



ORME
& ASSOCIATES

Your land. Your Choice

ETS and Farming

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A brief overview of the presentation to support attendance at the workshops.

Happy to help with any questions and will be back in the area on a regular basis to support anyone needing help

Benefits of plantings trees on farms

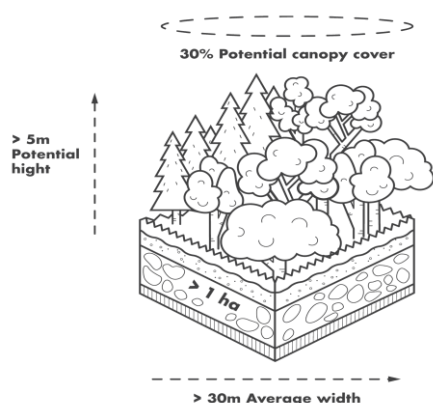


- Provide windbreaks, and shade for livestock, help them grow faster
- Stock food during droughts or shortages of feed
- Help soil retention on steep slopes, stop it moving
- Improve the productivity of your land, especially areas that don't grow good pasture
- Provide landscape diversity and wildlife habitat, biodiversity
- Absorbing carbon, make the world a better place and provide GHG options
- Help diversify your income, timber and honey
- Potential to reduce future emissions costs

By planting forest on your land, you may be able to claim carbon credits under the Emissions Trading Scheme (ETS)



'Forest land' definition



- Tree species (>5m height potential)
- > 1 hectare
- < 15m between potential canopy edge (mapping standard)
- > 30m potential average width
- > 30% potential canopy cover
- > 1 ha gaps removed

NB. Trees grown primarily for fruit or nuts don't qualify.



ALL trees on farms that meet the Forest Land definition, can qualify as forest land and be eligible if planted Post 89 for ETS registration.

Understanding the definition of Forest Land is the key to knowing if you can benefit from what you are likely to do anyway, if it is the best use for the land.

Once you understand that then you need to know that some basics:

Carbon is allocated in three ways. (Enduring Carbon is only relevant for the **FIRST ROTATION**

- Up until the recent review we are currently using the **Saw tooth/stock take/carbon accounting for registration**— One of the key points relating to this

approach is that only 10 yrs. enduring carbon (is available, if it was claimed and received)

Enduring carbon is the carbon that is defined as never immediately leaving the site after harvest, and gradually decompose over 10 years (according to the tables)

- The ETS review will bring in “Averaging “ to bring NZ into line with the International community and the Paris Accord for measurement.

Averaging works on the principle that over multiple rotations there is an “average” amount of carbon always on site and this has been discussed at 60 % of carbon present at harvest –carbon would be allocated for approximately the first 16 yrs of the rotation and then stops, that theoretically can be sold and never have to be repaid as long as the land stays in trees – referred to as ‘low risk’ carbon/units. And if that is the best land use then that is highly likely.

Averaging will be the only mechanism available from 2023 onwards.

Trees registered into the ETS before 2023 will have the choice as to how their trees are registered either Sawtooth or Averaging, and will have until 2023 to make up their minds going forward.

So depending on your circumstances the choice is yours.

There is also going to be a new category called **Permanent Forest Category** to replace the PFSI. This provides 100% allocation of carbon using carbon accounting for the life of the forest. There are rules around this and it is initially locked in for 50 years. There will be serious consequences if you fell Permanent Forest, not only will you have to repay ALL carbon units received, there will also be a product penalty worth more than any predicted harvest revenue likely to be received.

ONCE AGAIN- Safer or enduring carbon (‘low risk’) is only allocated in the **first** rotation, if you never received the first 10 years under the current sawtooth you can't keep it.

But it is a useful trading tool to balance your carbon portfolio, especially if you have later plantings other income streams.

Voluntary participation (Post-1989 forest land)

5-yearly commitment (reporting) periods (CP) i.e. 2008-2012, 2013-2017, 2018-2022, with a mini-CP 2023-2025 so we can align with Paris Agreement

