Christchurch, Dunedin, Gisborne, Rotorua, Napier, New Plymouth, Nelson, and Whangarei, with over 600 attendees recorded. A separate Māori Leaders Workshop was also held in Wellington as part of the consultation.

Section B: Summary Impacts: Benefits and costs

Who are the main expected beneficiaries and what is the nature of the expected benefit?

What will these proposals achieve?

Permanent forest ETS activity

Benefits for New Zealand

Creating a permanent forest activity in the ETS is intended to simplify the administration and reduce the costs of crediting land owners for the carbon stored in permanent forests.

The changes are likely to increase the amount of permanent forest registered in the ETS (which reduces the incentive to deforest, at present registered forests face a deforestation liability, while forests outside the ETS do not). Increasing the amount of permanent forest is valuable for the Crown because increasing the amount of carbon stored in New Zealand forests reduces the costs of meeting our emissions targets (both domestic and international).

In addition, forests offer a range of ecosystem services. Properly-sited forests contribute to the environmental (e.g. carbon sequestration, erosion control, biodiversity), economic

(e.g. timber, honey), social (e.g. recreation opportunities) and cultural (e.g. Mātauranga Māori) wellbeing of the landowners, local communities and New Zealand.

It is estimated that the benefit from the changes proposed in this paper will be valued at between \$404 million and \$541 million in net present value.

Benefits for participants

These changes will also reduce the administrative burden and costs for participants with permanent forests. This is likely to make establishing permanent forest a more attractive and viable option for land owners by making it easier to access a potential revenue stream while a forest is growing.

For participants, administering permanent forests under the ETS also introduces some co-benefits including access to adverse events cover. The change will also make it easier for participants with rotation forests to transition into permanent forest if their forests prove unsuitable for harvesting due to environmental constraints.

Operational ETS changes

The technical and operational changes will help further to strengthen and improve the operation of the ETS specifically for forestry. Based on the analysis in this RIA, our proposals are expected to solve a number of problems that impact both existing and potential forestry participants. Implementing these changes will make it easier for people to participate in the ETS, reduce some unnecessary administration and make the system less complex. This could improve the ability of the scheme to incentivise afforestation and replanting.

The operational improvements proposed in this paper are primarily focused on improving access for land owners to existing options in the ETS. However, it is expected that two changes will significantly increase benefits to forestry participants:

1. Improving pre-1990 forest land offsetting to allow greater flexibility of land use. This option is expected to reduce the cost of conversion by around \$16,000 per hectare and enable higher value land uses (e.g. horticulture at \$200,000 per ha or dairy at \$30,000 per ha¹).
2. Improving access to existing exemptions for land in multiple-ownership e.g. land administered under the Te Ture Whenua Māori Act 1993. Accessing this exemption will increase the flexibility of these landowners to make management changes to multiply-owned land. It is expected to reduce the cost of conversion by around \$16,000 per hectare, and allow the landowners to access higher value land use.

¹ \$30,000 for dairy land and \$200,000 for horticultural land. REINZ media release, A Great Spring For Farming, dated 21 November 2018. In the sensitivity analysis we use \$30,000 and \$40,000 per ha (refer p59)

Conclusion

Based on the analysis in this RIA, these proposals are expected to solve a number of problems that impact both existing and potential forestry participants. There are many requirements that come with participating in the ETS that people find difficult. Processes are very challenging for forestry professionals to undertake. These changes are intended to support Te Uru Rākau to provide more effective support for participants and create a better service user experience in the ETS.

Implementing these changes will make it easier for people to participate in the ETS and will reduce unnecessary administration. Based on stakeholder feedback this will improve the ability of the scheme to incentivise afforestation and replanting.

Where do the costs fall?

Permanent forests

The majority of the cost will fall on the Crown as a result of transitioning PFSI participants to the ETS. This is estimated to be a one-off cost of around \$400,000; however, this will be recouped through reduced expenditure of \$60,000 per annum to maintain the PFSI. We estimate around \$350,000 to develop the operational policy and regulations to support implementation.

Operational improvements

We anticipate that most of the proposed operational improvements will result in reduced compliance costs for participants in the ETS. While there will still be some cost of participating in the scheme, it will be less than the status quo.

Due to proposed changes which will simplify tests for changes in participation and management, it is expected that it will be easier to access these options. This will increase the cost on the Crown as the regulator, due to increased transactions, but it is expected this can be absorbed in baseline funding (due to cost savings also stemming from these proposals).

What are the likely risks and unintended impacts, how significant are they and how will they be minimised or mitigated?

Permanent forests

The proposal to introduce permanent forests as a voluntary activity within the CCRA (Schedule 4) means it will remain a choice for forest and landowners to register. The proposal increases the flexibility of the ETS system, encouraging a wider range of participants to register forest land in the scheme (including farmers who may wish to use less productive areas of their farms for carbon farming).

There is a minor risk that forest owners will not be aware of what they are signing up to. This will be managed via clear obligations in the legislation, and informing participants of the implications before registration (e.g. through guidance and workshops). We expect to detect any emerging issues through ongoing monitoring for the ETS, and participant performance, and will be able to take corrective actions.

Operational improvements

There is a wider operational risk to the ETS due to the necessary redesign of Te Uru Rākau's ETS forestry software system (the Climate Change Information System). This redesign is needed to support the operation of the ETS into the 2020s. This issue will be covered later in the RIA to support the second part of the forestry ETS decisions in March next year.

Identify any significant incompatibility with the Government's 'Expectations for the design of regulatory systems'.

There is no significant incompatibility with the Government's expectations for the design of regulatory systems.

Section C: Evidence certainty and quality assurance

Agency rating of evidence certainty?

We are confident that the proposed policy direction (to create a voluntary permanent post-1989 forest activity in the CCRA, and remove the PFSI provisions from the Forests Act) will be broadly supported. This was the conclusion of two reviews of the PFSI through consultation in 2013 and 2015.

We are confident there are large areas of land² which would benefit from being in forest cover; that there is good potential for carbon forestry to encourage the establishment of forest on land; and that the introduction of a permanent post-1989 forest activity will enhance this benefit.

Stakeholder feedback tells us that landowners will respond positively to the change in incentives, given the additional incentive provided by a stable (high) carbon price³ in New

² Including approximately 1.16 million hectares of highly erodible land across the country, which is well suited for permanent, rather than rotational, forests.

³ The carbon price has remained above \$21 in 2018, and currently at \$24.70.

Zealand over recent years. However, we are not able to precisely estimate what the actual rate of uptake will be into permanent forests relative to this potential.

We are confident that the wider improvements to the ETS that result from these changes will support carbon forestry.

For the operational improvements, we have high confidence in the evidence base which consists of submissions on the 2015/16 review, subsequent interviews with ETS participants, forest and landowners, and case history of problem areas since 2008.

Quality Assurance Reviewing Agency:

A combined panel from MPI, MfE and Treasury was used to review this regulatory impact statement.

Quality Assurance Assessment:

A Quality Assurance Panel with representatives from the Regulatory Quality Team at the Treasury, Ministry for the Environment, and the Ministry for Primary Industries has reviewed the Regulatory Impact Assessment “*Climate Change Response Act 2002: Permanent Forests and Operational Improvements*” produced by Te Uru Rākau and dated 21 November 2018. The Quality Assurance panel considers that it partially meets the Quality Assurance criteria.

The RIA is very technical and the presentation could have been tightened to make the content clearer and concise. However, the problem definition and opportunity are clear, the proposal has been well consulted and the feedback from stakeholders is reflected in the analysis. The RIA acknowledges that the extent to which the potential benefits are realised is dependent on the uptake of the activity, which is uncertain. It will be important to develop a detailed implementation and monitoring plan

Section 1: General information Purpose

- 1 Te Uru Rākau are solely responsible for the analysis and advice set out in this Regulatory Impact Assessment, except as otherwise explicitly indicated.
- 2 This analysis and advice has been produced to support Cabinet decisions:
 - a) To create a new activity to support the registration of permanent post-1989 forests in the emissions trading scheme.
 - b) Around key operational detail of the permanent post-1989 forest activity, so
 - i. the Parliamentary Counsel Office can begin to draft the relevant legislation; and
 - ii.
 - iii. begin to develop regulations to implement the permanent post-1989 activity.
 - c) To close the Permanent Forest Sink Initiative (PFSI), and remove Part 3B from the Forest Act 1949, once existing PFSI participants are transitioned.
 - d) Four operational improvements for the forestry sector within the ETS.

A. Key Limitations

Cabinet is making decisions on the changes to the ETS in two stages.

- 3 Since the start of the ETS review in 2015, work has been undertaken as a package across the wider ETS, for all sectors in the ETS and for both permanent and rotational forestry. This resulted in the release of two discussion documents in August 2018: i) on the wider ETS and market settings and ii) on forestry changes.
- 4 However, officials intend to report back to Cabinet in two stages:
 - a) November 2018:
 - i. Tranche one of the ETS-wide decisions (addressed through another RIA)
 - ii. Part one of the Forestry decisions on Permanent forests, significant operational improvements and minor and technical improvements (addressed through this RIA).
 - b) March 2019 ('The March Paper'):
 - i. Tranche two of the ETS wide decisions
 - ii. Part two of the Forestry decisions; principally decisions on introducing averaging as an accounting methodology for post-1989 forest.
- 5 This two stage process has limited the analysis presented in this RIA on how:
 - a) The new permanent post-1989 activity will interact with the post-1989 activity forest. While this RIA can provide a general approach to how this transition will occur, we can only finalise these options and undertake detailed impact analysis once the averaging proposals are finalised.

- b) The improved Penalty and Compliance regime (as part of the wider ETS decisions in March) will be implemented for permanent post-1989 forests, and if any new Penalty and Compliance options need to be developed.

Previous consultation supported the creation of a new ETS activity

- 6 In late-2013 and mid-2015 two formal reviews (through consultation) of the PFSI were carried out. Those consultations focused on improving the administration of the scheme, attracting more participants and gathering ideas about how more marginal land could convert into permanent forests. Integrating the PFSI into the ETS was the clear conclusion of these reviews and meetings. This has formed the basis for the analysis in this paper, as there was little support for enhancing the PFSI in the Forests Act.

We expect permanent forests to be established on land that should already be in forest, but is not.

- 7 There is also some challenge in assessing the magnitude of the impact at a national level. Permanent forests will be a voluntary activity in the ETS, so the rate of uptake will be critical to achieving the benefits.
- 8 Native forests are more costly to establish and maintain than exotic forests. There is good evidence around the potential for landowners to earn additional income from carbon, and how this could promote land use change. By applying economic and geospatial analysis we have assessed the national potential to establish permanent forests. While this potential is understood, we can't precisely estimate the scope of land use change to permanent forest because it is hard to model behavioural responses to reductions in non-price barriers.
- 9 The changes being made to the ETS will increase confidence in NZU sales as a source of income (helping to overcome price barriers such as land price, cost of securing seedlings, and the cost of establishing basic infrastructure). Wider work by Government and NGOs will also assist in overcoming non-price barriers. For example, the One Billion Trees programme has identified options to provide differential grant rates to help overcome these additional costs, and promote the establishment of native forests. A permanent forest option in the ETS will complement this funding: the grants help overcome the high establishment cost of natives, while the carbon income will provide cash flow to assist in maintaining the forest, and an incentive to keep doing so.

Responsible Manager
Oliver Hendrickson, Director, Spatial, Forestry and Land Management, Te Uru Rākau

Objectives and criteria for this package of proposals

- 10 Below are the specific objectives and criteria relevant for developing proposals that address the forestry package issues identified as part of the 2015/16 review. These criteria are used across the forestry package.

ETS forestry package objectives	Criteria – How objectives are judged
Increase ability of the ETS for forestry to help New Zealand cost-effectively meet its climate change targets	- Increases incentives to store carbon in forests and harvested wood products - Allocates obligations and entitlements to support alignment with climate change targets
Improve ETS forestry operations	-Improves ease of compliance for participants -Administrative efficiency and effectiveness for regulators
Support New Zealand's broader climate change programme	-Consistent with wider climate change and wellbeing priorities -Provides durable regulatory certainty and predictability -Avoids unintended consequences

- 11 All the proposals in this RIS have been assessed against these criteria, however we apply a weighting to the criteria to reflect the different problem definitions:
- As permanent post-1989 forest is not expected to be harvested, the incentives that result are around storing carbon in forests. We do not expect a change in the storage of carbon in harvested wood products.
 - We have divided them into two categories: primary (key impacts) and secondary (where the change impacts other parts of the ETS or assists the ETS as a whole to meet the criteria). We assess all options against the primary criteria and where relevant, also assess options against the secondary criteria.

- 12 For the permanent forest options the table below has been used:

Primary Criteria (that address the problem definition)	How it will bring about outcomes
Increases incentives to store carbon in forests and harvested wood products	-Reduce ETS forestry financial risk and therefore increase the potential financial benefit from carbon when establishing new forests (both rotational and permanent) in New Zealand. -Retain the ETS disincentive to deforest (i.e. from the requirement to surrender NZUs) and maintain or enhance ETS incentives to store extra forest carbon (i.e. from forest management and storing carbon in harvested wood).
Administrative efficiency and effectiveness for regulators	-Reduce or minimise administrative cost to the Crown.

	-Ensure participant reporting is accurate and the Government can identify and manage non-compliance so scheme integrity is enhanced.
Improves ease of compliance for participants	<ul style="list-style-type: none"> -Reduce compliance costs for participants and ensure the system and rules are easy to understand. Doing so could encourage more people (particularly smaller foresters) to enter and remain in the ETS. - Changes to the rules should not result in unjustifiably high transition costs for participants.
Secondary Criteria	How it will bring about outcomes
Allocates obligations and entitlements to support alignment with climate change targets	<ul style="list-style-type: none"> -Increase alignment of entitlements and obligations (i.e. allocation of emissions units) with climate change target accounting for carbon storage and emissions from forestry. This will help to ensure the mitigation effort that the ETS drives reflects the level of difficulty New Zealand faces to meet its climate change targets. - Risk and burden sharing between the Crown (fiscal risk), participants, sectors and groups reflects level of contribution to climate change and mitigation ability.
Provides durable regulatory certainty and predictability	<ul style="list-style-type: none"> -Ensures businesses, forest owners and participants have certainty and predictability about the rules and market conditions. This will prevent unnecessary disruption to business plans, and improve investor and participant confidence in the ETS for forestry.
Avoids unintended consequences	<p>Avoiding unintended consequences includes:</p> <ul style="list-style-type: none"> -preventing the creation of perverse incentives; and -minimising and appropriately managing any potential inequity between participants, sectors and groups. <p>This will help to maintain the integrity and positive perceptions of the ETS for Forestry, particularly when eligibility decisions for new rules are being made.</p>
Consistent with wider climate change and wellbeing priorities	<p>Consistency with the Government's wider climate change and wellbeing priorities includes:</p> <ul style="list-style-type: none"> -Reflecting the Crown's responsibilities as a Treaty partner; -Encouraging economic growth and employment; -Supporting social and environmental resilience; -Supporting New Zealand's international reputation; and -Maintaining integrity of wider ETS settings.

- 13 As the operational improvements work stream is more focused on delivery of the ETS, the criteria is grouped slightly differently to the permanent forest section; “financial incentive to store carbon”, “administrative efficiency and effectiveness” and “ease of compliance” will be the primary criteria, and the rest will be secondary criteria as follows:

Primary Criteria	How it will bring about outcomes
Increases incentives to store carbon in forests and harvested wood products	<ul style="list-style-type: none"> -Reduce ETS forestry financial risk and therefore increase the potential financial benefit from carbon when establishing new forests (both rotational and permanent) in New Zealand. -Retain the ETS disincentive to deforest (i.e. from the requirement to surrender NZUs) and maintain or enhance ETS incentives to

	store extra forest carbon (i.e. from forest management and storing carbon in harvested wood).
Administrative efficiency and effectiveness for regulators	-Reduce or minimise administrative cost to the Crown. -Ensure participant reporting is accurate and the Government can identify and manage non-compliance so scheme integrity is enhanced.
Improves ease of compliance for participants	-Reduce compliance costs for participants and ensure the system and rules are easy to understand. Doing so could encourage more people (particularly smaller foresters) to enter and remain in the ETS. Changes to the rules should not result in unjustifiably high transition costs for participants.
Secondary Criteria	-How it will bring about outcomes
Allocates obligations and entitlements to support alignment with climate change targets	-Increase alignment of entitlements and obligations (i.e. allocation of emissions units) with climate change target accounting for carbon storage and emissions from forestry. This will help to ensure that the mitigation effort the ETS drives reflects the level of difficulty New Zealand has to meet its climate change targets. Risk and burden sharing between the Crown (fiscal risk), participants, sectors and groups reflects level of contribution to climate change and mitigation ability.
Provides durable regulatory certainty and predictability	-Ensures businesses, forest owners and participants have certainty and predictability about the rules and market conditions. This will prevent unnecessary disruption to business plans, and improve investor and participant confidence in the ETS for forestry.
Avoids unintended consequences	-Avoiding unintended consequences includes: -preventing the creation of perverse incentives; -minimising and appropriately managing any potential inequity between participants, sectors and groups. This will help to maintain the integrity and positive perceptions of the ETS for Forestry, particularly when eligibility decisions for new rules are being made.
Consistent with wider climate change and wellbeing priorities	Consistency with the Government's wider climate change and wellbeing priorities includes: -Reflecting the Crown's responsibilities as a Treaty partner; -Encouraging economic growth and employment; -Supporting social and environmental resilience; -Supporting New Zealand's international reputation; and -Maintaining integrity of wider ETS settings.

Constraints on the scope for decision making for this package of proposals

- 14 In developing these policy proposals we considered alternative options to improve provisions for permanent forests. The two reviews of the PFSI⁴, provided strong support for introducing a permanent forest option in the ETS, and our own analysis confirmed the value of this option.

⁴ Background on the two reviews can be found on the PFSI portion of the MPI webpage: <http://mpi.govt.nz/funding-and-programmes/forestry/permanent-forest-sink-initiative>.

- 15 Introducing a permanent post-1989 forest activity in the ETS will involve making a decision on the forest carbon accounting approach that will apply to these forests. Te Uru Rākau is currently working on accounting options for post-1989 forests in the ETS. They intend to bring decisions on this to Ministers in March next year. Only the impacts of decisions that can be made independently of those proposed accounting changes are considered here (linked issues will be covered in the March paper).
- 16 There are interdependencies with other government work programmes and objectives. These are discussed more fully in paragraphs below.

Part A: Regulatory Impact Assessment: creating a permanent post-1989 forest activity in the Emissions Trading Scheme

Section A1: Problem definition, status quo and objectives

Status quo

- 17 For permanent forests, we currently have a scheme called the Permanent Forest Sink Initiative (PFSI) that offers owners of forests established in 1990 or later the opportunity to earn emission units for the carbon absorbed by their forests. Participants enter into a covenant with the Crown, in perpetuity, with the right to terminate (and repay the full balance of NZUs earned) after a minimum term of 50 years. Participants in the PFSI are able to claim a higher market premium for their NZUs than ETS participants with rotational forests.
- 18 A year after the PFSI was established the ETS was developed and it introduced new provisions for rewarding carbon stored in forests established after 31 December 1989. These forests can be registered in the ETS on a voluntary basis. Participants registering eligible post-1989 land in the scheme are entitled to receive NZUs for increases in carbon stocks and must pay units for decreases in carbon stocks. The ETS does not require the use of covenants.