Participant responsible for filing emissions returns

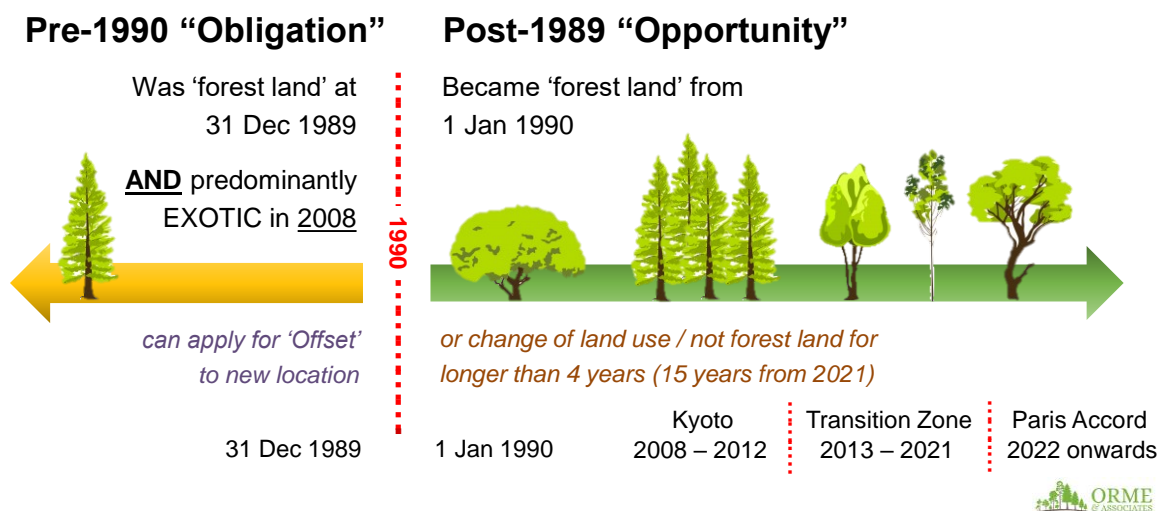
Gain carbon units based on increase of carbon in a calendar year

MPI carbon look-up tables for different species: Pinus radiata (regional), Hardwood, Softwood, Indigenous, Douglas fir

100 hectares or more registered must measure actual carbon present (FMA)

100 Ha or more is registered by one entity (even across multiple titles) then Field Measurement Approach to develop a site specific yield table is required.

Baseline date - Kyoto



Options for increased sequestration

- Retiring and planting less productive areas (where applicable)
- Planting shelter belts
- Planting of riparian areas and retiring critical source areas
- Collaborate with neighbours and council for planting areas such as eco corridors
- Space planting for erosion control with co-benefits of shade and sequestration

30% potential canopy cover

Qualifies



Doesn't qualify



Poles - ETS approved



The owners have planted 790 poles in a connected series of gullies on their property.

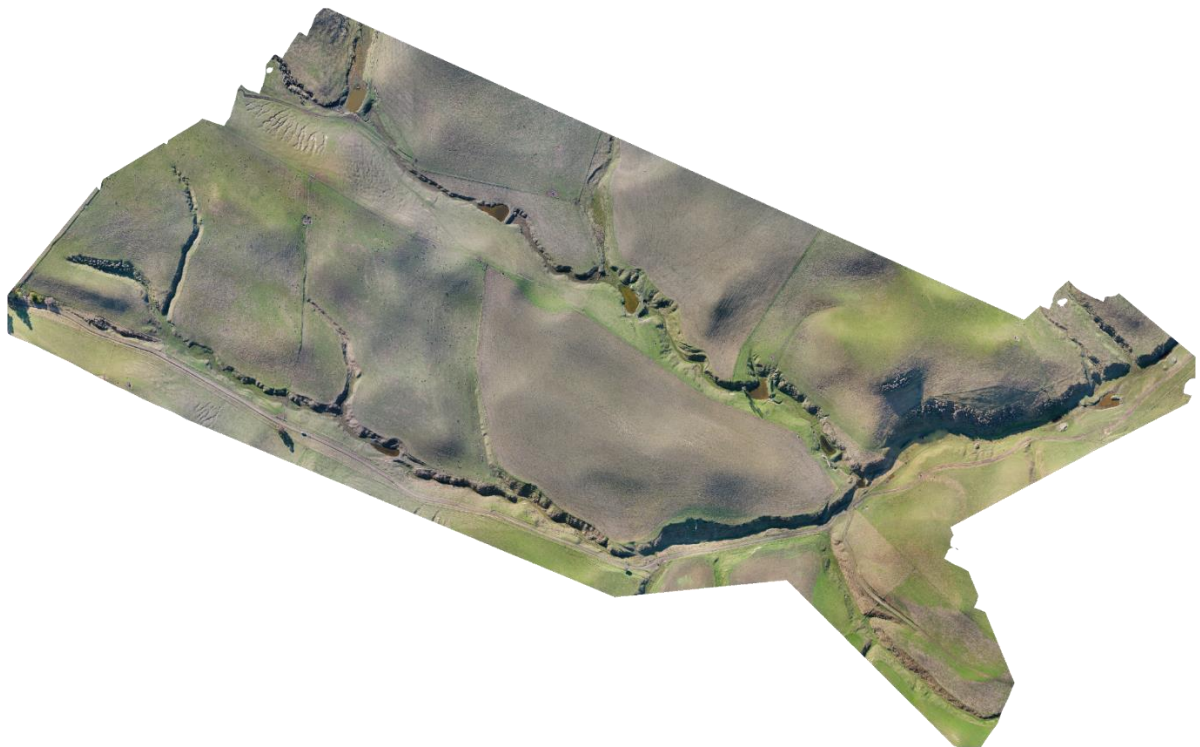


Of the 790 poles planted, 770 could be clearly identified through the imagery and are represented as a circle on the map, in a separate layer if required.

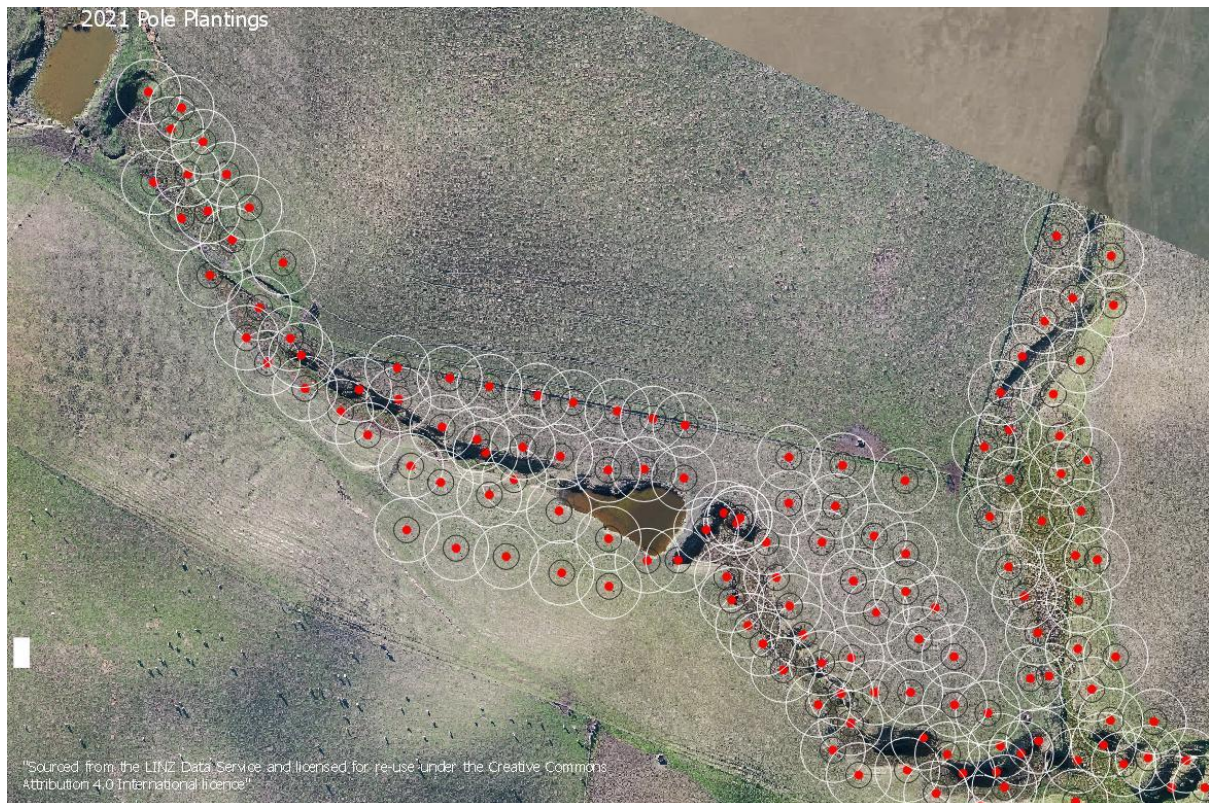


These were inspected and flown with the drone to produce a map as part of the evidence for the ETS application process. As you can see the area is currently in pasture and therefore does not

currently meet the Forestland definition.



From this map and these images, each pole location was established using a dot and 10m radius circle to judge overlap and distance apart parameters.