What regulatory system, or systems already in place?

- 19 The ETS, established under the CCRA, is the government's main policy tool to reduce emissions. The ETS creates the New Zealand carbon market. The CCRA, and its supporting Regulations and Standards, govern how the sectors within the ETS are managed. Post-1989 forests are one of these sectors and account for around 90 per cent of the number of participants.
- 20 The purposes of the CCRA and Part 3B of the Forest Act (the 'PFSI sections') specify the same objectives for landowners despite different framing. The broad purpose is to encourage activities that assist New Zealand in meeting international targets and reduce net emissions.
- 21 Forests in New Zealand are also subject to other, non-climate change, regulation including, but not restricted to, the provisions in the Forests Act 1949 (for the harvest

and/or milling of indigenous timber), the Resource Management Act 1991, and the National Environmental Standards for Plantation Forestry (this relates to forests established for commercial purposes that will be harvested).

Wider changes to how forests are treated in the ETS

- 22 Currently, a suite of changes to the ETS are being developed to ensure it is fit for purpose. As part of this, a package of forestry improvements is being proposed, which is intended to enhance how forestry can contribute to the wider purpose of the ETS. This package includes accounting changes, operational improvements (this paper) and the introduction of a permanent post-1989 forest activity (this section).
- 23 These changes create the opportunity to better tailor the accounting for forests in the ETS so that:
 - i. the post-1989 forest activity is focused on those forests where the intention is to harvest, or where the landowner wants the ability to exit the ETS at any point; and
 - ii. the (new) permanent post-1989 forest activity offers the opportunity for increased recognition to forests which are intended to remain forest for at least 50 years.

What is the policy problem or opportunity?

Permanent forest ETS activity

- 24 We want to change the settings for permanent forests because the PFSI is underperforming and retaining it creates an inefficient dual system for the Crown to reward carbon stored in New Zealand's forests. The PFSI has not achieved the expected number of participants or area in permanent forests since it came into force in 2008. For example, the last new registration was in 2014 and around 2.75 times the area of native forest is registered in the ETS (vs. the PFSI). The PFSI has been reviewed twice, in 2013 and 2015, and was found to be complex for participants, costly to join, and is difficult to comply with in comparison with the ETS.

Operational ETS changes

- 25 At the same time, we want to introduce operational improvements to the ETS because the 2017 ETS review found potential for improving the way the scheme operates for forestry. There are numerous operational and technical issues with the forestry sector provisions of the scheme that need to be improved, clarified or corrected. Operational complexity deters some people from joining the ETS and receiving financial benefit for the carbon stored in their forests. These problems have reduced the potential of the ETS to incentivise new forest planting particularly by small forest owners.

The opportunity and wider context

- 26 Resolving these issues will support New Zealand in achieving three key objectives:
 - increase ability of the ETS for forestry to help New Zealand cost-effectively meet its climate change targets;
 - improve the ETS forestry operations; and
 - support New Zealand's broader climate change programme.

27 These changes align with a wider set of climate change focused proposals. These include the ‘Zero Carbon Bill’ and a series of changes to the CCRA to ensure that the ETS is an effective and efficient, credible and fit-for-purpose tool to support the transition to a low emissions economy. The introduction of these wider changes to the CCRA fosters the opportunity to make these operational improvements and create new provisions for permanent forests while the legislation is under revision.

Long-term climate change goals

- 28 Establishing permanent forests provides the opportunity to store more carbon in the long-term, well beyond the crediting period offered by rotational forests (i.e. forests intended for clear-fell harvesting and replanting). Permanent forests may be of native or exotic species, or a mix of both.
- 29 Native forests sequester carbon at a slower rate than most exotics, but are likely to store a similar level of carbon over decades. Native forests will therefore receive fewer NZUs per year (so less potential income from unit sales), but will receive carbon credits for their full growth, so they offer a good option for long-term cash flow.
- 30 Permanent exotic species also have the potential to sequester carbon over the long-term (well above the long-term average carbon stock for that species under a rotational model), and forest owners should be able to earn NZUs for this storage.
- 31 Under the forestry rules that will apply to New Zealand’s 2030 target under the Paris Agreement, New Zealand is expected to receive recognition for the full carbon stock of permanent forests established after 1989 as the forests grow. This means New Zealand will be recognised for a larger amount of carbon sequestration over a longer period of time for permanent forests when compared with rotational forests. This means that forests established in the 2020s will contribute to meeting targets into the 2050s and beyond.
- 32 Establishing 100,000 hectares of permanent forests in the 2020s would sequester between 1 and 3 million tonnes of carbon dioxide by the 2050s. The lower estimate is based on native forest, while the upper estimate would be permanent pine forest (e.g. retired production forest on erosion prone land). In contrast, rotational pine forests established in the 2020s would be a negligible sink in the 2050s because they would have reached their average stock in the 2040s.

Erosion controls

- 33 There are an estimated 1.02 million hectares of grassland, and around 143,000 ha of current forest land which is classified in the red zone under the Erosion Susceptibility Classification (ESC). Under the National Environmental Standards for Plantation Forestry (NES-PF), red zone land requires a resource consent for many production forestry activities to reflect the need to manage risks to the environment.

- 34 Establishing permanent forests under the ETS on ESC red zone land is likely to reduce negative environmental impacts (e.g. erosion) while also providing a carbon income stream for the landowner.
- 35 On highly erodible land, newly planted exotics are likely to be effective in stabilising the land. In the short term, it has advantages over natives in being low cost, fast and easy to establish and tolerant of many conditions. Allowing these forests into a permanent post-1989 activity will provide cash flow to the landowner in lieu of harvest income, and allow the landowners to consider eventual replacement of the old exotics with native forests.

Permanent forests provide a range of other ecosystem services

- 36 Forests offer a range of ecosystem services. Properly sited forests contribute to the environmental (e.g. biodiversity), economic (e.g. honey, tourism), social (e.g. recreation opportunities) and cultural (e.g. Mātauranga Māori) wellbeing of the landowners, local communities and New Zealand.
- 37 Estimating the value of all the environmental, social and cultural benefits that permanent forests offer is challenging as many of these are difficult to value (e.g. biodiversity services), offer different benefits to local communities to those provided to landowners (e.g. reduced sedimentation) and/or are influenced by other income provided by the forest (e.g. honey, eco-tourism).
- 38 Te Uru Rākau commissioned Landcare Research to undertake an economic analysis of planting marginal land in the Manawatū into different forest types⁵. This analysis modelled three scenarios:
 - a) Exotic plantation forestry is planted where economic. This scenario best represent the likely mixed land use that will result from the policy changes in the ETS forestry package;
 - b) New afforestation areas are afforested with permanent, non-rotation indigenous forest; and
 - c) Land suitable for mānuka/kānuka are used for enterprises such as medicinal or commercial honey production.
- 39 Even when only including the benefits with a monetary value, all scenarios had a positive benefit to cost ratio (as high as 9.2) if forgone income from the land is not considered (bearing in mind the land is not suitable for other productive purposes or must change to forestry for other reasons, such as improving water quality). Even accounting for forgone production two (scenarios a and b) of the three scenarios had a positive benefit to cost ratio.

⁵ Walsh, et al., 2017, Valuing the Benefits of Forests,
<https://www.mpi.govt.nz/dmsdocument/26302/loggedIn>

Providing an effective tool for permanent forests to earn NZUs will also support the success of the One Billion Trees Programme

- 40 The Government has set a target to plant one billion trees over the next 10 years. This will require significant additional afforestation, in addition to the continued replanting of plantation forests as they are harvested.
- 41 A significant contribution to afforestation will be through the planting of native forests. The contribution of grant-funded forest to the one billion trees target will be less than that resulting from replanting and future regulatory changes, such as those to the ETS. However, grants will place a greater emphasis on native species, with a target of two-thirds of new grant-funded forest being native forest.
- 42 Native forests are more costly to establish and maintain than exotic forests. The 1 Billion Trees programme has identified options to provide differential grant rates to help overcome these additional costs, and promote the establishment of native forests. A permanent forest option in the ETS will complement this funding: the grant helps overcomes the high establishment cost of natives, while the carbon income will provide cash flow to assist in maintaining the forest, and an incentive to keep doing so.

Response from earlier consultation

- 43 In late-2013 and mid-2015 two formal reviews (through consultation) of the PFSI were carried out. The proposals focused on how:
- i. the scheme can be better administered;
 - ii. it can attract more participants; and
 - iii. more marginal land can be put under long-term forest cover
- This included the proposal to establish a permanent forest activity in the CCRA, rather than the Forests Act.
- 44 Feedback from these consultations provided officials with a strong indication of stakeholder preferences and priorities:
- i. There was strong support, especially from current participants, for a carbon scheme relating to permanent forests being included in the CCRA.
 - ii. Conversely, feedback was not as supportive of the proposal to remove covenants as the mechanism to protect the forest. Some participants felt that the covenant, as a contract between the Crown and the landowner, was an important aspect of the permanency of the scheme.
- 45 However, as this feedback was largely from existing PFSI participants (who already have a covenant) it must be considered in light of the fact that PFSI participation rates have remained low and static: since 2014 only one application to the PFSI to extend the area of an existing covenant has been received. Effectively if the landowner likes a

covenant they are willing to go to the effort of getting one, otherwise the covenant acts as a barrier to participation overall⁶.

- 46 We have tested the approach we propose here with the Climate Change Forestry Reference Group (CCFRG) and key stakeholders. Generally they were supportive of the proposal to create a permanent forest activity.
- 47 We consulted again in August and September 2018 on the creation of a permanent forest option in the ETS and detailed design considerations. There was strong support for the overall direction proposed in the discussion document, with some individual design details requiring additional explanation to address the concerns raised.

Section A2: Options Identification & Impact Analysis for Creating a Permanent Post-1989 Forest Activity in the Emissions Trading Scheme

Improving provisions for incentivising more carbon to be stored in permanent forests

The options we considered

- 48 We have considered four options to recognise the long-term carbon sequestration of permanent forests:
 - (1) Status quo;
 - (2) Improving the status quo;
 - (3) Discontinue the PFSI and require all forest to be registered as post-1989 in the ETS; or
 - (4) Create a new permanent forest activity in the ETS and discontinue the PFSI.

These options have been informed by stakeholder feedback

- 49 Reviews in late-2013 and mid-2015 of the PFSI (through consultation) were carried out. There was strong support, especially from current participants, for a carbon scheme relating to permanent forests being included in the CCRA.

Approach to analysis

- 50 We undertook a two part process in analysing the options:
 - (1) Identify the preferred legislative treatment to recognise the long-term carbon sequestration of permanent forests; and
 - (2) Identifying the design considerations which result from that preferred option, and are unique to a permanent post-1989 forest activity.

⁶ Recall that the ETS has 33,000 ha of native forest registered vs. the PFSI's 12,000ha.

- 51 Options (2) and (3) were discarded, and are not detailed in this impact statement, though more detail on these options is in Appendix One.
- Option 2 was rejected as it would still require the use of the complex, and costly, covenant and/or would require significant duplication of the CCRA in the Forest Act.
 - Option 3 was rejected as the ability to differentiate the NZUs issued to permanent post-1989 forest is a key part of the value proposition to landowners of establishing these forests.

Option 1: The status quo, retaining the PFSI within the Forests Act

- 52 Numbers participating in the PFSI have remained static since 2014 (and only one existing participant applied to increase their registered area) so this option is not encouraging additional long-term carbon storage, and is discarded.

Option 4 (Preferred): create a new permanent post-1989 forest activity in the ETS

- 53 The proposed approach would create a new permanent post-1989 forest activity within the ETS and discontinue the PFSI. It involves transitioning existing PFSI participants to the ETS and the removal of Part 3B of the Forests Act.
- 54 Throughout the design detail of the permanent post-1989 forest activity we are careful to ensure that the permanent post-1989 forests receive at least equal, or superior, treatment to forests which are under the Permanent Forest Sink Initiative. As a result, we can remove the PFSI from the Forests Act, and offer the PFSI participants the option of moving to the ETS or exiting carbon forestry.
- 55 However, Te Uru Rākau considers the risk of exit from carbon forestry is low for a number of reasons:
- Around half the area in the PFSI is registered in a perpetual covenant so carbon forestry represents the best opportunity to get an income from this land (as the owner will earn the same number of NZUs);
 - The majority of the forest land outside of covenants has been established on land where the best use is permanent forests and/or as part of investments which require carbon income to be viable. It is expected that these landowners will move over to the permanent post-1989 option to maintain their flow of NZUs in order to continue receiving the return on investment, while also gaining the benefits from the permanent post-1989 forest option (e.g. a simpler scheme and adverse events cover); and
 - If forest land is not transferred into the ETS, and attempts to be re-registered into the ETS are made later we would need to re-assess this land based on the current information.
- 56 We will ‘back date’ the 50 year non-clear fell period for these transferred participants to the date when they registered in the PFSI.

What option, or combination of options, is likely best to address the problem, meet the policy objectives and deliver the highest net benefits?

- 57 Overall the Ministry recommends that a permanent forest post-1989 activity is included in the CCRA, rather than the Forests Act. This activity will share the majority of the definitions and operational detail with the existing post-1989 forest activity in the ETS, with the key point of difference being that permanent post-1989 forest will have two conditions on it:
- a) It must sign up to the ETS for a non-clear fell period of 50 years; and
 - b) During this non-clear fell period, the forest must remain ‘forest’ as defined by the CCRA over its total area. Effectively this means there is a clear-fell limit on the forest so the largest potential clearance will be less than 1 hectare in size.
- 58 Detailed design features of this option are analysed in the next section. We propose the following features be implemented:
- a. Units issued for sequestration in a permanent post-1989 forest will be ‘tagged’ as coming from a permanent post-1989 forest when they are first issued. We will retain the flexibility to add additional information to this tag by creating the ability to define the tag using regulations;
 - b. No covenant will be offered under the CCRA, but Te Uru Rākau will work with PFSI participants and other organisations should land owners wish to move to a private covenant; and
 - c. It is recommended that when 50 year non-clear fell conditions are completed, participants are presented with three options for that area of forest:
 - i. Re-commit to another non-clear fell period of 25 years;
 - ii. Change the forest’s registration to post-1989 forest (subject to the prevailing accounting approach at the time) and surrender units for any carbon stock change; or
 - iii. Exit the ETS and repay all units received.

What will implementing the preferred option help us to achieve (including cost benefit analysis findings)?

- 59 This option will increase the net incentive to establish permanent post-1989 forests due to simpler administration, easier compliance and a more consistent and predictable regulatory environment.

Summary of the impacts revealed by the cost benefit analysis of this option

Costs and benefits of a simpler application process in the ETS

- 60 The primary benefit of moving the crediting option for permanent forests into the ETS is to make it easier for participants to register their forests in a scheme that will enable them to access NZUs for the carbon stored in their forests.⁷

⁷ PWC has developed a model to assess the costs and benefits from the proposals in this paper. The overall results of the cost benefit analysis are presented in section 5 of the RIA.

- 61 Registering forest land in the ETS avoids the requirement under the PFSI to register a covenant for the forest land they are registering in the scheme. Establishing a covenant is expensive and involves legal fees and more complex mapping, therefore each participant will save up to \$4,800 per application to register forest land⁸.
- 62 It is expected there will be other, ongoing, benefits from the preferred option including:
- Removing the long term need (that comes with a covenant) to engage with the Crown, every time a new interest is granted over the land, will save participants time and money (for example when applying for a mortgage for the land).⁹
 - Having a single approach to permanent post-1989 forest will remove compliance risk and complexity (for the Crown and the participant) that results from a range of different approaches (e.g. participants may have some areas with a covenant and some not and find it difficult to keep track of the different requirements that result from this).
 - All the forest areas registered to a participant will be considered, by the regulator and scheme administrators, as one forest, which will reduce the cost of filing emissions returns.¹⁰
- 63 The majority of the benefit to the Crown comes from removing the inefficiencies introduced by running a dual system for crediting carbon stored in New Zealand's forests. The PFSI is currently supported by a paper based system which would require upgrading to a digital system if the scheme was retained. Disestablishing the PFSI also avoids the expense of this upgrade.

Costs and benefits of increased participation of permanent forests in the ETS

- 64 Simplifying the permanent forest option is expected to increase the amount of permanent post-1989 forest that is registered to earn NZUs in the ETS. We expect that a range of different types of permanent forest will be registered in the ETS. We have selected three illustrative forest types to quantify the financial benefits for participants registering permanent forest in the ETS¹¹.

⁸ Up to \$5,400 per covenant less the cost of the current ETS registration of around \$600.

⁹ This has been advised by stakeholders but not been quantified.

¹⁰ For example each covenant requires a separate return, and, if the forests are over 100 ha, a separate Field Measurement Approach (FMA) data collection every five years (costing at least \$10,000). On entering the ETS the participant will be able to combine these areas into one return and only have one FMA data collection.

¹¹ These are detailed in Appendix 3, and will be formalised in the modelling report once finalised.

	Per hectare	
	Net present value (over 100 years) at 8% discount rate ¹²	
	Small forest (20ha)	Large forest (110ha)
A Retirement of low quality (e.g. erodible) land and allow native forest to naturally regenerate. ¹³	\$3,500	\$2,400
B Choosing not to harvest established pine, forgoing harvest income	\$2,500	\$2,600
C Plant natives on bare land with Manuka honey income until planted tall natives emerge ¹⁴	\$2,300	\$2,100

65 We assume that 3,590 ha of permanent forest land will be registered in the new category each year¹⁵ this is based on:

- a) 3,390 ha of native forests (scenario A and C) which is comparable to the average annual registration of native forest in the ETS since 2008.
- b) 200 ha of established pine (scenario B) which is 0.5% of the current area harvested nationally.

We believe this assumption is conservative as there is 1.1 million ha of erodible land.

66 We expect annual benefits to be \$9.5 million¹⁶. When the land owner makes the decision to move to permanent post-1989 forest we record the full net present value to be captured in the year the decision is made. For example all land (3,590 ha) that become permanent post-1989 forest in 2025 is recorded as a benefit in 2025, even though it is realised over a longer period.

67 By 2030, the new policy will be in place for 10 years and we expect 35,900 ha of forest land to be registered in the ETS. This would result in \$95 million additional cash flow¹⁷ to forest participants.

¹² These are the net present value from the increases in revenue (e.g. sale of NZUs and any other income, e.g. honey income) less the cost that result from the policy change (e.g. forgone harvest income).

¹³ The difference between the small and large forests is due to the yield tables for large (FMA) forests having slower sequestration than the default tables.

¹⁴ The difference here is less than in scenario A as it is assumed that large forests record a higher carbon stock change per hectare from the tall natives coming through.

¹⁵ Refer Appendix 3 for a detailed explanation of the assumptions used.

¹⁶ This is the sum of the area being registered as permanent post-1989 forest multiplied by the net present value of the income these forests receive.

¹⁷ Discounted to net present value.

- 68 If carbon price were to follow the lower range in the Productivity Commission's modelling the annual benefits to be \$15.6 million for the 3,590ha being registered as permanent post-1989 forest.
- 69 The increased establishment of permanent post-1989 forest will benefit New Zealand by reducing net emissions. This will assist us in meeting our long term emissions reduction targets (e.g. the 2050 target which was recently consulted on and our Paris Agreement commitments). We do not quantify this in the cost-benefit analysis as that benefit is closely linked to uptake and other decisions outside the scope of this RIA.

Costs and benefits of the transition to Permanent post-1989 forest.

- 70 The most significant costs the Crown faces from this proposal are those associated with the movement of creating the permanent post-1989 forest activity and moving existing participants over. These costs will occur over a number of years (to 2021 at the earliest) and can be included in operational baselines. Costs to the Crown are estimated to be:
- 1) \$407,500 to move PFSI participants to the permanent post-1989 activity and remove their covenants from the land titles.
 - 2) Up to \$370,000 to develop new operational processes to support the new permanent post-1989 activity, which will be part the usual refresh cycle.
 - 3) Up to \$400,000 contingency to cover moving existing permanent forests that are registered in the post-1989 forests into the new permanent post-1989 forest activity (e.g. remapping registered areas of forest). This assumes that all native forest currently registered in the ETS (33,000 ha) and an unknown area of exotic species move to permanent post-1989 forest.
- 71 There will be a slight increase in annual cost for the PFSI participants who move into the ETS due to the cost of the annual returns (which Te Uru Rākau does not currently charge for). However this is outweighed by the benefits in para 62.

Assessment of options against criteria

Options for the policy approach for recognising the long-term carbon sequestration of permanent forests		
Primary criteria	Option 1 PFSI (status quo)	Option 4 (Preferred) New permanent post-1989 forest activity in the ETS
Increases incentives to store carbon in forests and harvested wood products	0	<p style="text-align: center;">++</p> <p>A simpler approach that is aligned with the ETS will encourage participants to register permanent forests into the ETS. Recognition of permanence is likely to result in a unit price premium and access to voluntary markets, further increasing the return.</p>

Allocates obligations and entitlements to support alignment with climate change targets	0	+ A clear differentiation for permanent forests is expected to increase permanent afforestation which will make a positive contribution to the meeting target. This is due to the market premium some participants are able to realize for permanent NZUs.
Improves ease of compliance for participants	0	++ A single approach to carbon forestry and ETS registration will reduce the complexity of carbon forestry for participants, and reduce risks of accidental errors.
Secondary criteria		
Administrative efficiency and effectiveness for regulators	0	++ A single point of administration for carbon forestry would significantly improve administrative efficiency.
Provides durable regulatory certainty and predictability	0	+ A single legislative instrument for carbon forestry would significantly simplify the assessment of changes. Placing key aspects in the primary legislation will avoid differences developing (as it does between covenants in the PFSI).
Avoids unintended consequences	0	0
Consistent with wider climate change and wellbeing priorities	0	++ Will increase the certainty that these forests will receive unique recognition for their higher long-term carbon storage. By being in the ETS they will gain certainty that they will be considered as part of the primary policy response to climate change. Increasing the area of permanent forests may also increases other environmental co-benefits such as water quality and soil conservation.
Overall assessment	0	++

What do stakeholders think of the preferred option?

- 72 Eighty submitters responded to the question asking whether they supported the overall approach of creating a new permanent forest activity. 85% of respondents supported Te Uru Rākau's preferred policy approach (and 11% were unsure).
- 73 The most common reasons given for supporting the proposal were that it would encourage permanent forestry, would reduce costs and administration associated with the current PFSI, and would offer permanent post-1989 participants a suite of improvements that address long standing issues with growing permanent forests for carbon.¹⁸

¹⁸ For example, the application adverse events cover to permanent forests in the ETS addresses an ongoing issue where the cost of insurance to cover the units that need to be repaid in the event of an adverse event often exceeds the income from the forest.

What other impacts is the preferred approach likely to have?

- 74 If the preferred option is implemented we will need to determine the approach for the treatment of existing PFSI participants. This is discussed in the design consideration section ‘Transferring current PFSI participants into permanent post-1989 activities’.

Design considerations for implementing the preferred option: creating a new Permanent Post-1989 forest activity in the ETS

- 75 We have identified nine design considerations for the preferred policy option for administering permanent forests. These are:
- A. Are covenants needed?
 - B. How would units be earned by forest owners for permanent forests?
 - C. How will the “permanent post-1989 forest land” be defined in the ETS?
 - D. Permanence obligations and the non-clear fell period.
 - E. What forest owners can do after the non-clear fell period expires.
 - F. Early exit conditions.
 - G. Transfer from post-1989 to permanent post-1989 forest.
 - H. Start date of permanence obligations upon transfer from Post-1989 to permanent post-1989.

Design consideration A: Are covenants needed?

What is the policy problem or opportunity?

- 76 At present, participants registered in the PFSI are regulated by the use of a PFSI covenant. These were introduced because, at the time, the CCRA did not yet exist and there was no legislative framework to regulate land so that it could be eligible for NZUs. Covenants are a legally binding agreement that is registered on the title of the land and details the area of forest being included, the conditions on management and how the forest receives carbon credits. Under the CCRA legislation, covenants are not required to regulate land in the ETS.
- 77 The covenant is not needed for the Permanent Forest activity in the CCRA. This is because the types of provisions currently covered in the covenant will be covered by primary legislation, which provides greater weight of permanence. However, previous consultation demonstrates that some stakeholders view the covenant as an integral part of the agreement between the landowner and the Crown for carbon forestry.
- 78 Dispensing with a covenant will save landowners between \$1,900 and \$5,400 per covenant (refer below) and simplify the long-term administration of the land and of the ETS by ensuring that all ‘carbon forests’ are managed under one regime.

What options have been considered?

Option A1: (preferred) Dispense with the covenant and rely on CCRA legislation to prescribe the arrangements for the scheme.

Option A2: Allow participants to enter into private covenants on a voluntary basis.

Option A3: Retain the covenant as a regulatory device, but in a simplified form that is easier to understand.

- 79 Covenants required in Options A2 and A3 would be very simple and likely state the date of registration into the ETS, the areas of forest covered and refer to the CCRA (and its regulations) as governing the future operation of the forest covered.

Which is the proposed approach?

- 80 Option A1 is preferred i.e. dispense with the covenant and instead rely on the CCRA to regulate permanent post-1989 activities. This option is preferred over the status quo because covenants add significantly to the administrative burden for landowners, as they need to be negotiated individually, increasing cost. Not requiring a covenant will provide the opportunity to simplify the administrative processes for registration by adopting standard ETS processes and registration requirements. Relying on existing standard ETS arrangements should encourage entry into permanent post-1989 by minimising transactions costs for potential participants. This does not preclude landowners from entering into a private covenant should they wish to do so.

Administrative complexity of covenants

- 81 A covenant relates to a specific area of forest at the time of registration which has a number of impacts including:

- i. Adding land to existing registered forests is challenging and costly for landowners. A new covenant, or a re-negotiation of the existing covenant, is required for each additional area of forest, increasing the costs and time of registration. This undermines a landowner's ability to earn NZUs as the cost of altering the covenant would likely exceed the number of units received¹⁹:
- ii. Additional regulatory complexity when a participant has multiple covenants. The PFSI treats each covenant separately, which increases the cost of compliance (e.g. each covenant requires a separate return), measuring carbon stock²⁰ and the risk of gaming²¹.

¹⁹ For example: Native forest earns 7.8 NZUs per hectare over the first 5 years of growth. At \$25 per unit, 10 ha of new forest would need to be registered to offset the minimum cost of modifying the covenant (refer below). Unit price from Carbon Forest Services 1 Nov 2018.

²⁰ Currently, covenants over 100 ha are required to use the Field Measurement Approach (FMA). The FMA requires forest information to be recorded in a number of plot across the forest which is costly for landowners (between \$350 and \$600 per plot). The number of plots is linked to the size of the forest, and the need to have statistically accurate measurement: larger forests require fewer plots per hectare. For example 500hectares of indigenous forest would require a minimum of 25 plots if it was 'one forest' but a minimum of 75 plots if it was treated 5 forests of 100 ha.

²¹ If each covenant is treated a separate forest, landowners could register forests with low carbon stock in areas less than 100 ha(using the default yield tables to claim more units than otherwise they are entitled to) and areas of high carbon stock in areas over 100 ha to claim these units when they use the FMA approach.

- 82 Covenants create a ‘long tail’ of administrative complexity for the landowner and Te Uru Rākau, for example:
- i. As the Crown has an interest in the land (through the covenant) it would need to consent to any new interest being granted over the land, including mortgages and other new interests (e.g. easements).
 - ii. Any changes to climate policy not anticipated by the covenant would require a covenant by covenant agreement from all parties with an interest in the land to accommodate them.
- 83 The need for agreement on changes to the covenant has caused significant problems with the PFSI due to a lack of agreement to implement changes into existing covenants amongst the 60 PFSI covenant holders. There are at least 6 broad ‘classes’ of PFSI covenant to date within the PFSI and little agreement on even the most basic operational aspects; for example there are different deadlines for when PFSI participants need to report their carbon stock changes (some 31 March, some 30 June). This adds substantively to the administrative burden and complexity.
- 84 The covenant is seen as a substantial barrier to participation for Māori landowners. For the purposes of the Te Ture Whenua Māori Act 1993, a covenant is regarded as a form of land alienation as it encumbers the rights of subsequent landowners to deal with property. Dispensing with the covenant removes this barrier to participation in permanent forests in the ETS by Māori.
- 85 Those wishing to use a covenant on their land for the protection of the forest can use other covenant options including:
- Nature Heritage Fund;
 - Queen Elizabeth II National Trust;
 - Local authorities;
 - Ngā Whenua Rāhui (for Māori land); or
 - Private legal arrangements.
- 86 It is expected that these bodies would only accept covenants that meet their objectives, so while there may be a slight administrative burden, the overall benefits will be greater. QEII National Trust has begun to review the options for the covenants and what they offer and we are in conversation around how to enhance compatibility between their objectives and those of the CCRA. Non-carbon covenants have already proven attractive for PFSI participants with around 50 per cent of the area in the PFSI having a second covenant over the land.

The costs and benefits of a covenant

- 87 It is estimated that a landowner entering into a covenant increases their cost by between \$1900 and \$5400 per covenant relative to that land being registered in the ETS. In terms of hours, a PFSI application can take between 10 and 48 hours for a forest landowner or farm consultant to complete depending on the complexity of the application. This is broken down in the table below.

- 88 We have not identified any benefits from having a covenant compared to the current approach in the CCRA for post-1989 forest.

Additional costs of registering a covenant, compared to ETS participation.

Step in the application process	Low estimate (\$)	High estimate (\$)	Additional costs (\$) (GST inclusive)
Filling out the PFSI application form	828	828	includes \$575 in advice and \$253 for the time
Costs involved in mapping the proposed forest sink area	126.50	2024	This cost is largely driven by who undertakes the mapping. The higher range uses a consultant with 'on the ground' inspections.
Developing the forest sink plan	126.50	253	
Additional information requested from Te Uru Rākau before the application could be completed. (Affects 25per cent of applications).	31.63	506	
Reaching an agreement with Te Uru Rākau	253	506	
Time spent registering the covenant on the land title with LINZ including solicitor costs and LINZ lodgement charges.	483	1283	\$156.50 to lodge with LINZ; \$200 to \$1000 in solicitor costs
Notifying Te Uru Rākau in writing that the covenant is registered	63.25	63.25	
TOTAL	1911.88	5463.25	

- 89 If there is a standard covenant on offer, the additional cost of registering land into the ETS for Te Uru Rākau is estimated to be relatively negligible (around one hour of staff time per application). The most significant savings from not having a covenant will be realised over the long-term, as there will be no need to engage covenant holders on a case-by-case basis if anything changes.

Assessment of options against criteria

	A1. No covenant	A2. Voluntary covenant	A3. Mandatory covenant
Primary criteria			

Increases incentives to store carbon in forests and harvested wood products	0	0 Cost of covenant can be avoided	- The cost and administrative burden of needing a covenant will act as a barrier to registering these forests for carbon credits.
Allocates obligations and entitlements to support alignment with climate change targets	NA	NA	NA
Improves ease of compliance for participants	+ All registered forest is treated the same	-- Based on experience with the ETS today, only some areas having covenant would increase complexity and increase risk of compliance issues emerging	- Long tail of compliance would apply to all participants.
Secondary criteria			
Administrative efficiency and effectiveness for regulators	++ Ensures that the CCRA is the sole source of reference for climate policy, and reduced need to negotiate a covenant	- Will lead to increased uncertainty as covenants will apply inconsistently to areas of PP89 forest	- Will lead to increased uncertainty as covenants will apply all areas of PP89 forest
Provides durable regulatory certainty and predictability	0	- Risk that covenants are not updated, creating difficulties.	- Risk that covenants are not updated, creating difficulties.
Avoids unintended consequences	NA	NA	NA
Consistent with wider climate change and wellbeing priorities	0	-- As covenants are with the individual landowners there is a risk that differences will result between covenants being granted.	-- As covenants are with the individual landowners there is a risk that differences will result between covenants being granted.
Overall assessment	+	-	--
Table Key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than			

What do stakeholders think?

- 90 Responses as part of the 2013 and 2015 review indicate that the main issue arises around the covenant being overly long, requiring consent of all registered interest holders, and the difficulty of amending the covenant once it is registered. Mapping

can also add considerable costs for some applicants, for example, if the land area has valleys with quite narrow strips of vegetation along the streams.

- 91 In the consultation period 46 of 61 submitters (75%) preferred the proposed permanent forest category to operate without a covenant (15% were unsure). Many of the submitters supported their answer by highlighting the additional cost and a high administrative burden covenants can impose on the landowner.
- 92 There was generally good support for the government looking to simplify registration with other organisations for the same area of forest

Design consideration B. How NZUs would be earned by participants for permanent forests registered in the ETS

What is the policy problem or opportunity?

- 93 Providing clarity on the intended accounting approach will be important for investor confidence both to those establishing new forests and those moving from the PFSI.
- 94 NZUs are likely to provide primary income for the forest owner under the permanent post-1989 forest activity. This is due to the ability to forward sell NZUs for the carbon that will be stored in the forest as it grows. The sooner the accounting approach is decided the more confidence early investors will have, both for establishing permanent forests, and for entering into contracts to purchase the carbon stored in them.

What options have been considered?

- 95 Both the PFSI and the ETS currently use a stock change approach to crediting. Under this approach the forestry participant receives units for the net increase in the carbon stock in their forests.
- 96 Alternatively, these forests could be credited using an averaging approach where the participant receives units for the average carbon stock in their forests over a long period of time.
- 97 Regardless of the accounting approach used, NZUs from permanent post-1989 forests will continue to be ‘tagged’ as coming from a permanent post-1989 forest when they are first issued.

Which is the proposed approach?

- 98 We propose that the stock change crediting approach is used for the permanent post-1989 forest activity. Operational detail of how this stock change is calculated will be defined in the regulations (as happens now for post-1989 forests).

Analysis

- 99 Using a stock change accounting process is the preferred option, this is the existing accounting approach for the PFSI and should be used for permanent forests as it will recognise the full amount of carbon stored in the forest.
- 100 We propose to continue to define the methodology of crediting in the regulations. This approach allows future developments to be more easily accommodated, and also account for changes to carbon forest science and management.
- 101 For these reasons, we have assumed that forests are credited under the stock change approach in the cost benefit analysis that supports this RIA.

What do stakeholders think?

- 102 Of those who answered, 59 of the 71 (83%) agreed that the existing carbon stock change accounting process should be used for permanent forests as it will recognise the full amount of carbon stored in the forest. Only 4% of submitters did not support this proposal. Submitters who did not support the proposals either:
- favoured the participant being offered the choice of using the stock change or the averaging approach. Averaging was supported as it would allow the forests to be harvested in the future. As this harvest would be incompatible with the permanent post-1989 activity there is no advantage to offering averaging. The forest owner would receive the same net credits should they exit permanent post-1989 forest after the 50 year period concludes and move to post-1989 forest subject to averaging; or
 - viewed averaging as a means to update the yield tables for indigenous forests. Te Uru Rākau is considering the need to update the yield tables, however, as these are in the regulations it will be happening on a longer time frame and once more information is gathered on how indigenous forests sequester carbon²².

Design consideration C. How will permanent post-1989 forest land be defined in the ETS?

What is the policy problem or opportunity?

- 103 To enable PCO to draft the detail of the new permanent post-1989 activity, a decision is needed on what definitions and administrative processes will be used for permanent post-1989 forests.
- 104 Should there be a need to depart from the approach currently used by post-1989 forests, it will need to be justified.

What options have been considered?

²² The existing tables are largely based on manuka/kanuka regeneration as we have little evidence on the carbon sequestration in native forests undergoing succession to tall forest, this is expected as these forests were only established within the last 20 years and they are slow growing species.

105 Other than differentiating the legislative framework for permanent post-1989 forest from post-1989 forest in the ETS (discussed above), there is little need to frame the permanent post-1989 activity differently. We have not considered changing the characteristics.

Which is the proposed approach?

- 106 We propose that administration and operational process for both permanent post-1989 and post-1989 forests in the ETS would be very similar, offering increased simplicity for landowners and Te Uru Rākau. We would anticipate that both approaches would share:
- i. The process of registration into the ETS;
 - ii. The reporting and unit claim process for carbon change in the forests (including the use of the Field Measurement Approach);
 - iii. The monitoring of the forests;
 - iv. The exclusion of tree weed species from registration in the ETS.
 - v. The number of units the forest owner is liable to surrender.
- 107 Using the same details will reduce the administrative costs for Te Uru Rākau (as we only need to maintain a single system) and also reduce the complexity of the ETS for forest and land owners.
- 108 Once the permanent post-1989 forest activity is introduced (and cost of developing the supporting systems, above, has been met²³), there are not anticipated to be any additional costs to from sharing these operational details.

Adverse events

- 109 We propose that permanent post-1989 forest does not need to repay units in event of an adverse event that results in a short term carbon loss (e.g. fire) and will not earn units until the forest carbon stock has recovered.
- 110 Offering this option to permanent post-1989 forests will overcome a significant barrier to the uptake of permanent post-1989 forests, especially slower growing native species. Participants have reported that to manage risk they insure against the carbon stock loss from adverse events. As the cost of insurance is based on the current carbon stock and the carbon price, the cost of insurance can exceed the income from the NZUs received.
- 111 Offering adverse events coverage as proposed will:

²³ This is the \$400,000 to move existing post-1989 owners over to permanent post-1989 and \$370,000 to develop new operating policy

- i. remove the need for insurance for these adverse events and potentially improve the benefits per hectare around by \$200 per year (at \$25 per NZU) at negligible fiscal risk to the Crown,²⁴ and/or
- ii. reduce the downside risk of an adverse event causing the participant to surrender units (e.g. for events which they do not have insurance cover for). For example, a 25 year old native forest this would need to a surrender obligation of 215 NZU (valued at \$5375 at \$25 per NZU) per hectare which has been adversely affected.

112 The operational detail of this approach will be finalised once decisions have been made on if adverse events exemptions are offered to post-1989 forest.

Which forests can be registered?

- 113 Allowing both exotic and native forests to register as permanent post-1989 forest will provide a greater degree of flexibility to landowners to move to a permanent forest land use.
- 114 Exotic forests have the ability to act as a 'nursery crop' which aids the establishment for both planted and regenerating natives²⁵. Over time these forests may potentially convert naturally to native forest, or this transition to natives can be encouraged through a range of interventions (e.g. selective harvest of exotics and the replacement with natives). This option was identified by the Productivity Commission (in their low-emissions economy draft report) as a useful option for future work, which Te Uru Rākau is undertaking.
- 115 On highly erodible land, new planted exotics is likely to be effective in stabilising the land. In the short term, it has advantages over natives as exotics are lower cost, easier to establish, tolerant of various conditions, and grow twice as fast as natives. Allowing these forests into the permanent post-1989 activity will provide cash flow to the participant and encourage their eventual replacement with native forests. With the ability for participants to trace their NZUs back to a particular permanent forest, access to price premiums will be retained and more finely differentiated over time.