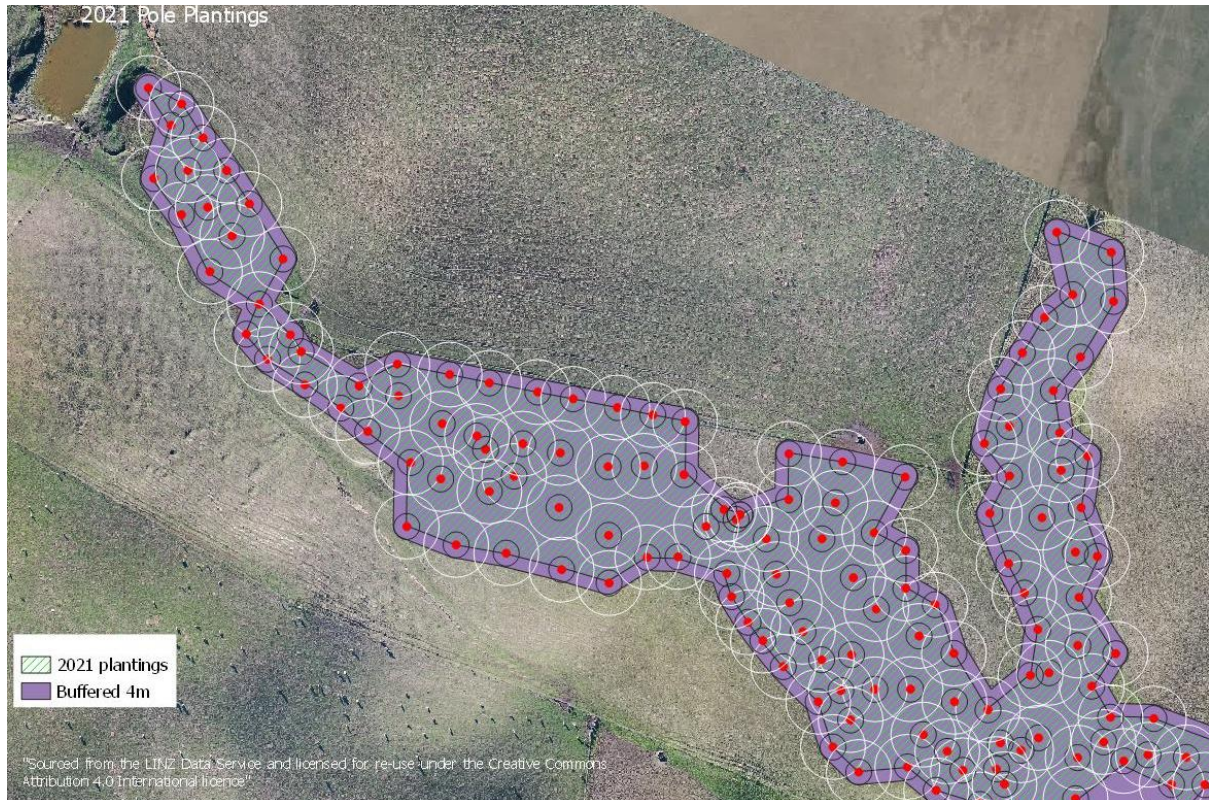


From this the perimeter of the poles was mapped and produced an area of approximately **7.4 ha**

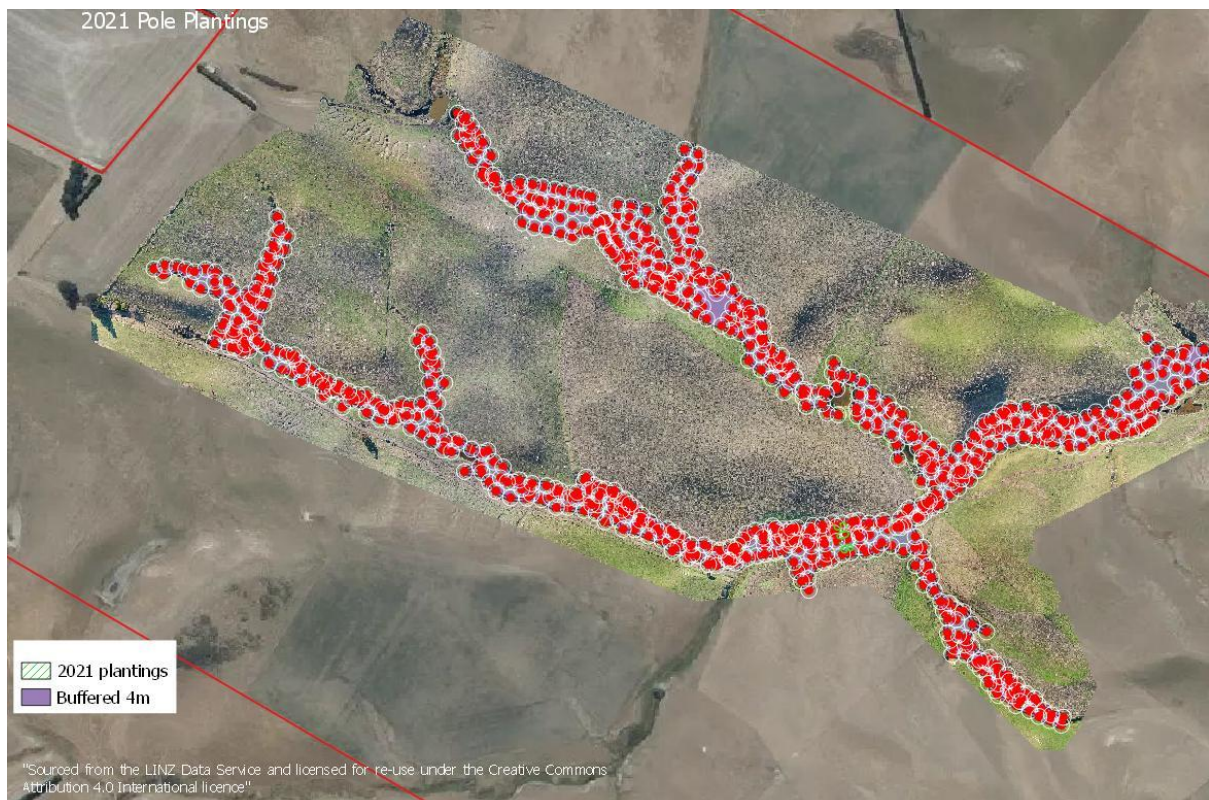


The area then had a 4m buffer radius applied as per the mapping standard to determine the

external perimeter. Which resulted in **10.3 hectares** being applied for and approved.



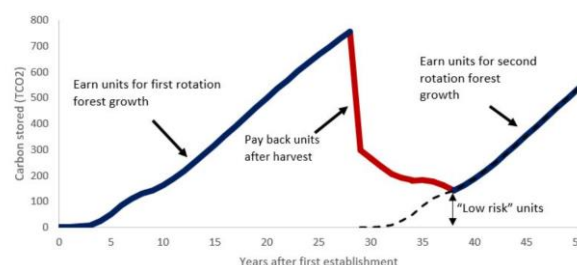
This was checked for issues around the possible 15m maximum distance between driplines at maturity and the CAA shape/area confirmed.



Carbon Accounting Methods – Stock Change

- Earn units as forest grows over multiple rotations. Will need to surrender units if harvesting occurs.
- Used for the Permanent Category.
- Low risk units – the amount (if any) depends on age of forest when registered, and how long you take to replant your second rotation.
- **Pros: Keep earning units as forest grows. Could delay harvesting or not harvest if carbon price strong.**
- **Cons: Must give back units if harvesting. Can be 8-10 years before you start earning units on 2nd rotation.**

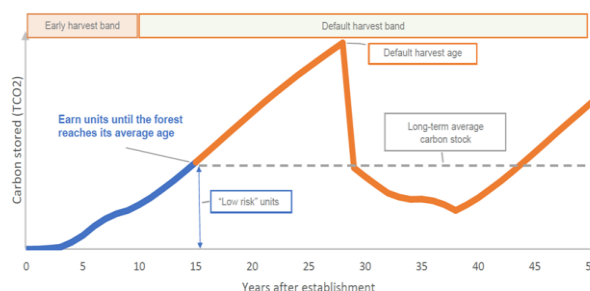
Carbon stored by a forest over time – stock change



Forests registered from 2008-2018 are under Stock Change. Forests registered between 2019-2022 will have the option to remain on Stock Change or move to Averaging (or the Permanent Category which uses Stock Change) in early 2023.

Carbon Accounting Methods - Averaging

- Earn units up to average age, for first rotation only. Don't need to surrender units after harvest providing you replant.
- Low risk units – all units earned.
- **Pros: Get to keep all units earned.**
- **Cons: Don't earn more units once forest has reached average age, and don't earn units on 2nd rotation.**



From 1/1/2023 ALL stands first registered, will be under Averaging unless they enter the Permanent Category.

- Radiata pine: age 16
- Douglas fir: age 26
- Exotic softwoods: age 22
- Exotic hardwoods: age 12
- Indigenous: age 23

Permanent Category

- For forests that will not be clear-felled for at least 50 years, but selective and small coupe harvesting allowed. Options after 50 years expire to extend; transition to averaging or remove forest (would involve a unit surrender).
- Uses the Stock Change Accounting Method, so will keep earning units as long as the forest is standing and carbon stock increasing.
- NZ Units (NZUs) earned will be tagged as coming from a permanent forest.
- Currently any species can enter, but 'talk' of changing rules to exclude pine.
- **Pros: Keep earning units as forest grows. NZUs may command a premium.**
- **Cons: Locked into a 50-year non-clear fell period.**



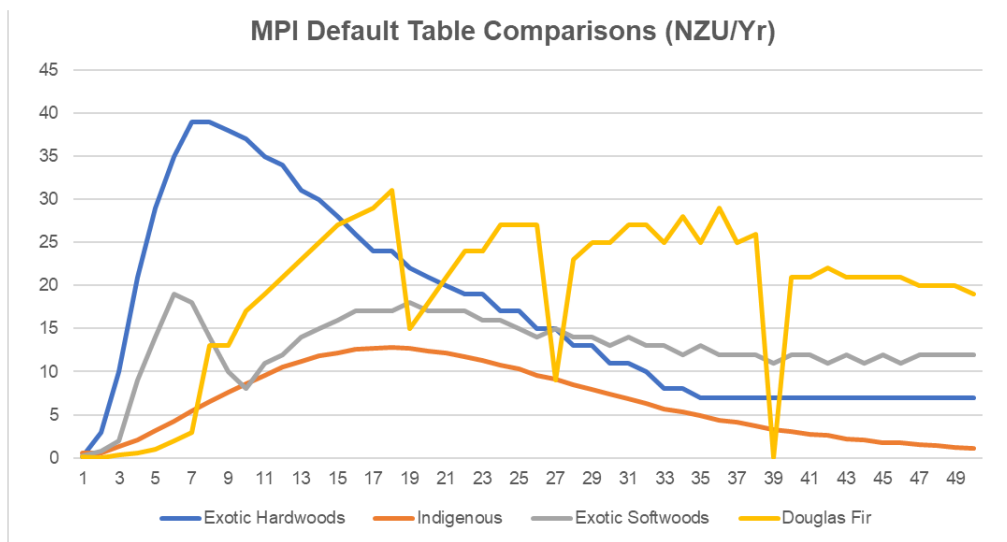
ETS Post-1989 Obligations, Risks, Trade offs