²⁴ As we closely follow the international approach on how to account for natural disturbances in designing the proposal for permanent post-1989 forests.

²⁵ For example

Adam Forbes' PhD thesis

<https://ir.canterbury.ac.nz/bitstream/handle/10092/11657/Forbes%2C%20Adam%20-%20PhD%20Final%20thesis%20pdf.pdf>

Professor Euan Mason (University of Canterbury) on Nine to Noon 22 February 2018 "Natives vs Pines? Government urged to make a plan" https://www.radionz.co.nz/audio/player?audio_id=2018633207

Evison DC. and Mason E. (2017) *The role of forestry in helping New Zealand reduce carbon emissions to the atmosphere*. [Submission to New Zealand Productivity Commission]
<https://www.productivity.govt.nz/sites/default/files/sub-low-emissions-27-david-evison-and-euan-mason-477Kb.pdf>

116 Additionally, allowing exotics also provides the option for landowners to plant alternative long-lived species, such as redwoods, which are expected to offer alternatives to pine as high value timber forests.

What do stakeholders think?

- 117 Of those who answered 75% agreed with the Government's preferred approach that the majority of the operational processes and regulations should be shared between permanent post-1989 and post-1989 forests, with the key difference being the non-clear fell period.
- 118 Only 9% of submitters did not support this proposal, and the majority of these were calling for the differentiation of permanent post-1989 forests (particularly native forests) which is achieved through the actions of the forest participant.

Design consideration D: Permanence obligations and the no clear-fell period

What is the policy problem or opportunity?

- 119 To differentiate post-1989 forest activity from permanent post-1989 forest activity we need to create a definition of permanence and define what limits are being placed on the landowner.
- 120 These definitions will be important to:
- establish the value proposition for permanent, and form the basis for the differentiation from units derived from post-1989 forests; and
 - create clarity around what participants will be committing to when they register their forest as a permanent forest.

What options have been considered?

- 121 We have broken the consideration for permanence into:
- the period in which the forest must remain registered as a permanent forest; and
 - The standard to which the forest must be maintained during this non-clear fell period.

Which is the proposed approach?

- 122 We are proposing that:
- the non-clear fell period is 50 years from the date of registration; and

- b) during this period the forest must not be reduced below 30% canopy cover (per hectare)²⁶.
- 123 These are both status quo provisions from the PFSI and the ETS and have been designed to align with international forestry accounting rules and decisions made when the PFSI and ETS were originally introduced.

Non-clear fell period

- 124 We have proposed a 50 year period as this is the current period for permanent forests in the PFSI. While other lengths could be considered, either shorter or longer, a:
- a) shorter period would undermine the permanence of registered forests; while
 - b) a longer period has been shown to act as a further barrier to registration into the PFSI, so it would be expected to act as a barrier for the permanent post-1989 policy also.
- 125 The first PFSI covenants were in perpetuity but harvest was allowed after 99 years, but feedback for landowners was that this made the PFSI unattractive because land use is locked in for too long. This is particularly so for Māori land under the Te Ture Whenua Maori Act (1993) where additional considerations are required if the land is leased for over 52 years. Setting the non-clear fell period as 50 years avoids this issue.
- 126 The 2015 PFSI consultation concluded a 50 year period as the most suitable option to define permanence. This was arrived at as the preferred position based on striking a balance between permanence of the forest, and landowner flexibility to reconsider their land management options.

Maintaining the land as forest

- 127 We propose to allow the limited removal of trees from the registered area, provided no hectare in the registered forest drops below 30% tree crown cover during the non-clear fell period. This aligns with existing rules in the ETS that were designed to align with the international accounting approach for forest carbon. Effectively this will allow the forest to be established, grow to meet the forest land definition's requirement of 30% tree crown cover and then allow the removal of some trees to occur.
- 128 This 30% is
- a) more stringent than the constraints that apply to post-1989 forest land in the ETS which allows the full removal of all trees provided the forest is re-established.
 - b) comparable to the current PFSI implementation which requires 30% canopy cover to be achieved, and also allows up to 20% of the basal area²⁷ to be removed.

²⁶ The 30% canopy cover restriction aligns with the status quo rules for post-89 forests registered in the ETS. Sustainable, selective harvesting in these forests will be enabled if a minimum level of canopy cover per hectare is maintained. These decisions reflect the status quo approach in the PFSI covenants and was supported in consultation.

²⁷ Effectively the cross section of the trunks in each hectare

- 129 We want to enable the removal of some trees for two key reasons:
- a) It will encourage the development of innovative forest management practices as forests are managed through the transition of species, e.g. the replacement of retired pine with native forest. This facilitated transition is still experimental at large scales.
 - b) It enables the development of long lived, small area, harvest models seen overseas e.g. in older European plantation forests.
- 130 We propose to make this operational by introducing a new definition in the Climate Change Response Act which includes any felling, harvesting, burning, or removing of trees by mechanical means or other human activity while also requires tree crown cover to remain at least 30% after the harvest event.
- 131 We expect the majority of landowners to maintain their forest so the tree crown cover is higher than 30% so as to maximise the carbon income from the forest and also to meet other environmental objectives (e.g. erosion control). We note that NZU surrender obligations will increase over time as the forest matures and stores more carbon, this provides an increasingly strong incentive to maintain the required proportion of forest cover. Land registered as permanent post-1989 forest land will still remain subject to other legislation as it relates to forests. For example,
- a) Under the Forests Act (1949) that the permanent post-1989 forest receives equivalent treatment to PFSI forest land. This will not disadvantage existing PFSI participants once they are moved into the ETS, while also retaining the overall 'permanent forest' framework for new participants.
 - b) Plantation forest land (both native and exotic) will be subject to the National Environment Standards for Plantation Forests which manages the environmental effects of forestry, including from harvesting.

Costs of these proposals.

- 132 It is not anticipated that there will be significant additional costs from these conditions for land owners

Options for the length of the non-clear fell period.			
	50 years Preferred	A shorter period	A longer period
Primary criteria			
Increases incentives to store carbon in forests and harvested wood products	0 Status quo for the PFSI	- Undermines the permanence of forest so lower unit premium in market	- While more carbon could be stored, the loss of flexibility will undermine uptake.
Allocates obligations and entitlements to support alignment with climate change targets	0	- Likely to be difficult to recognise permanent forests in international reporting	0

Improves ease of compliance for participants	0	0	Increases risk of non-compliance due to longer period
Secondary criteria			
Administrative efficiency and effectiveness for regulators	0	- Will have a high administrative 'churn' for these forests	Will increase demand for access to 'early withdrawal' provision.
Provides durable regulatory certainty and predictability	NA	NA	NA
Avoids unintended consequences	0	+ Allows more frequent revisiting of registration.	Less frequent revisiting of registration increase risk of these occurring.
Consistent with wider climate change and wellbeing priorities	0	0	Makes it more challenging for land under Te Ture Whenua Maori Act (1993)
Overall assessment	0	--	--
Table Key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than			

Options for activities in the non-clear fell period			
	Maintain 30% tree crown cover	Have a lower threshold	Have a higher threshold
Primary criteria			
Increases incentive to store forest carbon	0	-- Will undermine the differentiation of the permanent activity for rotational forest	- Reduced flexibility will undermine uptake
Increases ability to meet climate change targets	0 Reflects international definition	- Likely to be difficult to differentiate permanent forests internationally	0 Offers no up or down side risks benefits vs. international accounting.
Improves ease of compliance	NA	NA	NA
Secondary criteria			
Administrative efficiency and effectiveness	NA	NA	NA

Provides durable regulatory certainty and predictability	+ consistent with PFSI	0	- Would place additional requirements on forest which is transferred.
Avoids unintended consequences	0	-	-- Any higher threshold will limit options for land management for registered forest.
Consistent with wider climate change and wellbeing priorities	0	- Lower tree crown cover requirement could undermine outcomes	0 Higher tree crown cover requirement could enhance some outcomes, but any limit would be arbitrary
Overall assessment	0	-	-
Table Key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than			

What do stakeholders think?

- 133 Of the 64 submitters who responded to this issue, 72% were in favour of a harvesting restriction of some form, 17% were opposed and 11% not sure. Opinion on the tree crown requirement was evenly split: 3 submitters supported the 30% in their comments; 4 more supported the need to provide flexibility for the landowner to harvest; while 5 submitters supported a requirement of between 50% and 65%.

Design consideration E. What forest owners can do after the non-clear fell period expires

What is the policy problem or opportunity?

- 134 The establishment of the permanent post-1989 activity will use a 50 year non-clear fell period to manage the participant's activities. To insure informed decisions making, we need to set out the options once this ends. A lack of options after the 50 year non-clear fell term may result in a negative perception of the scheme and become a barrier to participation. Any uncertainty introduced by not knowing what future rules will apply to them is likely to prevent participants from registering in the scheme.
- 135 Currently in the PFSI, after 50 years, participants are able to remove any part of their forest area from the covenant. If any area is withdrawn, the landowner must repay the units issued to that area. Any forest sink area which has not been removed will simply continue under the covenant with harvesting restrictions.

What options have been considered?

- 136 We have considered one high level option, which is to state (and legislate) a decision point for participants to decide what to do with their permanent forest once the 50 year

non-clear fell period ends. We have also considered provisions for how the scheme administrators will respond if a decision for the future registration of the land is not communicated by the participant.

- 137 After the 50 year no clear fell clause expires, the participant will be given three possible pathways forward:
 - (i) *Remain in the permanent post-1989 forest activity in the ETS*: by signing up for another non-clear fell period (25 years), and continuing with the stock change accounting approach;
 - (ii) *Switch to the post-1989 forest activity in the ETS*: which would allow the forest to be harvested provided they repay an appropriate amount of the NZUs they have received (to maintain a unit balance that accurately reflects the carbon stored in the forest);
 - (iii) *Exit the ETS* (and either keep the forest or deforest) and repay all units received.
- 138 A permanent participant would elect to take one of these options when they submit their next emissions return (either ‘voluntary’ or mandatory) after the expiry of the non-clear fell period. Until this emissions return is submitted, the forest will continue to be treated as a permanent post-1989 forest (e.g. the clear-fell restriction will apply).

(i) Remain in the permanent post-1989 forest activity:

- 139 Under this option the permanent post-1989 forest would be treated as a permanent post-1989 forest, with the restrictions applied as above.
- 140 We have determined a 25 year term is appropriate for the second and subsequent non-clear fell period due to a combination of:
 - a) Feedback from Māori that a 25 year period is preferable as it allows the reconsideration of the participation in the permanent post-1989 forest activity once every generation after demonstrating permanence by signing for 50 years.
 - b) It aligns with the terms of the Ngā Whenua Rāhui covenants (for Māori land).
 - c) Preserve the flexibility for those foresters investing in long rotation species where their performance in New Zealand is unknown (and allowing a pathway to harvest these forests between ages 75 and 100, if it proves desirable).

(ii) Switch to the post-1989 forest activity.

- 141 Under this approach, the participant would then be able to harvest their forest, and if so, would have an obligation to surrender units. They would be treated as a post-1989 forest for all intents once the switch has occurred.
- 142 In the Cabinet paper, we are proposing that an area of permanent post-1989 forest which transitions to post-1989 forest would repay units to bring the forest into alignment with the post-1989 forest accounting that applies. Under the saw tooth/stock change approach, this would be 889 NZU²⁸ worth \$22,225 at \$25 per NZU.

²⁸ Assuming the forest is on the West Coast, the pine lookup table with the lowest carbon stocks.

143 As the final proposals for averaging are developed in 2019, we will provide clarity on what the transition options will mean at the time of transition to post-1989 forest. This will occur in the RIA to support the March decisions.

(iii) Exiting the ETS

144 Under this approach the landowner would need to surrender all units received for that forest. As with switching to post-1989 forest, this will be a significant cost, this would be 1028 NZU²⁹, at a value of \$25,700 (at a carbon price of \$25) per hectare.

What happens if the participant does not make a decision?

145 To claim their final units for the permanent post-1989 forest, the participant will need to submit their Emissions Return, which will include the declaration of their decision. Despite this, we need to introduce provisions for what happens if the participant fails to make this decision (or submit a return).

146 We propose that in the event the participant fails to make a decision, the areas of permanent post-1989 forest are removed from the ETS, and the participant becomes liable for the unit balance for this land. Should they fail to notify Te Uru Rākau of the decision, Te Uru Rākau will inform them that the deregistration will occur and the participant will be given 30 working days to notify Te Uru Rākau of their decision.

147 While this approach is a departure from the PFSI approach (of the participant being able to make the decision at any time after 50 years), it:

- a) Provides a simple approach for the participant to avoid the need to repay units (they sign up again).
- b) Encourages administrative simplicity (the participant makes the decision at one point in time, and will allow the regulator to undertake outreach in advance of the decision).
- c) Enhances the long-term permanence of the forests by providing definite time frames for how long the forest is subject to the non-clear fell period.
- d) Avoids the need to create additional penalties and compliance provisions to manage this eventuality.

148 Conversely applying the approach used in the PFSI would:

- a) Not reduce the economic impact on the participant should they deregister the area (sometime later). They will need to repay the full unit balance of the forest: which will continue to increase with each unit return after the one they did not make the declaration in.
- b) Increase the use of the early exit provisions (described later), as they would begin withdrawing forest land within an ongoing non-clear fell period.

Discarded options

²⁹ Assuming the forest is on the West Coast, the pine lookup table with the lowest carbon stocks.

149 While we explored additional options often this would simply re-frame other design considerations in this document, for example an automatic re-enrolment into another non-clear fell period would be practically the same as a longer non-clear fell period in the initial registration.

150 We looked at offering fewer options but this would either:

- (1) make permanent forest less attractive e.g. if Option (ii) or (iii) were not offered land values of permanent forests would be reduced as they will be locked into permanent forestry; or
- (2) provide a less transparent approach to permanent forest, which is more complex for landowners and the Crown e.g. if option (ii) was not offered we would need to find a way to allow clear fell harvest in the permanent post-1989 forest activity, but only after 50 years, and develop methodologies to allow the landowner to report their emissions.

Which is the proposed approach?

151 It is recommended that when the 50 year non-clear fell conditions are completed, participants' are given a choice of which of three outcomes they wish to choose from for their (current) permanent post-1989 land:

- Renewal of a non-clear fell condition for 25 years;
- Movement into post-1989 accounting; or
- Deregistration from the ETS.

What other impacts is the approach likely to have?

152 The preferred approach will provide flexibility and a balanced set of permanence obligations which will likely increase the uptake of permanent forests and allow them to earn a unit price premium.

153 Providing the three options will improve regulatory certainty for landowners and allow them to incorporate these options into how they consider the value and returns from permanent forests.

What do stakeholders think?

154 There was good support for the presentation of the three options (74% of 57 submitters were supportive). Only 9% of the submitters opposed the three options. This opposition was for a range of reasons e.g. they wanted a longer term for initial sign-up or did not see the reason to define options around what happens at the end of the no-clear-fell period.

Design consideration F: Early exit conditions

What is the policy problem?

- 155 With the establishment of a permanent post-1989 forest land activity and its period of non-clear fell ETS participation, clear conditions on early exit from the permanent post-1989 forest activity must be outlined in the CCRA.
- 156 Permitting early exit will likely increase uptake of permanent forests (as the forest is not locked into the activity if there is an unexpected, and unforeseeable event). However, this must be balanced against the consideration that too easy (early) exit will undermine the permanence of the permanent post-1989 forest activity and impact other permanent post-1989 forest participants.

What options have been considered?

- 157 Under all options the participant would be required to surrender units equal to the number of units earned for that area of forest. This is the case for all post-1989 forests in the ETS, and the majority of PFSI forests now.³⁰
- 158 While repaying units would act as a barrier to leaving the permanent post-1989 forest activity, this may not act as a deterrence to early exit and uphold the integrity of permanence.

Option F1: Unit multiplier

- 159 Participant cancellation would require not only the repayment of units earned but also additional units calculated at a compounding rate of 10 per cent applied to each year's increase in carbon stock from the beginning of the covenant (e.g. after 7 years the unit multiplier would be 2, so they would need to surrender twice the carbon earnt in the seventh year). This would act as a significant disincentive to exit, particularly late in the non-clear fell harvest period.

Option F2: Cancellation only under certain conditions

- 160 Cancellation can only take place under circumstances which could not have reasonably been foreseen at the time of registration, and where the participant's ability to access the value of carbon sequestration in their permanent post-1989 forests are significantly affected.
- 161 This option is consistent with the intention of limiting rights of participants exiting unless it would be unfair to require the participant to remain registered. The success of this approach is largely driven by the ability to anticipate the conditions.

Option F3: A two-step test at Minister's discretion, based on defined legislative clauses

- 162 An alternative to option 2 is the requirement for the Minister of Climate Change to apply a two-step test, as defined in legislation. The first step seeks to provide some

³⁰ This repayment process is determined by the individual covenant the landowner signed.

flexibility and the second stage of this test seeks to limit the application of the discretion in favour of the applicant.

- i. Would it be unreasonable in the circumstances to require the participant to maintain their registration in the scheme?
 - ii. If answer to step 1 is “yes” considerations should include
 - a. The removal of this forest will not materially undermine the environmental integrity of the permanent post-1989 forest activity; and
 - b. The removal of this forest will not materially undermine the environmental integrity of the ETS; and
 - c. The desirability of minimising any compliance and administrative costs associated with the greenhouse gas emissions trading scheme established under this Act; and
 - d. The relative costs of allowing the withdrawal or not allowing it, and who bears the costs; and
 - e. Any other matters the Minister considers relevant.
- 163 The two-step test is modelled on the existing section 60 of the CCRA, which allows the Minister of Climate Change to grant exemptions under certain circumstances. However, section 60 only applies to the mandatory ETS activities, and the considerations require some refinement to be applicable to forestry.

Which is the proposed approach?

- 164 We prefer option three, the two step test, as it measures up most effectively against the criteria (based on our current knowledge, and our operational experience). It allows good future proofing of permanent post-1989 forest activity while being flexible to respond to changing situations.
- 165 However, this option is likely to have a marginally higher administrative burden on the regulator (vs. option one), due to the need to provide advice to the Minister. To offer this option to all permanent post-1989 forest participants, the cost is estimated to be a total of \$16,700 per annum. A similar cost of is expected if option two is selected.

What other impacts is the approach likely to have?

- 166 This could allow applicants to apply to cancel registration in a range of circumstances, including for reasons unrelated to the forest or carbon sequestration (e.g. personal circumstances which means remaining in the scheme would result in significant hardship). This would be a positive outcome of the policy.
- 167 One outcome of the preferred approach is we will need to engage with the Minister of Climate Change on these issues, which could result in a slow process. However, we are proposing that the Minister does not need to take these decisions to Cabinet (as the unit repayment obligation means there are no fiscal obligations of granting the exemption).

Assessment against criteria

Options for	F1. Unit multiplier	F2. Withdrawal under certain conditions	F3. Minister's two step test.
Primary criteria			
Increases incentives to store carbon in forests and harvested wood products	0 May create a strong disincentive to exit and potentially harvest or deforest. However would encourage deregistration early in 50 year period	+ Creates a strong disincentive to exit and potentially harvest or deforest	+ Creates a strong disincentive to exit and potentially harvest or deforest
Allocates obligations and entitlements to support alignment with climate change targets	- The 'extra' units surrendered would not be associated with an emission and cause misalignment with the emissions cap	0	0
Improves ease of compliance for participants	0 While the units being surrendered would be certain, the exposure to carbon prices changes is greater than F2 and F3 (as more units need to be surrendered)	0 conditions for exit not clearly defined	+ Conditions for exit are more clearly defined, but still uncertain.
Secondary criteria			
Administrative efficiency and effectiveness for regulators	+ Simple to implement	0 May not be effective because of conditions for exit are unclear	- The process could be lengthy
Provides durable regulatory certainty and predictability	+ Relatively easy to understand	0 May be prone to revision.	0 Being subject to the Minister's discretion reduces certainty,
Avoids unintended consequences	NA	NA	NA
Consistent with wider climate change and wellbeing priorities	- the cost of exit may be unfair to participants in some circumstances	- the tests of fairness may be subjective	+ provides fairness and equity for the Crown and participants as criteria are clearly specified
Overall assessment	0	0	+
Table Key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than			

What do participants think?

- 168 Only 33 submitted on this question with 42 % supporting for option three, 39% supporting option one, and 18% supporting option two.
- 169 A number of those supporting option one supported a flat multiplier, but this would not discourage de-registration of older forests (close to 50 years) as the proposal in option one and make it very simple to withdraw young forests. Together a flat multiplier would undermine both the permanent post-1989 forest activity.
- 170 Some of those supporting option two favoured this approach due to the ability to grant flexibility to landowner. Option 3, Ministerial two step test, provides equal (or greater) flexibility to option 2.

Design consideration G. Transfer from post-1989 to permanent post-1989

What is the policy problem or opportunity?

- 171 In this section we are providing clarity on the transition to permanent post-1989 forests to two key groups:
- a) Existing registered post-1989 forests.
 - b) Forest owners who wish to register a permanent forest for the first time, but do not want to register as PFSI forest (e.g. due to cost).
- 172 The owners of forest which is registered as post-1989 forest may wish to transfer this forest to the permanent post-1989 forest activity, for example:
- a) The forest is part of the 33,000 ha of indigenous forest registered as post-1989 forest
 - b) It is a production forest on a site which is not economic to harvest (e.g. it is far environmental constraints).
- 173 With the disestablishment of the PFSI, those foresters wishing earn NZUs register as a post-1989 forest (at a lower cost of registration), but still receive the ‘tagged’ units for their permanent forests once the new activity is in place.

What options have been considered?

- 174 Two broad options have been considered:
- a) Credit forests back to the start of the MERP; or
 - b) Credit forests back to the time the decision was made
- 175 The August/September discussion document outlined options for how post-1989 forests subject to averaging would be treated. We will provide advice on how these forests will be treated will be part of the March decisions.

Analysis

- 176 For forests on the stock change approach (is the status quo), they will continue to earn ‘untagged’ units up to time they change to permanent post-1989 forest and then earn ‘tagged’ units after this. It is proposed that this approach applies to all forests: those on the first or second (subsequent) rotation.
- 177 To manage operational complexity for Te Uru Rākau and the participant when post-1989 forest land is transferred over to the permanent post-1989 forest category the participant will be required to submit a mandatory emissions return (at the time the decision is made). This will use a similar operational approach to the transmission of interest, but the participant will not change.
- 178 Receiving tagged units back to the time the decision to become a permanent post-1989 forest will disadvantage those participants who make the decision to move late in the MERP. However, it will have no impact on those who decide to move in the first year of the MERP, following the purchase of registered land, or the expiration of a forest harvest lease or right.³¹
- 179 We propose that upon transition into the new category, all forest owners will not need their forest land to be reassessed for eligibility or remapped. This will reduce both i) administrative costs for the participants and the Crown and ii) remove the risk that the registered area will change³². However they may choose to reconfigure the Carbon Accounting Areas (e.g. to calve off the uneconomic to harvest forest from an existing registered area).

Transition arrangements for forests registered as post-1989 after 2018 and then transition to permanent post-1989 forest once it becomes available.

- 180 With the use of a MER as the time of movement to permanent post-1989 forest activity we need a transitional arrangement for forests first registered in the ETS (as post-1989 forest) after 1 January 2018 and then (voluntarily) move to permanent post-1989 once that option becomes available.
- 181 We propose to allow these forests to receive tagged units back to 2018, provided they do not double claim for units. The simplest way to do this is to allow these forests to be deregistered (which triggers a unit repayment obligation) and then be registered as post-1989 forest. This ‘newly registered’ forest would be eligible to earn units back to the start of the MERP (2018). We would not reassess land following this process.

³¹ Following land purchase or lease or right expiration, the new participant can only claim units back to the time the transfer occurred.

³² As Te Uru Rākau is obliged to assess eligibility based on the information available when the decision is made, reassessing eligibility when the forest moves to a permanent post-1989 forest could reduce the area eligible to earn units.

Criteria	Options	
	Option H1 Credit back to start of MERP	Option H2 (Preferred) Credit from when the forest transferred to permanent post-1989
Primary criteria		
Increases incentives to store carbon in forests and harvested wood products	NA Forests receive the same number of NZUs	NA Forests receive the same number of NZUs, and tagged units can be the same if decision is made early.
Allocates obligations and entitlements to support alignment with climate change targets	- This portion may result in units being issued into the ETS which are not reflected in international accounting	+ Tagged units will match those received internationally for these forests.
Improves ease of compliance for participants	-- In the MERP, significant changes to how the forest is recorded may have occurred, and ownership changed. These have proven difficult for participants to accurately report and increases the risk of inadvertent errors	++ Clear who the decision maker is and which forests the return covers.
Secondary criteria		
Administrative efficiency and effectiveness for regulators	-- The complexity of these calculations will limit the Crown's ability to ensure compliance by participants.	0 Simplified administration as it aligns to existing approaches in the ETS.
Provides durable regulatory certainty and predictability	NA	NA
Avoids unintended consequences	NA	NA
Consistent with wider climate change and wellbeing priorities	NA	NA
Overall assessment	-	+

What other impacts is the approach likely to have?

- 182 There is a slight risk that the relatively easy movement from rotational post-1989 forest to permanent post-1989 forests will create the expectation that a similar

movement the other way will be possible. This is manageable by defining up front what the options are when the non-clear fell period expires (design consideration E), and when early exit would be allowed (design consideration F).

What did stakeholders think?

- 183 We consulted on a slightly different framing of crediting forests: back to the start of MERP over the average age (earn units back to the start of the MERP). Of those who submitted on that question for forests over the average age, 58% were in of the preferred approach, 25% unsure, 17% did not support the preferred approach. For the reasons outlined above we consider that any negative impacts (fewer tagged units being received) on forest owners manageable, and avoidable.
- 184 Most of those who did not support the preferred approach wanted crediting for these permanent forests to be backdated to well before the current MERP (e.g. 2008 or back to planting) which would come at significant fiscal cost (for a 28 year old pine forest³³ this would be up to \$25,000 per hectare) and also encourage forests to convert from a rotational forest to a permanent forest to earn backdated credits.
- 185 A few submitters drew a linkage between forests changing to a permanent post-1989 forest and the treatment of averaged forests (e.g. on the second rotation) however, these concerns will be dealt with in the early 2019 Cabinet paper and RIA.

Design consideration I. Start date of permanence obligations when transferring from post-1989 to permanent

What is the policy problem or opportunity?

- 186 A decision on this is needed to clarify the treatment of forest changing activity from post-1989 to permanent post-1989 forest.
- 187 The 50 year period applicable to permanent post-1989 does not apply to post-1989 activities. When changing registered post-1989 to permanent post-1989, participants may argue that their forest has not been harvested and therefore has been ‘permanent’ since their registration in post-1989. In this case, harvesting restrictions would be applied from the date of first ETS registration of that particular forest.
- 188 However, participants registering straight into permanent post-1989 may view this as unfair (as participants who register as post-1989 will have more options in how they manage their forest) and that applying harvesting restrictions from the date of transfer into permanent post-1989 is fairer. This is when the participant committed their forest to ‘permanence’.

What options have been considered?

³³ The typical harvest age.

189 There are two options for the date of applying harvesting restrictions.

Option I 1: From the first date that forest was registered in the ETS

190 The application of harvesting restrictions from the date of registration in post-1989 (ETS) would enable participants to earn extra units from forests that were not fully committed to permanence. This would undermine the integrity of permanence and other permanent post-1989 participants' commitment to permanence but may increase transfers into permanent post-1989 activities.

Option I 2: From the date on which the forest transferred to permanent post-1989

191 Applying harvesting restrictions from the date of transfer into permanent post-1989 would signify the participants' commitment to permanence, rather than risking the perception that participants are moving between activities to maximise advantage in the short term. This would potentially mean that participants would be under the 50 year non-clear fell restriction for a longer period than option 1.

Which is the proposed approach?

192 The proposed option here is that harvesting restrictions will be applied from the date of transfer into permanent post-1989 (Option I2). Application of harvesting restrictions from the date of transfer signifies the participant's commitment to permanence as a new activity in their forests.

What other impacts is the approach likely to have?

193 We do not anticipate any other impacts from this decision.

Assessment of options against criteria

Criteria	Options	
	Option I 1 From the first date that forest was registered in the ETS	Option I 2 (Preferred) From when the forest transferred to permanent post-1989
Primary criteria		
Increases incentives to store carbon in forests and harvested wood products	-- Would undermine the integrity of the permanent activity and could relatively little carbon vs. a long rotation forest. For sufficiently long lived forests they could be registered as PP89 and then effectively have no non-clear fell period.	+ Provides incentive to have long lived (well over 50 years) forests.
Allocates obligations and entitlements to support alignment with climate change targets	0	+ Forests will be differentiated in international reporting so NZ will received credits

Improves ease of compliance for participants	NA	NA
Secondary criteria		
Administrative efficiency and effectiveness for regulators	- Each forest that transitions would require a unique 'non-clear fell period'	0
Provides durable regulatory certainty and predictability	- Impact on the current landowner would be determined by actions of the previous land owner	+
Avoids unintended consequences	NA	NA
Consistent with wider climate change and wellbeing priorities	- Would encourage gaming (move to permanent for a short period of time) if timber price is poor and carbon price is high. This would be a particular risk for alternative (non radiata pine) species.	0
Overall assessment	-	+

What do stakeholders think?

194 The majority of submitters (81%) support this proposed approach. 19% of submitters opposed the preferred approach, however those that commented wanted the non-clear fell period to be linked to the age of the trees (not ETS registration), an approach which would significantly undermine the integrity of the permanent post-1989 activity.

What other options have been ruled out of scope, or not considered, and why

195 Certain design features of a permanent post-1989 activity were not considered in this RIA as they relate to the wider ETS setting for all forests. For example,

- We have not proposed to consider an alternative definition of 'Forest Land' which could apply to permanent post-1989 forests. As the ETS forest definition is closely linked to the forest definition used in international reporting and accounting, any departure would either reduce the establishment of permanent forests (e.g. requiring a greater canopy cover) or put the ETS out of alignment with our target (if the definition was loosened);

- We have not proposed to change the regulations that relate to how forest carbon stock changes are reported. The current methodology is appropriate, and there is a longer term need to consider these regulations once the forestry package is decided and the accounting decisions (averaging) are made.

196 Should decisions be made to alter these settings for forests, the preferred approach would incorporate these by default.

Proactively Released

Part B: Operational Improvements

Section B1: Problem definition and objectives

What is the context within which action is proposed?

- 197 In 2008, the ETS was introduced as New Zealand's primary policy to reduce net emissions below business-as-usual, and assist New Zealand to achieve its international targets. It has been amended several times since then with the last major set of amendments made in 2012.
- 198 With the differences in the size and operational capacity of the forest owners in the ETS there is a wide diversity in the ability of participants to manage the complexity of participation in the ETS. Many smaller participants rely on professional services on ETS compliance (e.g. from forestry consultants), which increases the cost of them taking part in the ETS and reduces the returns (under any accounting approach).

What is the policy problem or opportunity?

- 199 During the recent review of the ETS, the complexity of the forestry rules was identified as a significant barrier for post-1989 forest owners interested in joining, particularly for small forest owners. This means forest owners (and owners of non-forest land) are less likely to join the ETS, thus forgoing potential income from New Zealand Unit (NZU) sales. This can mean the carbon price is not being considered when making land use decisions.
- 200 Subsequent to the review, Te Uru Rākau interviewed a number of participants, forest owners and landowners to better understand why different ETS participants are taking part, what barriers people face to taking part, and their overall views of the ETS.
- 201 The feedback from the review and the interviews is consistent. Most materially, participants do not differentiate the source of their positive or negative experiences with the ETS. Their engagement with the ETS, and the regulatory agencies, is part of one continuous process.
- 202 Key feedback from participants was:
- (i) Participants join and remain in the ETS for forestry for a range of reasons, beyond revenue from selling NZUs. These range from a desire to 'do their bit' to address climate change; promote other environmental outcomes (e.g. erosion control and biodiversity); acting on advice; or they joined in the past and simply continue to be in the ETS.
 - (ii) The ETS has a high compliance burden and taking part in the ETS has up-front costs before units are received from registration and from completion of emissions returns.
 - (iii) Participants describe the scheme as complex, difficult to understand (many participants rely on buying advice), difficult to gain unbiased information about and, compared with other options, as well as being overly bureaucratic and burdensome.

- (iv) There is a lack of trust in the system based on what people have experienced themselves, what they hear from others, and what they have seen in the past. Informal networks and stories are important sources of information.
 - (v) The ETS is not customer friendly, with limited ability for the Crown (Te Uru Rākau) to assist participants if they need it.
 - (vi) Penalties are seen as a barrier to participation, as the consequence of doing something wrong is very high, and the likelihood of getting something wrong is also high.
- 203 The differences in participant size and forest composition (e.g. species and management) result in issues around the capacity of forestry participants to meet their obligations, and comply with the law. This is due to both the complexity of the accounting system forest owners need to comply with, and the diversity of the forests they have registered. There is an opportunity to design an ETS that is simple to get right and hard to get wrong to encourage participation with the scheme.

Section B2: Operational improvements options and impact analysis

- 204 We have identified four operational and technical changes to improve how forestry is treated within the ETS that would require legislative change to the CCRA. They will positively impact investment decisions in forestry and improve the ETS for a large numbers of forest owners. Some will require regulations to be developed later once the legislative package is delivered.
- 205 The proposed changes are:
- A. Improve pre-1990 offsetting forest land to allow greater flexibility of land use.
 - B. Simplifying the process to access exemptions from deforestation liabilities for areas of tree weeds.
 - C. Excluding post-1989 forest land with tree weeds from joining the ETS.
 - D. Improving access to existing exemptions for multiple-owner land (particularly multiple-owner Māori land).

A. Improved process for pre-1990 forest deforestation offsetting

What is the policy problem or opportunity?

Fixing offsetting

- 206 Forest offset planting was introduced to the ETS in 2013 to allow pre-1990 forest landowners who want to deforest to avoid deforestation liabilities by establishing a forest of equivalent area and carbon stock elsewhere. This substantively reduces the cost of changing land use, and promotes land use flexibility while preserving total carbon stocks.

207 However, should they fail to meet the conditions of offsetting, the landowner is liable for the emissions units (around \$16,000 per hectare at \$25 per tonne) and any penalties we levy (up to \$30 per unit not surrendered). For the ‘average’ hectare of pre-1990 forest this could total \$35,750 per hectare

208 Since 2016 a number of offsetting applications have been received, covering around 3,000 ha of pre-1990 forest land. Once the applications were approved, concerns were raised that the offsetting provisions are unclear or impractical, expose landowners to financial risk, and that they unnecessarily restrict the ability of landowners to undertake offsetting.

209 We have identified that the current rules for pre-1990 offsetting do not work, principally because:

- (1) offsetting is strictly pass/fail for the entire application, meaning if even 0.2 ha of offset forest fails to establish, the entire application must be rejected³⁴;
- (2) there is limited time to establish the replacement forest, which varies according to what the forest owner does with the land (if the land is actively converted to non-forest use, they have 2 years to establish the offset forest however, if there is no conversion the period is 4 years); and
- (3) once approved, the application cannot be amended to reflect what is happening on the ground and the success of forest establishment.

What is proposed to address the problem?

Delivering an offsetting policy that works for participants

210 Working with stakeholders, and considering the international alignment, we have developed a proposal to increase the flexibility of pre-1990 forest offsetting. This proposal consists of four key policy changes to improve offsetting:

- (1) Extend the time frame for offsetting to be achieved (if land is converted) to the earlier of either four years after clearance (harvest) or the application date. This will enable time for infill planting should areas of the new offset forest fail.
- (2) Allow participants to amend the defined area of pre-1990 forest land to be deforested and the area of offset forest to be established. This amendment process would be a one-off opportunity, after which the offsetting approval is finalised. This will enable forest owners to establish a larger area of offset forest than is needed for carbon equivalence, and then modify an application to reflect what area of forest successfully establishes.
- (3) Move away from the ‘all or nothing’ approach for the full application and make it explicit that only the deforested pre-1990 forest land that is not matched by the offset forest is subject to the deforestation liability.

³⁴ For a 100 hectare application the applicant becomes liable for all deforestation from their application (roughly \$1.6 million for an average 100 hectare block at \$25 per tonne).

- (4) Allow the owner of the offset forest to carry over surplus areas of successfully established offset forest to a future offsetting application if they have not previously counted it against deforestation³⁵. This would allow a landowner to submit an initial application, with planned over-achievement in their offset forest to effectively use it as a land bank.

211 Some stakeholders have argued for longer periods to complete the offsetting process, and/or greater ability to deforest prior to establishing the replacement (offset) forest. We do not consider these options as preferable for two reasons:

- (1) A longer period to complete offsetting (e.g. 10 years) will significantly reduce the Crown's ability to differentiate deforestation (with unit surrender obligations) from deforestation associated with offsetting. This differentiation is key to compliance. More generally, if non-compliance is assessed to have occurred after a significant period of time, the pre-1990 forest landowner and the landowner when compliance is assessed are more likely to be different. The current landowner will be liable for the deforestation emissions, through no fault of their own.
- (2) Being able to count pre-1990 forest land offsetting against our international emissions reduction target as carbon equivalent forest (the international term) is key to reducing the fiscal risk from offering this policy in the ETS. The international rules require that evidence is provided to show the relationship between the forest land and the corresponding offset forest. This is most effectively demonstrated with a relatively short time period, and the offset forest being established prior to the deforestation.

212 Practically, pre-1990 forest owners can achieve the same amount of flexibility through the preferred option by undertaking successive applications, and carrying over any 'excess' planting between applications. While this may result in slightly higher administration costs, these are significantly lower than the current approach or the consequences of large application failing at the end of a long period.

Cost benefit summary

- 213 The most significant benefit from these changes is that it will increase land use flexibility for pre-1990 forest land owners, particularly Māori³⁶. These forest land owner will be able to make decisions about where to site their forests for maximum benefit at lower cost and risk than the status quo.
- 214 It is difficult to estimate the change in behaviour that will result from this change, but based on deforestation intentions surveys we would expect uptake to increase by

³⁵ We also intend to provide clarity that newly planted land that does not get 'used' in an offset application can be registered as post-1989 land.