- Once units are sold, land use likely locked in as the cost to remove areas or exit may be prohibitive i.e. if high carbon price.
- If harvesting/clearing occurs must replant, otherwise need to remove area and surrender units allocated.
- Under Kyoto rules (stock change), allocated units as forest grows, however, units must be surrendered at harvest.
- Permanent Forest - 50 years + 25 +25 (if changed carbon plus 70% of harvest value returned).
- Administration costs/time to enter the ETS and while in the ETS.
- **6 months+ delay in processing by MPI at present.**

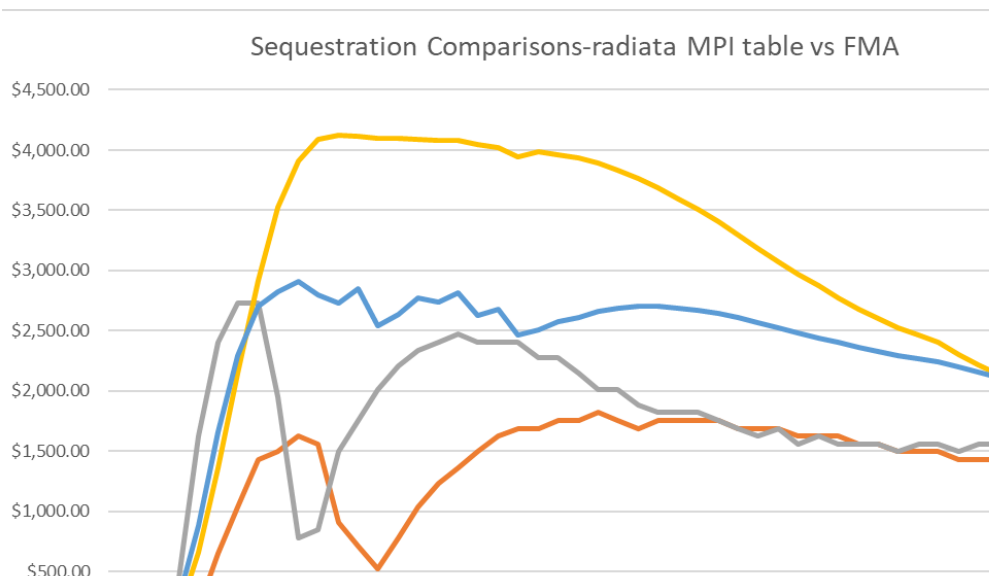


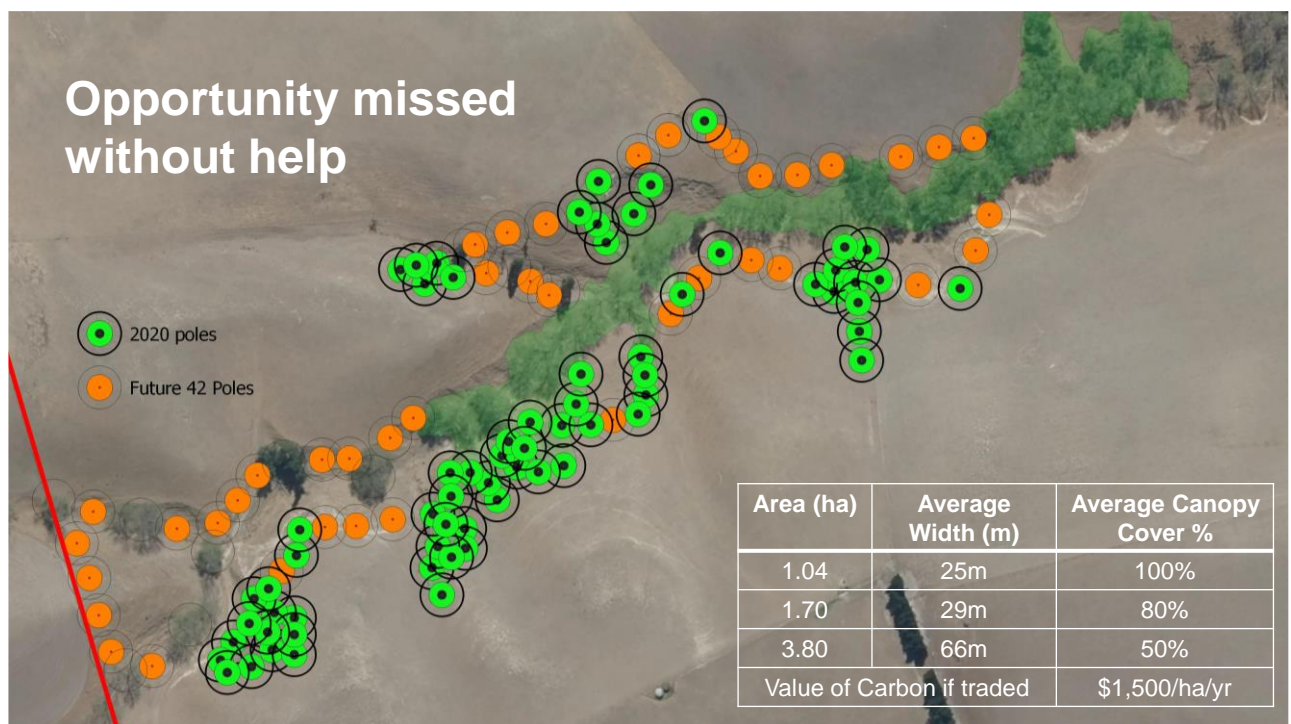
ETS Post-1989 Opportunities

- Carbon credits can be sold for income at any time.
- Potential income from carbon often MORE than from harvest and, without associated damage and environmental implications.
- If registered before 31/12/2022 can claim carbon credits back to 2018.
- Under Paris, Averaging allocates more 'low risk' carbon under production conditions (first rotation only) – get a carbon crop and a timber crop (but need to replant).
- Permanent Forest = 50 years + 25 +25 (Radiata in Hanmer Forest 116 years old producing 20 NZU/ha/yr).
- Exemption for adverse events i.e. fire/windthrow/disease.



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Initial plantings met the 1.0 ha minimum and % canopy cover but not average width

2020 plantings same

Proposed 2021 plantings met all criteria if planted subject to MPI approval

ETS Eligibility Tips

Narrow varieties = less canopy

New poles – maximum 4m buffer; may be able to plant up to 20m apart, but 10m on perimeter poles to allow if one dies (as per handout).

Younger poles need higher stems per hectare (SPH)

Mature trees eligible based on drip line (maximum 15m to edge)

Survival...location and spacing crucial (monitor and replant)

Assess **>30% canopy cover** potential well met

Irregular shapes...**link** / **increase** existing poles

Use to **buffer** narrow / riparian areas

Determine age – establishment records (evidence)

100 ha or more (FMA) measure actual carbon present (less)



How to Register

So how do we start?

- Do I have any pre-1990 land?