³⁶ Who are expected to own an increasing share of pre-1990 forest land as a result of Treaty of Waitangi settlements.

around 400 ha per year³⁷. This could enable the land to be put in highest best use. We have:

- a) Valued the benefit at \$30,000 per hectare converted as an estimate³⁸, with a total value of up to \$12 million per year. It is possible that the benefit could be higher if the land was put into other land uses.
 - b) To take up the benefit offered by offsetting, the land owner needs to establish an offset forest. We estimate this costs \$1,500 per ha for an exotic plantation forest. We do not expect is cost per hectare to different from the status quo. However, the higher uptake rate (400ha more offsetting per year) create the impression of higher costs.
- 215 Anecdotal evidence³⁹ also indicates that the flexibility offered by improving pre-1990 forest will reduce the impact of other regulations on the primary industries. For example, pre-1990 forest offsetting would enable a farm forester to move forest off rolling country onto an eroding hill side at least cost (as there is no deforestation liability). These benefits are not quantified.

Evaluation against criteria

Criteria	Option	
Primary Criteria	Status quo	Improved flexibility around offsetting
Increases incentives to store carbon in forests and harvested wood products	NA	NA
Administrative efficiency and effectiveness for regulators	0 The current system is inefficient and complex to administer	+ While there is some increased administrative burden from the new approach, this will countered by fewer compliance issues.
Improves ease of compliance for participants	0 Offsetting participants currently have a risk of non-compliance.	++ The system and rules will be easier to understand.
Secondary Criteria		
Allocates obligations and entitlements to support alignment with climate change targets	NA	NA
Provides durable regulatory certainty and predictability	0 Currently offsetting applicants will be uncertain that they will be able to fully comply.	++ An improved process will allow participants more certainty that their offsetting application will comply.

³⁷ Previous deforestation intentions surveys have reported figures as high as 2,000ha.

³⁸ This is based on average sale price of dairy farms in the three months to September 2018. To estimate a range we use \$40,000 which is the average sale price in the three months to October 2017. Source REINZ media release, *A Great Spring For Farming*, dated 21 November 2018.

³⁹ Based on conversations with rural professionals and farmers.

Avoids unintended consequences	0 The current rules are impractical and restrictive and can lead to applicant's inadvertent non-compliance.	+ Would avoid applicants failing to meet the current restrictive criteria in the Act
Consistent with wider climate change and wellbeing priorities	0	++ A large proportion of pre-1990 land is owned by Māori, and this option will provide an improved process to offset for these landowners.
Overall assessment	0	++
Table key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than		

What do stakeholders think?

- 216 Prior to the 2018 consultation, we tested this approach with the Forestry Reference Group, and other key stakeholders, who agree that the current rules for offsetting do not work. While some stakeholders want even more flexibility than our proposed solution (refer above), we believe the proposal strikes the correct balance between flexibly for the landowner and the Crown's ability to ensure compliance.
- 217 The 2018 consultation showed there was strong agreement with the options for improving the deforestation offsetting process for pre-1990 forests.
- a) There were 57 submissions of which 82% were in support, 5% opposed and 12% not sure. Those in favour considered that the current mechanism isn't working as intended, and improvements would increase flexibility and would likely increase the uptake of offsetting.
 - b) There were 48 submitters who had considered using offsetting, and of these 25% faced barriers to its use. They thought the process is complex and inflexible, the timeframes are restrictive, and they are exposed to a risk of non-compliance.

B. Improved process for tree weed deforestation exemptions

What is the policy problem or opportunity?

- 218 Owners of land containing pre-1990 tree weeds (wildings) may apply for an exemption from deforestation liabilities if they want to remove the tree weeds. However the process for this exemption:
- Is a barrier to landowners using this option to reduce the cost of controlling tree weeds due to the need to complete the control programme within fixed timelines, unrelated to when the exemption was granted;
 - Is a costly and complex process for Te Uru Rākau to administer; and
 - Excludes areas of pre-1990 tree weeds which would benefit from removing tree weeds (wildings).
- 219 Tree weed spread is a significant environmental and conservation issue in New Zealand. The exemption process is highly prescribed and has limited flexibility; and exemptions cannot be applied for pre-1990 tree weed forest land that received an allocation of units under the Forestry Allocation Plan (FAP) in 2012.
- 220 The success of *National Wilding Conifer Control Programme* which provides government funding for the management of tree weeds depends upon removing pre-1990 tree weed forests entirely from designated priority management zones. The current rules on tree weed deforestation exemptions limit the ability to control tree weeds (wilding) across the landscape.
- 221 Much of the operational detail for tree weed exemptions sits in the Act. This doesn't allow flexibility to deal with eradication in a single area that can take many years to complete, nor to capitalise on the experience gained through the current programmes to control tree weeds.
- 222 For example, the Act requires that, once approved, an area of tree weeds must be completely removed by the end of a defined five year period (the current is 2018-2022) otherwise the landowner is responsible for deforestation emissions liabilities. This effectively limits the granting of tree weed exemptions to the first few years of the period, otherwise the landowners are bearing significant risk of not achieving control.
- 223 Land that received NZUs through the FAP is currently ineligible for a tree weed exemption. Te Uru Rākau is aware of one case where this is acting as a barrier for the owners of a high country farm undertaking tree weed clearance, which is supported by the regional council, DOC, MPI, and Te Uru Rākau.

What is proposed to address the problem?

- 224 The proposal is to provide a more flexible approach to controlling pre-1990 tree weeds, to put most of the process detail into the Regulations; and to remove the FAP related limit from the policy.

225 Key operational improvements will be

- a) Removing the need to publish a public notice prior to tree weed removal;
- b) Enabling applications to be submitted at any time;
- c) Removing the criterion that the land has not been the subject of unit allocations under the pre-1990 forest land allocation plan;
- d) Removing quantitative limits on emissions from tree weed clearance; and
- e) Other relevant operational details will be moved into regulations.

Cost Benefit assessment.

226 This proposal will result in Te Uru Rākau facing fewer operational costs per year (between \$4,385 and \$6,885) from granting the exemptions. This is made up of:

- a) Reduced administrative costs in granting the exemption by around \$7,385 per year (e.g. not having to issue a notice); and
- b) We have taken into account increased costs from processing more applications (due to simpler process we expect more people to apply for this exemption) of between \$500 and \$3,000.

227 The more material benefits will be from removing the ETS as a barrier to control of tree weeds. This will assist in maximising the benefits from the \$11 million spent on tree weed control each year. However, we do quantify the benefits as part of this analysis.

Evaluation against criteria

Criteria	Options	
Primary Criteria	Status quo	Simplified tree weed exemption.
Increases incentives to store carbon in forests and harvested wood products	0	- An improved process will allow participants to remove tree weeds without incurring liabilities. While this will reduce carbon stores, the effect will be minor due to the limited scope of this exemption.
Administrative efficiency and effectiveness for regulators	0 The current process is not efficient or fully effective	++ There will be gains in efficiency and effectiveness
Improves ease of compliance for participants	0	++ Landowners who are under pressure to remove tree weeds will face a more user friendly process, however, there will be minimal savings for the Crown.
Secondary criteria		
Allocates obligations and entitlements to support alignment with climate change targets	0	0 This option removes a carbon sink, but as it is pre-1990 forest and weed species it is unlikely to contribute to the target.

Provides durable regulatory certainty and predictability	0	+ Ann improved process will increase certainty around treatment.
Avoids unintended consequences	0 Landowners are constrained by rigid timeframes which limits uptake	+ Landowners will have more flexibility to complete their tree weed clearing programmes
Consistent with wider climate change and wellbeing priorities	0	++ Improved control measures for tree weeds will be supported by the public.
Overall assessment	0	++
Table key: Variations from the status quo: ++ much better; + better than; 0 about the same; - worse than; -- much worse than		

What do stakeholders think?

- 228 Tree weeds (or wilding conifers) are widely recognised as an environmental problem. There is ongoing public concern about their spread so proposals for their control will likely be supported.
- 229 There was strong agreement with the proposals to improve the tree weed deforestation exemption process. Of the 51 submitters on this question, 80% were in support, 2% opposed and 18% not sure. There was general agreement with the concept of moving operational detail into regulations, and allowing areas that had received an allocation of units under the FAP to apply for an exemption.
- 230 Of the 39 submitters who had attempted to control tree weeds on their land, only 18% had faced barriers, 59% had not and 21% were unsure. Those that had encountered barriers thought that the exemption process should be more simple and flexible.

C. Excluding post-1989 forest land with tree weeds

What is the policy problem or opportunity?

- 231 Tree weeds (including wilding pines) pose a threat to the environment due to their ability to spread and colonise other land. Currently it is possible, in some situations, to register land with predominant tree weed cover in the ETS.
- 232 The Act was amended in 2012 with the intention of excluding forest land with predominant tree weed cover from being registered as post-1989 forest land in the ETS. To avoid issues of retrospective application, participants who had registered tree weeds before the amendment were able to remain registered. However, existing ‘tree weed’ participants are able to add more land containing tree weeds to their registered areas, which undermines the policy intent.
- 233 If land with predominant tree weed cover is registered in the ETS, the landowner would have to repay the units issued if a later decision is made to deforest. The opportunity is to amend the Act to prevent participants who had registered as participants before the commencement of the 2012 amendments from adding further tree weed land to their registration.
- 234 This problem has only occurred in a few cases. However, the potential to encourage the establishment of tree weeds needs to be completely removed to avoid unintended adverse environmental effects.

What options are available to address the problem?

- 235 Two options were considered:
- (1) remove from the ETS any post-1989 forest land containing predominantly tree weeds that was registered after the Act was last amended in 2012; or
 - (2) prevent all future registrations of post-1989 forest land containing predominantly tree weeds, and remove any areas where the predominant forest species becomes a tree weed.

Costs and benefits of the proposal.

- 236 It is not expected that either proposal will have a significant impact on cost the Crown’s day to day regulatory functions.
- 237 However, the removal of existing registered land (option one) would require either:
 - a) The forest owner to find units to meet the liability for the areas removed; or
 - b) The Crown to ‘write-off’ this liability (by not requiring the surrender).Providing exact figures on this cost is challenging, but could be as high as 500,000 NZUs (\$12.5m). This cost is avoided if the preferred option (2) is selected.

Evaluation against criteria

Criteria	Options	
Primary Criteria	Remove all tree weed land registered after 2013	Prevent all future (post CCRA change) registration of tree weed land (preferred)
Increases incentives to store carbon in forests and harvested wood products	- Does not create any incentive to store carbon	- Does not create any incentive to store carbon
Administrative efficiency and effectiveness for regulators	NA	NA
Improves ease of compliance for participants	NA	NA
Secondary criteria		
Allocates obligations and entitlements to support alignment with climate change targets	NA	-NA
Provides durable regulatory certainty and predictability	-- Registration requirements are clear, but would have retrospective effect on those with ETS registered forest	++ Registration requirements are clear and there is no need to remove registered land
Avoids unintended consequences	- Removes any possibility of registering tree weed land, but will impact on those registered participants using carbon income to assist in tree weeds.	0 Some tree weed land would remain registered, but the income from these lands is being used to control the weeds.
Consistent with wider climate change and wellbeing priorities	+ Aligns with the New Zealand's agenda to eradicate tree weeds.	+ Aligns with the New Zealand's agenda to eradicate tree weeds.
Overall assessment	-	+
Table key: Variations from the status quo:		
++ much better; + better than; 0 about the same; - worse than; -- much worse than		

What do stakeholders think?

238 Only 15 submitters commented on this issue. We did not consult on a preferred option.

- 239 Some submitters stated that owners of tree weed forest should be able to obtain economic benefits from carbon which may make it economically feasible to manage the area and potentially convert the wilding tree species to a non-spread risk tree species over time. Others were concerned about retrospective application of an amendment back to 2012 which they considered would be unjust.
- 240 A subset of the forest industry advocates that tree weeds be allowed to establish in large areas of non-forest land, as a low cost way to achieve New Zealand's international targets. Te Uru Rākau, MPI, DOC and MfE do not view this a viable approach as:
- (1) Enabling the spread of wilding conifers is contrary to the Government's *National Wilding Conifer Control Programme*⁴⁰ which aims to prevent the spread of tree pests and to progressively remove them from much of the land already invaded;
 - (2) The international rules relating to carbon sinks for forestry require the wider consideration of environmental impacts (e.g. biodiversity). The expansion of tree weeds is likely to fail this test; and
 - (3) Expanding areas of wilding conifers is of significant concern to the public, and their encouragement will likely lead to a reduction in the social licence to operate for well managed exotic forests.

Conclusion

- 241 Option (2) is preferred. Both options would achieve the objective of preventing post-1989 forest land containing predominantly tree weeds to be registered. Option (1) however would have a retrospective effect as any forest land with tree weeds registered from 2013 to the date on which the new amendment comes into force would be unilaterally removed from the ETS. In general, retrospective impacts are avoided especially if they impose costs on the public.

⁴⁰ The Programme is led by MPI, DOC and Land Information New Zealand (LINZ).

D. Deforestation exemptions for land in multiple ownership

What is the policy problem or opportunity?

- 242 Since 2012, persons who owned less than 50 hectares of pre-1990 forest land have been able to apply for the land to be declared exempt from deforestation liabilities. This is because the emissions from the likely deforestation of these small blocks is not material in relation to New Zealand's total greenhouse gas emissions. Exempting them removes a significant compliance burden for these forest owners and the government, for a small cost.
- 243 As well as the area test, accessing the exemption required each person who was the legal owner of the land on 1 September 2007 to make a statutory declaration that they owned fewer than 50 ha of forest on 1 September 2007⁴¹.
- 244 Generally, jointly owned land is vested in a management structure such as a trust or company. The Te Ture Whenua Māori Act provides structures for Māori freehold land such as ahu whenua trusts or Māori incorporations. In all these cases, only the trustees have to comply with the exemption application conditions. The conditions however, have proved exceedingly challenging where a land block is not constituted in a trust or other structure, and has numerous owners.
- 245 As at June 2017⁴², 18% of Māori land was not vested in a management structure. This area is comprised of 16,021 blocks i.e. 58% of all Māori land blocks. These blocks have an average size of 16 hectares and average 28 owners, but variation is large.
- 246 Factors that make it exceedingly difficult for Māori freehold land to be exempted include ownership records not being up-to-date, significant numbers of owners (some blocks in excess of 300) and the difficulty locating and contacting all the owners registered on the block title (the Māori Trustee estimates that they have contact details for around 50 per cent of owners of most blocks). These factors mean that completing a statutory declaration from every owner is administratively difficult, if not impossible. This effectively deprives Māori of an option to access an exemption open to other owners of pre-1990 forest.
- 247 In late 2018 the Government provided an exemption for one block of multiply owned Māori land from deforestation liabilities under section 60 (refer paragraph 254(1)). A key part of the decision to grant the exemption was the under 50 ha exemption offered to other landowners.

What options are proposed to address the problem?

- 248 The current rules have the unintended consequence that not all owners of multiple-owned land are able to obtain an exemption for their pre-1990 forest land. The

⁴¹ The 50 ha test does not consider the current forest holdings of the landowner (e.g. they could have acquired additional forest land in 2017), the key test is that the landowner must have had less than 50 ha on 1 September 2007.

⁴² Māori Land Update – Ngā Āhuatanga o Te Whenua June 2017 Maori Land Court.

proposal would resolve this, and reduce the complexity faced by these owners. The issue is particularly relevant to Māori freehold land that was not incorporated in a trust or incorporation when the last round of exemption applications was implemented.

249 This proposal includes the following provisions >:

- a. We propose that land which meets the following criteria will be eligible to access the exemption provisions:
 - i. land that had more than 10 of owners on 1 September 2007; or
 - ii. land that is Māori freehold land under Te Ture Whenua Māori Act
- b. We propose that trustees or agents appointed by the Māori Land Court can apply for this exemption regardless of when they were appointed, as long as the land in question is meets the criteria defined above.
- c. To overcome the issue of trustees or agents who administer several small land parcels (which when added together equal forest land holdings of over 50ha) being precluded from accessing this exemption, we propose the following approach:
 - i. In considering the application we will not take into account the aggregated total of forest land administered by the trustee that is applying for the exemption.
 - ii. Instead, we will assess the forest land on the title that is being put forward for this exemption and if it was registered as less than 50ha at 1 September 2007 it will be considered eligible for this exemption (as long as the land meets the criteria in (a)).
- d. We propose to remove the deadline for applications for this exemption and enable people to access this exemption in perpetuity (with relatively small areas of forest land being eligible for this revised exemption the operational impact of this is minimal).
- e. We propose that land that has received a Forest Allocation Plan allocation⁴³ of NZUs will not be eligible for this exemption. This is a continuance of the status quo.

250 As this change will enable landowners to access an existing exemption, it is not anticipated to have a fiscal cost (as these areas were included in the initial assessment of the area). Obtaining this exemption increases land use flexibility which in turn supports economic growth and social resilience.

251 Two alternatives were considered and discarded:

- (1) Use of section 60 exemptions under the Act: The Minister could recommend a class exemption for all land blocks that contained less than 50 hectares of pre-1990 forest land. This is not preferred as the section 60 exemption process is administratively burdensome to complete⁴⁴. A specific legislative change to the

⁴³ The forest allocation plan offered all owners of pre-1990 forest up to 60 NZUs per hectare to recognise the impact of the ETS on land values.

⁴⁴ The exemption referred to in paragraph 246 was the result of over 3 years of consultation, Cabinet papers and drafting by PCO.

exemption requirements would be simpler and would better target those blocks where deforestation is likely.

- (2) Amend the Act to exempt all pre-1990 forest land on Māori land subject to the Te Ture Whenua Māori Act 1993: This would however, go further than the policy intent which is to put the owners of Māori freehold land in the same position as non-Māori landowners. It would be more challenging as it would require the upfront assessment of all forest land on all blocks of Māori land, regardless if there is an intention to deforest. In contrast the preferred application process will better target those blocks where deforestation is likely.

Cost benefit analysis

- 252 Simplifying the application process offers significant benefits to the land owners as they gain flexibility over their land management decisions at lower cost. To convert to a non-forest land use they would not need to surrender around 650 units per hectare (around \$16,000 per hectare), and allow the landowners to convert their land to a higher value use (e.g. dairy or horticultural land⁴⁵).
- 253 It is expected that 2,500 ha of land will be eligible for this exemption (this is based on mapping undertaken as part of previous policy work). It is assumed that this land will be converted as it comes up to harvest so is averaged to 100 ha of use per year.
- 254 This proposal will impose around \$4,000 of annual operating cost on the Crown (as exemption applications are processed).
- 255 The area subject to these exemptions was considered as part of the original policy decisions for the exemption. Because of this, simplifying access to the exemption is not expected to increase costs to the Crown.

Evaluation against criteria

Criteria	Options	
Primary Criteria	Status quo	Offer simpler access to the exemption
Increases incentives to store carbon in forests and harvested wood products	0	0
Administrative efficiency and effectiveness for regulators	0 Currently some pre-1990 forest landowners are unable to comply with application requirements	++ All landowners will be able to comply with application requirements.
Improves ease of compliance for participants	0 As above	++ As above
Secondary criteria		

⁴⁵\$30,000 for dairy land and \$200,000 for horticultural land. REINZ media release, *A Great Spring For Farming*, dated 21 November 2018. In the sensitivity analysis we use \$30,000 and \$40,000 per ha (refer p59)

Allocates obligations and entitlements to support alignment with climate change targets	NA	NA
Provides durable regulatory certainty and predictability	0 There is no certainty that some landowners will be able to access the exemption	+ Regulatory certainty is improved
Avoids unintended consequences	0 Some landowners are excluded from the exemption	+ The unintended consequence is removed
Consistent with wider climate change and wellbeing priorities	0	++ Outcomes for Māori land will be improved
Overall assessment	0	++

Table key: Variations from the status quo:
 ++ much better; + better than; 0 about the same; - worse than; -- much worse than

What do stakeholders think?

- 256 This issue became evident in 2012 when the Forestry Allocation Plan and 50 hectare exemption process was underway. Māori in particular are aware of the issue, and we have worked with Te Puni Kokiri and the Maori Trustee on non-legislative options to resolve it without success.
- 257 There was a mixed response to the question on how multiple-owned land should be defined. The proposal was that, if a land block had 10 or more owners on 1 September 2007, then trustees or an agent appointed by the Maori Land Court, either of which could be appointed after 1 September 2007 would be the person(s) who could make an application for an exemption. There were 40 submissions on this question of which 43% were in favour, 18% opposed and 40% not sure. Those opposed did not elaborate their reasoning, commented on pre-1990 deforestation more generally or disagreed with the underlying exemption policy, although one submitter suggested a lower threshold of five landowners.
- 258 Submitters generally agreed with the proposal that any subsequently appointed trustee or agent should be able to apply for an exemption. Of the 41 submitters, 59% were in favour, 7% opposed and 34% not sure. Those in support thought that this appears to be a sensible and pragmatic approach.

Section 5: Conclusions

What option, or combination of options, is likely best to address the problem, meet the policy objectives and deliver the highest net benefits?

- 259 Overall MfE and Te Uru Rākau recommend that the four proposed changes described in this document are implemented to address the issues identified with the current legislative framework. All proposals require amendment to the Climate Change Response Act.
- 260 Many of the changes proposed in this RIA are intended to be enabling and to support the overall ETS package of changes for forestry accounting and permanent forests. This will be complemented by 16 minor or technical changes (exempted from RIA requirements), and proposed improvements to the penalty and compliance, and market governance regimes.
- 261 While some proposals will provide benefits for specific landowners (e.g. multiple-owned land), the majority of the benefit will be from the changes supporting the wider ETS (and forestry programmes) to deliver on their objectives through improved investment confidence. This skews the benefit analysis below: individually the benefits are relatively small, but in aggregate are significant.
- 262 Much of the benefit from the minor and technical changes will be to reduce the likelihood of the participant making an error. While improved compliance rates will be beneficial from the Crown perspective (e.g. it will improve the integrity of the ETS, and reduces operational costs), the key benefit for the participant will be to reduce the risk of exposure to the (often significant) penalties that result from non-compliance.
- 263 The use of professional service providers (consultants) is not a guarantee that participants will be compliant, as the current law is often unclear and prone to misinterpretation.

Summary table of costs and benefits of the preferred approach

The table below provides an aggregate of the costs and benefits from the proposals in this paper, both permanent post-1989 forest and the operational improvements. These are aggregated in the model commissioned from PWC. Due to timeframes for preparation of the cost benefit analysis, we will be publishing the report and the supporting material in early 2019.

Affected parties (identify)	Comment: nature of cost or benefit (e.g. ongoing, one-off), evidence and assumption (e.g. compliance rates), risks	Impact \$m present value, for monetised impacts; high, medium or low for non-monetised impacts	Evidence certainty (High, medium or low)	For ex- explanations see page
Additional costs of proposed approach, compared to taking no action				
Regulated parties – current PFSI participants	<p>There will be a slight increase in annual cost for the PFSI participants who move into the ETS due to the cost of the annual returns (which Te Uru Rākau does not currently charge for).</p> <p>If the preferred option goes ahead Te Uru Rākau would transfer PFSI participants on an ‘opt out’ basis. Participants may incur a cost if they chose to exit carbon forestry: however this is difficult to anticipate the scale of this as we believe the majority of the registered area will be transferred.</p>	<p>Negligible</p> <p>Unknown cost as a result of participants electing not to move.</p>	<p>Medium for the cost of the action.</p> <p>Low for the number of participants who will undertake the action.</p>	p27

Administrative costs dependent on extent of increased planting activity:				
Regulated parties – operational improvements.	Costs spread across all participants using offsetting costs are around \$600,000 higher per annum (\$1.05m vs. \$0.45m) a result of the operational improvements. However, this is exclusively due to the expected increased use of offsetting (a voluntary business decision) by participants and the need to establish the offset forest.	\$7.5	Low, Due to the uncertainty of uptake rate.	p57
Regulators (Te Uru Rākau/MPI, EPA)	<p>There would be an initial administrative cost of moving PFSL participants into the CCRA, transferring registered post-1989 forests into the permanent post-1989 activity and developing new operational policy and staff training.</p> <p>It is not expected that there would be significant up-front costs from implementing the operational changes: this will incorporated into BAU policy review.</p> <p>It is expected that the increase in the annual operating costs for all proposed changes is \$90,000. This increase in cost is primarily due to the expected increases participant numbers that use the improved options</p>	\$1.18	Medium	p27, p47, p62, p69
Wider government	No significant increases in costs are expected.	Low cost	Medium	
Other parties	No significant increases in costs are expected.	Low cost	Medium	
Total Monetised Cost	n/a	\$8.68	Medium	
Non-monetised costs	n/a	<i>Low cost</i>		

Expected benefits of proposed approach, compared to taking no action				
Regulated parties	The most significant benefit to those wishing to earn carbon from permanent forests is the avoidance of the cost of a covenant (up to \$4,800 per application).	\$4.2	Medium	p27
	Carbon sequestration in permanent forests due to increased establishment plus co-benefits (e.g. honey) less foregone benefit of harvesting of pine forests.	\$120 (range \$120-\$195)		p27
	Benefit from forestry land moved to higher value land use as a result of simpler rules.	\$297 (range \$297 to \$350)		p59, p69
Regulators	There will be some benefits to the regulator from avoided operational costs. However, as there is an overall increase in costs from the changes, these are netted above in the cost table.	n/a	Medium	p27, p47, p57 p62, p69
Wider government	For the Crown: increased forest area will assist New Zealand in meeting international targets and reducing net emissions.	Medium	Medium	p19
	Increased flexibility from land use will enable landowners to react to other drivers (e.g. water quality regulation) at a lower cost, and therefore reducing the impact of those regulations.			
Other parties	Where marginal land gains permanent forest cover we expect a range of social, environmental and cultural benefits to result. These are challenging to quantify.	n/a.		

	The operational improvements and permanent options will increase land use flexibility, and be particularly attractive to Māori and other owners of pre-1990 forests.			
Total Monetised Benefit	<p>The total benefits we have assessed is likely to be conservative, due to conservative assumptions on the uptake of the activity and the increase in the carbon price.</p> <p>The uncertainty arises as we are unsure around the uptake of these policies by land and forest owners.</p>	\$412.5 - \$549.2	Medium	
Non-monetised benefits	<p>It is expected that there will be other social, environmental, and cultural co-benefits from the establishment of permanent forests. However, these are difficult to value.</p>	Medium.	Medium.	

Is the preferred option compatible with the Government’s ‘Expectations for the design of regulatory systems’?

- 264 The preferred option is compatible with the Government’s ‘Expectations for the design of regulatory systems’.

Section 6: Implementation and operation

How will the new arrangements work in practice?

Permanent post-1989 are designed to use as much of the existing ETS as possible, but there is still work to be done to finalise the system.

- 265 Through the design of the permanent post-1989 forest activity we have been careful to ensure that we can use as much of the post-1989 definitions and supporting systems as possible. This has three benefits:
- a. It reduces the complexity of introducing the activity for landowners and Te Uru Rākau and allows much of the operational information (e.g. guides on forest mapping) to be used for the permanent post-1989 forest.
 - b. It means the wider regulations will apply to the permanent post-1989 forest type. For example changes to the default yield tables will automatically apply to permanent post-1989 forest.
 - c. It simplifies the IT system needed to register the ETS, and reduces the complexity of the Climate Change Information System rebuild (refer below).
- 266 Once accounting decisions are made in March 2019, we will begin to develop a set of proposed updates to the regulations. It is expected that these will be consulted on from July 2019, with an implementation date from 1 January 2021. This will address those decisions in this paper where the operational detail is in regulation.

Operational changes

- 267 The operational improvements will be implemented through operational policies developed by Te Uru Rākau and the EPA. With the time before the ‘go live’ date of the legislative changes, operational policy will be developed.

Outreach around the changes

- 268 Following the finalisation of the decisions on forestry, and legislative changes being implemented, the changes to the ETS will be communicated to stakeholders through existing channels (website, email distribution lists), the updating of existing guides and stakeholder workshops as required. This will be part of a wider programme around the introduction of the changes to post-1989 forests.
- 269 Through Te Uru Rākau’s work with stakeholder groups relating to other programmes relating to forestry we intend to communicate the options around the ETS and carbon

forestry. This communication of options is becoming increasingly business as usual, as we work to promote informed decisions by land and forest owners. When the legislation passes (late 2019) and there are regulations in place, we will be better placed to determine the appropriate response.

- 270 Three significant operational improvements will require new ‘public facing’ information around the opportunity offered.
- d. Pre-1990 offsetting,
 - e. Multiply owned land;
 - f. Pre-1990 tree weeds

We have incorporated this into our BAU policy refresh planning.

- 271 In addition to the above, Te Uru Rākau will work with agencies active in these areas to highlight the opportunity offered by the changes and facilitate access to the changes (e.g. work through TPK and Te Tumu Paeroa on the multiply owned land issue).

What are the implementation risks?

There are risks to delivering the change if the regulations are slow to develop

- 272 We will be developing regulations for both the changes in this RIA and the decisions taken in March. The project time lines we have allowed a 6 month period, following consultation on the regulations, to draft and test them. However if this process is held up, then there is a risk the implementation date for these changes also will need to be delayed.

The Climate Change Information System requires a rebuild

- 273 The Climate Change Information System (CCIS) which is used for all forestry participants requires a rebuild to ensure that it can continue to operate. The technical components that make up the CCIS platform are not either out of support or at end-of-life. This will be a multi-year process (at least till 2022). While the changes in this paper are not driving the rebuild, they influence what the system will need to deliver. A CCIS Replacement project is in development to better define and detail business requirements for the replacement system.

Existing PFSI participants

- 274 There are currently 60 landowners who have a PFSI covenant registered against the title of their land. The proposal is for current PFSI participants to automatically transfer to the ETS as permanent post-1989 forest participants in respect of the forest land currently subject to a covenant or exit carbon forestry.
- 275 We have worked to make the permanent post-1989 activity equally attractive to landowners than the PFSI. When all changes are considered it is likely to overall more beneficial, due to simpler and less costly administration (through moving into one regulatory regime) and also giving them a wider set of benefits which reduce the risks from carbon forestry (e.g. adverse events cover).

276 We will work with all PFSI participants to transition them to the new activity and reduce the complexity and operational burden of them transitioning to the new activity. However, while there is a slight risk that some participants may be hesitant, we will work to manage this risk.

Section 7 Monitoring, evaluation and review

How will the impact of the new arrangements be monitored?

- 277 The impacts of the changes would be monitored through current reporting lines and processes – that is, by analysing the reaction of stakeholders, rates of non-compliance, new registrations, and withdrawal rates, uptake of applications for transfer to permanent post-1989 and through forestry stakeholder reference groups.
- 278 Monitoring and evaluation of the specific provisions in place will be ongoing. If there is a significant shift in the data gathered through the BAU monitoring (above) Te Uru Rākau will explore the reasons for this and determine if the result of a change in the wider ETS⁴⁶, New Zealand’s primary sectors⁴⁷, an issue with how the forestry parts of the ETS are perceived (a communication issue), or an issue with the legislation/regulation.
- 279 We will also be linking to the international greenhouse gas reporting system (LUCAS, run by MfE), which we will use to assess the impact of the permanent forest activity on New Zealand’s international accounting.
- 280 We intend to focus on how areas of permanent forest which are close to the minimum 30% tree crown cover are being managed. This is both:
- To assist with compliance monitoring (to ensure the forest does not drop below this level and become non-compliant); and
 - To monitor the wider environmental impacts of these forests and ensure the other legislative instruments (e.g. the National Environmental Standards for Plantation Forests) are working as intended for these areas.

When and how will the new arrangements be reviewed?

- 281 Information on the success of the changes, and any new issues with ETS implementation are collected on an on-going basis. While no formal review is planned, we would expect any changes be made when the next opportunity to amend the Act arises. Should the Minister of Climate Change initiate a review under s160 of the CCRA we would include the permanent forest option in that review.

⁴⁶ For example, a decline in the carbon price would result in reduced registration rates.

⁴⁷ For example, if the dairy pay out increases we would expect lower rates of new forest establishment on dairy support land.

Appendix One: Policy options for permanent forests which have been discarded.

High level Policy to provide NZUs to permanent forests.

In the discussion of the high level policy options for permanent post-1989 forest we rejected two options. The detail of why this is the case is below.

Option 2: Improve the PFSI.

- 282 We identified two types of change that could be made, but neither achieves the objective of simplifying the PFSI (and encouraging participation);
- ***Examine what the covenant includes:*** There is little scope to simplify the covenant option as it is necessary for the PFSI to operate through the Forests Act. However, one of the key operational difficulties with the existing scheme, is the use of the covenants, and the variation across the 60 that exist. The cost of entering into a covenant has also been identified as a barrier to entering the scheme.
 - ***Duplicate the CCRA in the PFSI.*** An option to simplify the covenants would be to attempt to duplicate the operational parts of the CCRA for forestry into the Forests Act. This option would be highly risky as there would be two sets of very similar legislation in place, and any changes would need to be reflected in both places to ensure consistency. We would also need to develop a shared legislative framework to address how ‘PFSI’ forests would interact with post-1989 forests in the ETS⁴⁸, administered under a different Act.

Option 3: Discontinue the PFSI

- 283 Discontinuing the PFSI would mean the only option for forests to receive NZUs would be the current post-1989 forest activity in the ETS. This would present a number of challenges for both incentivising permanent forests, and the options in the Accounting work stream:

- i. If post-1989 forest needs to incorporate permanent forests some of the design questions in the averaging RIA would more challenging to address. For example, the new and existing forest discussion) is made significantly more complex if it must address both rotational and permanent forests;⁴⁹
- ii. Crediting permanent forests units up to the average (as is proposed for rotational forest) does not fully reward the carbon sink in permanent forests. This reduces the financial incentive to establish them; and is unlikely to result

⁴⁸ An example of this would be developing a solution to allow a PFSI forest at the end of its 50 year period that the owner wishes to register as post-1989 forest in the ETS (e.g. averaging to enable harvest). This forest would need to surrender its unit balance (the number of units received). Upon joining the ETS this area of forest would have its eligibility reassessed and could only claim units back to the start of the five year period (the Mandatory Emissions Returns Period).

⁴⁹ For example, a regenerating native forest will become forest land when there are enough young trees (including regeneration) that Te Uru Rākau is satisfied it will meet the forest land definition, when the trees are mature. This means it is likely that areas where stock have been excluded are quite likely to be existing forest.

- in increased long-term carbon storage because maintaining a forest over time requires a steady cash flow from carbon credit sales;
- iii. Developing an option to differentiate permanent forests from rotational forests within the post-1989 forest option would add significantly to the complexity⁵⁰ of post-1989 forests, undermining the benefits of introducing averaging;
- iv. Ability to define ‘permanent’ in a binding way, which would be very challenging if permanent forests are mixed in with averaged forests; and
- v. It will be more challenging to differentiate NZUs from the permanent forest from NZUs from rotational forests. This differentiation is important as permanent forest NZUs tend to sell at a premium increasing the income of the permanent forest owner.

Should forest offsetting be available to Permanent forests?

- 284 We do not propose to offer permanent post-1989 forest the option to use forest offsetting (either during or at the end of 50 year non-clear fell period). Forest offsetting increases land use flexibility by allowing an area of exotic forest to be converted to non-forest use, provided at least the same area of forest is planted elsewhere and this new forest reaches equivalent carbon stock within a set time period.
- 285 With permanent post-1989 forest expected to be primarily native forest, naturally regenerating (unplanted) forests and/or land best suited to forest cover, offering offsetting could undermine benefits (carbon and non-carbon) we expect from these forests.
- 286 Offering offsetting to non-planted forests would lead to a departure from the international approach for ‘Carbon Equivalent Forests’⁵¹, and mean we could not claim these areas in international accounting. This would create a fiscal risk for the Crown.

⁵⁰ This complexity is both operational (e.g. differentiating non-harvest from harvest forest) but also related to the policy options being considered around the introduction of averaging, e.g. if permanent forest were included in post-1989 forests the definitions of ‘new’ and ‘existing’ forests under averaging become significantly complex.

⁵¹ What offsetting is known as internationally

Appendix 2: Glossary

<p style="text-align: center;">NOTE</p> <p>This glossary is intended to assist the reader of this RIA.</p> <p>While the definitions follow those in the CCRA (and elsewhere) they should not be treated as having any legal standing.</p>	
Term	Definition
50 year non-clear fell period	The time when a registered permanent post-1989 forest activity must remain in the ETS for this period and is subject to the restrictions on harvest.
Accounting	In the ETS this refers to the counting of carbon stored in registered forests from their forest growth, and the amount emitted upon harvest or deforestation. This is equated into emissions units that are allocated to participants for forest growth, and required to be surrendered when emitting.
Accounting approach	In the ETS this refers to the method used to count our greenhouse gas emissions and sinks in the ETS.
Activity/Activities	When an emitter (or a forest owner) undertakes an action which means they become a participant they are deemed to be undertaking an 'activity'. Activities are divided into two types: <ul style="list-style-type: none"> i. Mandatory activities in Schedule 3 of the CCRA where anyone undertaking this activity must become a participant (e.g. deforesting or offsetting pre-1990 forest) ii. <i>Voluntary activities in Schedule 4 of the CCRA where anyone undertaking this activity may elect to become a participant (e.g. owning, holding a registered forestry right, or being the leaseholder of post-1989 forest land)</i>
Adverse events	A natural event that either temporarily or permanently disrupts the growth of a forest by removing all or part of the trees in an area. Examples include wind throw, earthquakes, floods and landslides. This edition is subject to further work and will be developed in the March paper.
Afforestation	The establishment (either by planting or natural regeneration) of forest on land that did not previously have tree cover.
Allocation	The Crown gives emissions units to ETS participants who are eligible to receive units for their activities. For example an eligible forest owner who is registered in the ETS will receive allocated emissions units from the Government in accordance with their forest growth.
Averaging	The averaging accounting method allocates emissions units to participants that reflect the amount of carbon stored in their forest over the long-term. The details of this approach are the majority of the decisions in the March paper
Backdate	The ability to retrospectively count the eligibility of a forest (i.e. in terms of units owed or date of planting) when entering a scheme or transitioning schemes.
Basal area	Means the cross-sectional area of the stem of a tree measured over bark at a point that is 1.4 metres from ground level on the uphill side of the tree and expressed in square metres (Regulation 4 of the Climate Change (Forestry Sector) Regulations).
Biomass	'Below ground biomass' refers to the root systems of the tree that remains in the ground after harvest. These roots will contain and store carbon long-term.