- Do I have any DEFORESTATION ISSUES?
- Do I have land that would qualify for a post-1989 ETS registration now? (Existing plantings or Reversion)
- Can I create some?? (plant something new or link up small stands)

Legal boundary is the key



Am I the legal Owner of the land?

Give and take traditional boundaries don't count.

If Existing trees - do they meet the FOREST LAND DEFINITION?

Is there a road through the middle of my block

If new planting, is the land eligible?

Step 1: Research

- Am I the legal owner of the land? Is my name on the title?
- Existing trees, do they meet the FOREST LAND definition?
- When did it start reverting & why? Can I prove it?
- If new planting, is the species and land eligible?



Step 2: Evidence / Resources

- Retrolens – historical imagery resource:
<http://retrolens.nz/>
- LINZ data service – search for data and maps:
<https://data.linz.govt.nz/>
- MPI – guide to imagery resources:
<https://www.mpi.govt.nz/dmsdocument/27999-Aerial-imagery-resources-to-host>
- Google Earth and use the image history back to 2008 and beyond
<https://earth.google.com>

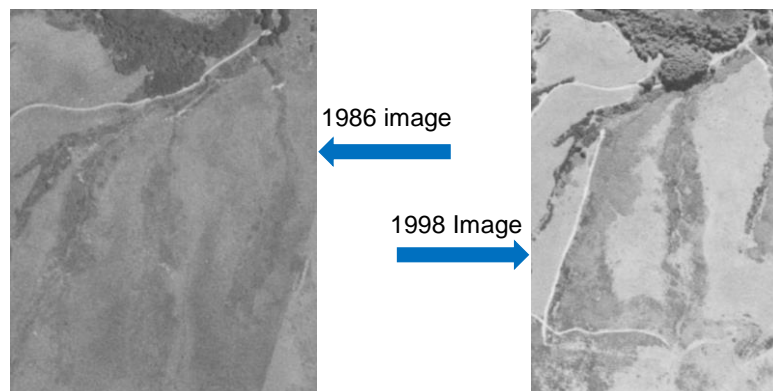


How old are they? Can I register?



Managed to find some old photos either side which in my mind confirm that the area did not meet the FOREST LAND definition in 1990? But MPI have the final say, and they have access to and use different imagery, as well as what we can get for free.

Step 3: Old imagery – do I qualify?



Not only does your entity have to appear on title, you can only measure what is inside YOUR title boundary.

Tradition give and take boundaries have no legal standing in the ETS however if a good neighbour you good enter into a Forestry Right over the trees if discovered in the wrong place?? However the obligation regarding the land could become your responsibility.

Its not to the fence line its to the drip line of the tree,

If there is less than 15m between drip lines then you can join up and link extra areas, see the riparian example later on.

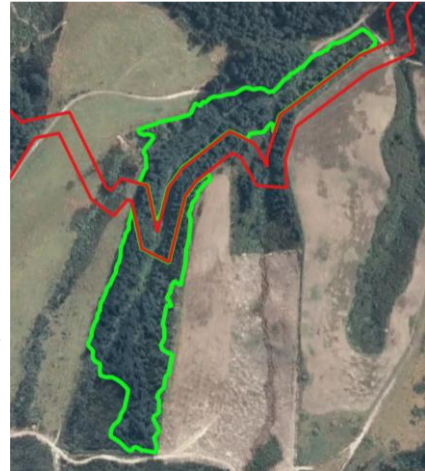
This particular stand is mixed D fir Radiata and Larch with a couple of poplars and willows, they are trees so can have a mixed species and mixed age stand.