Carbon accounting area / CAA	Carbon accounting area means an area of post-1989 forest land that— (a) is defined by a person who is registered or has applied to register as a participant under section 57 in relation to an activity listed in Part 1 of Schedule 4; and (b) meets any relevant criteria specified in regulations made under this Act; or (c) is constituted as a carbon accounting area by operation of section 188(7)(b) or 192(3)(b)
Carbon equivalence	When land is the subject of an offsetting land application under 186A, Carbon Equivalence means the offsetting forest land will contain the same carbon stock as the pre-1990 land at the time of clearing within the usual rotation period for forest species on the pre-1990 land
Carbon price	The cost of one emissions unit (NZU). One emissions unit represents one tonne of carbon dioxide equivalent.
Carbon sink	Natural and artificial processes which take carbon dioxide from the atmosphere and store it are known as ‘carbon sinks’. Forests are a good example of a carbon sink, as they take in and store carbon dioxide through the process of photosynthesis.
Carbon Stock	The amount of carbon that is contained within a forest.
Carbon stock change	Addition or removal of carbon stock contained in a forest.
Clear fell harvest	A harvesting system in which all merchantable trees within a specified physical area of land are felled and no significant tree cover remains. This is the approach most commonly used in New Zealand’s production forests. This will be subject to further refinement in the drafting of the Bill
Climate Change Response Act (CCRA) 2002	A legal framework to enable New Zealand to meet its international obligations under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.
Commercial forest	A forest grown primarily for the purpose of earning an income from harvested timber.
Crediting	Refers to how much forest growth (carbon storage) a participant can receive emissions units for. If a participant is ‘allocated’ emissions units they are being ‘credited’ for that carbon stored.
Crown	The New Zealand Government
Cutting right	A cutting right in this example would refer ‘the right to maintain and harvest’ the forest as created by the proprietor of the forest land under section 2A of the Forestry Rights Registration Act 1983.
Deforestation	(a) Means to convert forest land to land that is not forest land; and (b) Includes clearing forest land, where section 179 applies.
Deforestation liability	A participant must pay back any New Zealand Units owed when deforesting in the ETS.
De-registration	Post-1989 forest land participants may cease to be a participant in the ETS at any time by applying to be removed from the register of participants. A participant can cease to be registered in the ETS voluntarily, or because the land is no longer eligible (for example, following deforestation).
Emissions Mitigation	The reduction or removal of emissions. In Forestry, this specifically regards carbon sequestration, as forests act as a carbon sink.
Emissions trading scheme/ ETS	The New Zealand Emissions Trading Scheme (ETS) was created through the Climate Change Response Act 2002 (the Act), which was passed in recognition of New Zealand’s obligations under the Kyoto Protocol. It is the primary method for the New Zealand Government to achieve its long-term commitment to reduce our greenhouse gas emissions.

Environmental Protection Authority/ EPA	The EPA runs the register for participation under the ETS and has delegated authority under the CCRA, however a range of functions relating to forestry activity are sub delegated to MPI/Te Uru Rākau.
Equivalent forest	Would be on forest land that satisfies the definition of post-1989 forest land in section 4 of the CCRA, and would be land: <ul style="list-style-type: none"> (a) that has a total area (whether or not adjoining) that is equal to or greater than the total area of the post-1989 forest land that is to be offset by that land (whether or not adjoining); and (b) in which each individual parcel that makes up the total area of the offsetting forest land is at least 1 hectare with an average width of at least 30 metres;
Exemption	Where a person or class of persons carrying out an activity listed is exempt from being a participant under the Act.
Field Measurement Approach (FMA)	A method used to calculate how much carbon is in post-1989 forest land (the 'carbon stock') from information collected by the participant. Participants must use the FMA if a participant: <ul style="list-style-type: none"> a) has 100 hectares or more of post-1989 forest land registered in the ETS at any time during a mandatory emissions return period, or b) Holds a covenant in the PFSI subject to the FMA, and have a forest sink area of 100 hectares or more at any time during a mandatory emissions return period. FMA participants are assigned a network of plots that must be measured. The number of plots increases with the registered forest size, but the minimum number does not increase linearly (e.g. a 100 ha forest needs 30 plots, while a 200 ha forest needed 37 plots).
Forest Allocation Plan	The Climate Change (Pre-1990 Forest Land Allocation Plan) Order 2010. Up to November 2011, owners of pre-1990 forest land were given the option to apply for a one-off allocation of New Zealand Units, in recognition of the impact of the ETS deforestation rules. They do not receive further NZUs if their forest's carbon stock increases.
Forest estate	All of New Zealand's forest, both commercial and permanent.
Forest land	(a) means an area of land of at least 1 hectare that has, or is likely to have, tree crown cover from forest species of more than 30% in each hectare; and (b) includes an area of land that temporarily does not meet the requirements specified in paragraph (a) because of human intervention or natural causes but that is likely to revert to land that meets the requirements specified in paragraph (a); but (c) does not include— <ul style="list-style-type: none"> (i) a shelter belt of forest species, where the tree crown cover has, or is likely to have, an average width of less than 30 metres; or (ii) an area of land where the forest species have, or are likely to have, a tree crown cover of an average width of less than 30 metres, unless the area is contiguous with land that meets the requirements specified in paragraph (a) or (b)
Forest recovery	In this context, refers to the re-establishment of forest after an adverse event.
Forestry right	Means a forestry right registered under the Forestry Rights Registration Act 1983. This can involve granting a right to establish, maintain or harvest a crop of trees on the land.
Forestry sector	Those who work directly in forestry, including industry bodies, forest growers, wood processors, manufacturers and exporters.

Forests Act 1949	The harvesting, milling and exporting of indigenous timber is managed under the Forests Act 1949. Under the Act, native timber can only be taken from forests in a way that maintains forest cover and ecological balance.
Harvesting restrictions	A participant is restricted from harvesting their forest within specified legal parameters.
Holding account	An account to facilitate the buying, selling, acquiring or disposing of units. Holding accounts can be opened by private persons, either ETS participants or otherwise, to receive, surrender or sell NZUs.
Interested party	If a landowner is a post-1989 forest participant, the holder of a forestry right, or a lease holder over the land is considered to be an interested party under the CCRA. Similarly, if a forestry right or lease holder is the participant, then the landowner is an interested party.
International emission reduction targets	New Zealand is committed to international climate change targets. As a party to the United Nations Framework Convention on Climate Change and the Kyoto Protocol (MfE Website).
International Reporting	We report our actions in New Zealand's National Communication and Biennial Reports (MfE website).
Land titles	A Certificate of Title (or "land title") states who owns a property. It also lists: <ul style="list-style-type: none"> • any rights and restrictions relating to the title, such as an easement or covenant • who the previous owners of the property were • who else has an interest in the property (e.g. a mortgage)
Land use flexibility	Increasing options for retaining NZUs while allowing participants to alter their forest location, harvest and replant.
Lease	Forestry land that has been registered as leased under the Land Transfer Act 1952 (Part 7).
Legal covenant	Any covenant established under regulations made under section 67Y of the Forests Act, or any variation of that covenant, for the purpose of establishing and maintaining a forest sink; including, but not limited to, controlling the harvesting of timber from the forest sink.
Liability	In this context, liability means the requirement to surrender or repay New Zealand Units under the ETS.
Mandatory Emissions Return	All ETS participants are required to calculate carbon stock change for the Mandatory Emissions Return Period (MERP) Completed return forms must be submitted to Te Uru Rākau within 6 months of the end of a mandatory return period. Other actions (e.g. undertake a Transmission of Interest) may require the submission of a Mandatory Emissions Return, and these are defined in the CCRA.
Mandatory Emissions Return Period (MERP)	The five yearly period which each post-1989 forest land participant is required to report for. The current MERP is 2018-2022
Nationally Determined Contribution (NDC)	How a country states its target under the Paris Agreement on Climate Change. The individually determined contributions that each specific country should make in order to reduce national greenhouse gas emissions and adapt to the impacts of climate change
Natural Regeneration	The commencement of growth of seedlings that are present as a result of a process other than planting.
New Zealand Unit (NZUs)	A unit issued by the Registrar and designated as a New Zealand unit
Pre-1990 forest Offsetting	The option for owners of pre-1990 forest land to remove an area of forest, and not surrender units for the emissions provided a forest of at least equivalent area and carbon stock is established on eligible land.

Paris Agreement	It is an international treaty within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse-gas-emissions mitigation, adaptation and finance, starting in the year 2020.
Participant	In this context, it refers to a person, persons or entity that: <ul style="list-style-type: none"> a) participates in a forestry activity; or b) carries out an activity covered by the ETS/PFSI. A Participant must report on emissions (or on carbon captured) and may need to surrender units to cover their emissions or may receive an entitlement of units for carbon capture.
Permanent forest	A forest which will not be clear-fell harvested.
Permanent Forest Sink Initiative (PFSI)	A forest in the PFSI enters into a covenant with the Crown, which is registered against their land title(s). The covenant is in perpetuity, with the right to terminate after a minimum term of 50 years. Landowners are responsible for establishing and maintaining the forest. Limited harvesting is allowed on a continuous cover forestry basis. Currently administered under the Forest Act 1949.
Permanent post-1989 forest	A proposed new activity in the Climate Change Response Act 2002 (CCRA).
Post-1989 forest land	Post-1989 forest land is land which meets the forest land criteria, and includes: <ul style="list-style-type: none"> I. was not forest land on 31 December 1989; or II. was forest land on 31 December 1989 but was deforested between 1 January 1990 and 31 December 2007; or III. was pre-1990 forest land that was deforested on or after 1 January 2008, and any ETS liability has been paid. This is not a complete definition
Pre-1990 forest land	Pre-1990 forest land: <ul style="list-style-type: none"> i. was forest land on 31 December 1989; remained as forest land on 31 December 2007; and ii. Contained predominantly exotic forest species on 31 December 2007. Land that was indigenous forest land on 31 December 1989, and remained so on 31 December 2007, is not pre-1990 forest land and is not subject to ETS obligations. This is not a complete definition
Production forest	A forest where the primary product will be timber. Used synonymously with Commercial forest
Reconfigure carbon accounting areas	Subdivide or merge carbon accounting area(s).
Re-establish	An area of land that was once forest land is restored in forest.
Register	In this context; enter an area of eligible forest land into the ETS.
Retrospective application	An application that concerns an activity undertaken in the past.
Risk	A probability or threat of damage, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities
Rotation	The cycle of growth and felling or cutting of trees.
Rotational forest	Forest which is managed using successive rotations to provide timber.
Saw tooth accounting	When a rotational forest accounts using the stock change approach the sequential period of sequestration followed by a sharp decline in carbon stock (after harvest) results in a pattern that resembles a saw teeth.
Sequester/ Sequestration	The uptake of carbon containing substances, in particular carbon dioxide (CO ₂), in terrestrial or marine reservoirs.

	Biological sequestration includes direct removal of CO2 from the atmosphere through afforestation.
Spot market/ spot price	The price of an NZU on the 'open' market which units can be purchased for at short notice.
Stock change approach	Where the participant accounts for the net carbon stock change in the forest
Surrender	The transfer of one or more units to the Crown surrender account in the Register to meet an emissions obligation.
Sustainable harvest	The harvesting of a certain quantity of that resource (timber) each year (or other time interval) over a specific period of time to maintain a sustainable supply.
Temporarily un-stocked forest land	In this context, this refers to forest land that has been cleared (e.g. harvest) but is expected to revert (e.g. be replanted or regenerate) to forest within the timelines of the CCRA.
Temporary adverse event	Adverse events which do not directly result in long-term or permanent deforestation
Transmission of interest	A participant either transfers land to a new participant, enters into a contract where the contract holder is the new participant, or a contract is terminated and the landowner or new contract holder is the participant.
Tree weed	A tree that is defined or designated as— (a) a pest in a pest management strategy under the Biosecurity Act 1993; or (b) a tree weed in regulations made under this Act.
Trustee	Member of a trust.
Units	This means a Kyoto unit, a New Zealand Unit (NZU) or an approved overseas unit. Currently the ETS only transacts NZUs.
Unit Balance	The current balance of units received for a Carbon Accounting Area since its first registration. The participant may or may not still hold these units.
Voluntary	This means that an option is available to be chosen but not obligatory. Post-1989 forest participation is voluntary.

Appendix three. Assumptions to support the cost benefit analysis.

Please note: this information is intended to provide the supporting information to the RIA. More detailed information on the cost/benefit analysis will be provided in the detailed report in January.

Approach to modelling.

- 1 We have used a discounted cash flow approach to evaluate the benefits for permanent forest. This approach means the land owner receives the full benefit from future cash flows (both positive and negative) when the decision is made to register as a permanent post-1989 forest. However, each hectare only received this benefit once (in the year it becomes permanent post-1989 forest).
- 2 This approach allows easy testing of the assumptions that underpin the model and undertaking of sensitivity analysis.

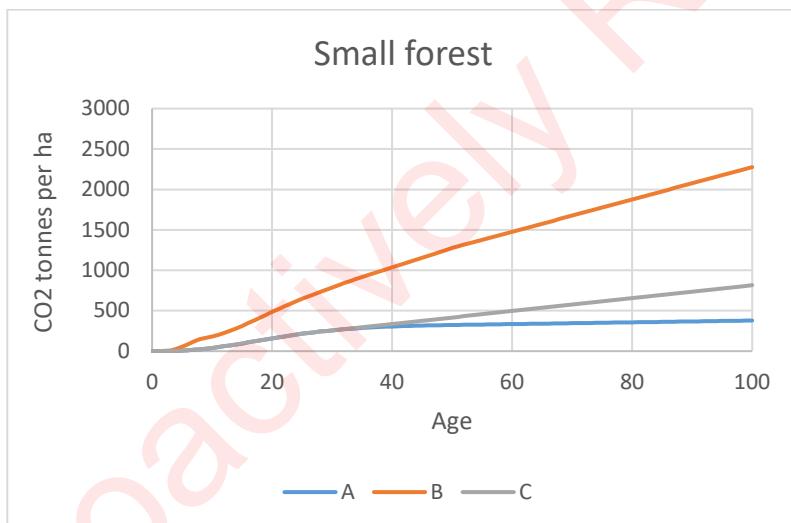
Annual uptake of permanent post-1989 forests

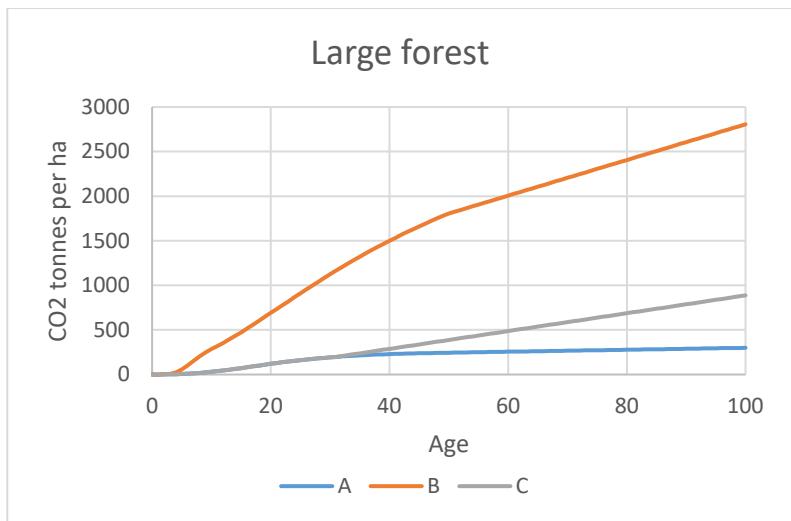
- 3 Scenario A estimates 1,530 ha per year goes into permanent forests (1,200 ha of small foresters), while scenario C estimates 1,860 ha (1,200 ha of small foresters). These uptake rates are very close to the average annual registration in the ETS of indigenous forests (33,000 ha after 9 years).
- 4 Estimating pine forest where the land owner will elect to forgo harvest (scenario B) is more speculative and we assume 200 ha per year (0.5% of the annual harvest area)

Scenario	Small forester per year	Large foresters per year
	Area (total)	Area (total)
A Retirement of low quality (e.g. erodible) land and allow native forest to naturally regenerate.	1,200	330
B Elect not to harvest established pine, forgoing harvest income	90	110
C Plant natives on bare land with Manuka honey income until planted tall natives emerge	1,200	660

Carbon sequestration

- 5 The carbon modelling in this report is based on the areas registered in the ETS in late September 2018. We have developed area weighted tables based on either:
 - a) the default yield tables (for forests less than 100hectares) or
 - b) 10 years of Field Measurement Data (for forests over 100ha).
- 6 However, published yield tables do not (currently) extend beyond 50 years. To estimate the yield tables beyond age 50 we make a simple assumption around future carbon stock changes:
 - a) for native forest 1.1 tonnes per hectare per year (60% of the stock change between ages 40 and 50) (scenario A)
 - b) for pine forests 20 tonnes per year (84 % of the stock change between ages 40 and 50) (scenario B)
- 7 For native forest (manuka) being replaced by tall native species (scenario C) we assume that these have a material increase in the carbon stock 10 years after planting (i.e. from year 30). Once tall native forest ‘comes through’ it is assumed to have a comparable rate of sequestration to what is observed across a range of native species. It is assumed that forest under 100 ha will sequester 8 tonnes per ha per year, while FMA forests sequester 10 tonnes per ha per year.





Carbon price

- 8 We assumed that the carbon price increase to a nominal value of \$75 in 2050. When discounted, at 8% below, this result in a price of \$41 in 2020\$.
- 9 We believe that this provides a useful lower estimate of the carbon price in the 2050 as there is increasing evidence that, for the world to deliver on the Paris objectives of stabilising temperature both the global and domestic carbon prices need to increase. For example the Productivity Commission provides contrasting scenarios where the real 2050 carbon prices are between \$75 and \$250.

Other assumptions

Assumption	Value	Narrative.
Discount rate for investment	8%	A series of surveys ⁵² report post-tax implied discount rates of between 7% and 9% and pre-tax IDRs of 7% and 9% are typically used by the timber industry.
ETS registration costs	\$650	Slightly above the current cost of registering forest (c\$570) to account for the variable hour charge. .
ETS Emissions return	\$122	
Forgone harvest income (if the site it suitable for harvest)	\$15,000 per ha	If the land owner in scenario B, is forgoing harvest they do not receive the net income to the land owner from not harvesting pine forest. This is

52 Published in the New Zealand Journal of Forestry, e.g. Manley, 2018, Discount rates used for forest valuation - results of 2017 survey, New Zealand Journal of Forestry, 63(2): 35–43
http://nzjf.org.nz/new_issues/NZJF63_2_2018/A3797169-9AF6-41d8-A5AF-2CB6C03D8B02.pdf

		based on the stumping of either low quality sites or those with high harvest costs.
Manuka honey revenue.	Years 3-15 \$345 per year. Years 16-22 \$120 per year per ha	In years 3 to 15 honey income is estimated to return 25% of honey value to land owner, 23 kg per hive (hectare) and \$60 per kg of honey. In years 16 - 22 honey return is assumed to be 8 kg per ha
Costs of Scenario C	\$3010 upfront cost of establishment \$1000 in year 23 to establish tall species. per ha	The upfront cost is that to establish the Manuka plantation. The \$1000 per ha is to establish the tall species.
Costs of Scenario A	\$0 per ha	It is assumed that the land being registered as a scenario A forest is put into forest for other reasons (e.g. stock exclusion) and naturally reverts.