Step 4: Mapping to title boundaries



3.73 ha
(without considering
road)

2.62 ha
to title boundary
(with road through)



Step 5: Registration

To enter land into the ETS you first need an NZ Emissions Trading Register (NZETR) account. The Register acts like a bank, but holds units (NZUs) instead of money.

Relevant agency websites:

<https://www.emissionsregister.govt.nz/>

<https://climatechange.mpi.govt.nz/>

<https://www.epa.govt.nz/industry-areas/emissions-trading-scheme/participating-in-the-ets/>



Natural Regeneration (regen)

If the forest is naturally regenerating, the year forest regeneration **first becomes obvious (following a change in management practice)** can usually be taken as the year in which the area is considered forest land.

If regeneration is patchy or slow, it may be some time after the land management practice has changed before the area can be considered forest land.



Farmland reverted after 1989

- The area had been pastorally farmed with enough livestock to stop regeneration of woody species.
- In early 1994, it was decided to remove livestock from this remote part of the farm and let the area regenerate naturally.
- Mānuka and Kanuka took over the area rapidly from the seed sources in the gullies.
- Extensive seedling regeneration visible over the whole area by November 1994.
- Aerial photos held by the regional council show a good scattered cover in 1996. More recently, some tree ferns and patches of broadleaved tree species have appeared.



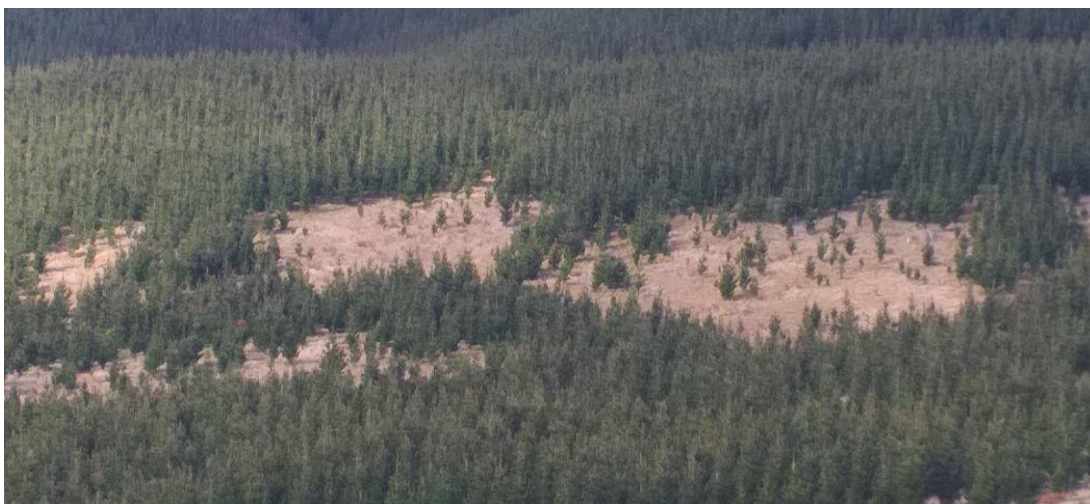
The area is post-1989 forest land, established in 1994.

Source: <https://www.teururakau.govt.nz/dmsdocument/6991-An-Overview-of-Forestry-in-the-ETS>



FARMLAND REVERTED TO INDIGENOUS FOREST AFTER 1989 The area had been pastorally farmed since the 1960s, with enough livestock to stop regeneration of woody species except in a few small, steep gullies. However, in early 1994, it was decided to remove livestock from this remote part of the farm, stop fertilizer application and let the area regenerate naturally. Manuka and Kanuka took over the area rapidly from the seed sources in the gullies, with extensive seedling regeneration visible over the whole area by November, 1994. Aerial photos held by the regional council show a good scattered cover in 1996. More recently, some tree ferns and patches of broadleaved tree species have appeared.

Example



MPI regional tables (under 100ha registered)

- Under 100ha (MPI tables) **gaps count as trees = carbon, as long as the “Forest Land” definition is met**
- Harsh Climates = the average climate = MPI tables
- A tree 5.2m high = the same carbon as one 10.2m high
- Streams that run through an area (<15m canopy gap) count as carbon
- Totara spaced as canopy trees, with shrub species, under story more cost effective to establish



100 hectares or more (FMA)

- Gaps count as empty space = NO carbon
- Harsh Climates = a Harsh Climate = Less carbon
- A tree 5.2m high, has less carbon than one 10.2m high
- Streams that run through an area (<15m canopy gap) count as streams
- Totara spaced as canopy trees, with shrub species, **under story** more cost effective to establish, but produce less measurable carbon

