

Carbon Offsets & Native Forest Projects

TO WHAT EXTENT MIGHT NATIVE FOREST RECOVERY PROJECTS BE ASSISTED BY SALE OF CARBON OFFSETS?



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About the PFSI

Legislated in 2007 prior to the NZ ETS

Purpose to encourage SLM on marginal lands through permanent afforestation with Kyoto compliant forests, incentivising landowners by awarding them all sequestered carbon

Currently 69 projects, (58 Indigenous, 11 exotic). Average project size 200 ha

PFSI project area 15,900 ha, (73% indigenous, 7% yet to be stocked, 9% D-fir, 6% radiata, 5% Eucalypts, 1% other)

5 projects on Banks Peninsula, 3 indigenous and 2 exotic

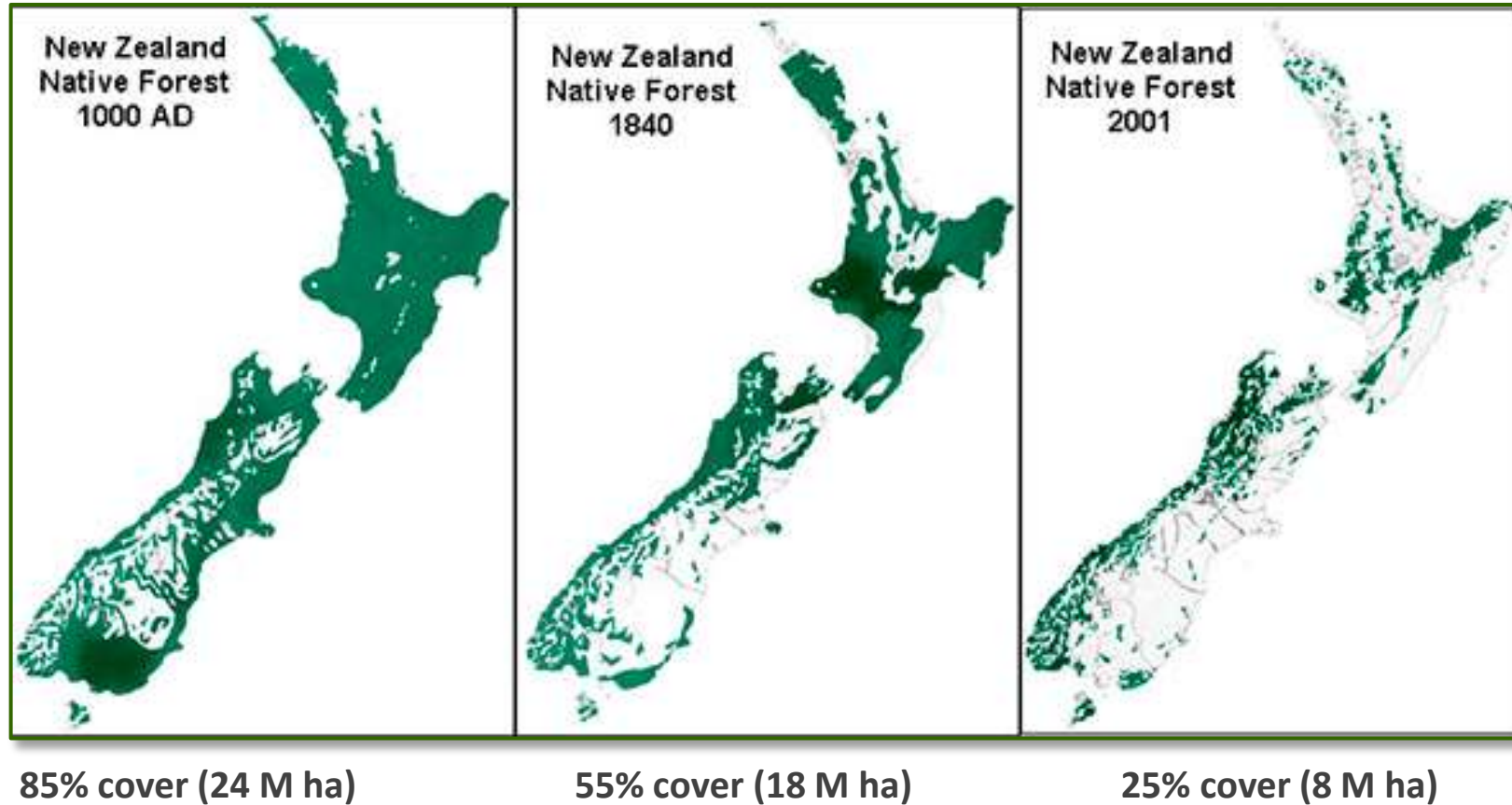
PFSI has been dwarfed and disadvantaged by ETS forestry (250,000 ha registered at its peak, currently 160,000 ha)

Government has affirmed it wants to make PFSI more effective and has initiated a Review and Consultation process for this purpose.

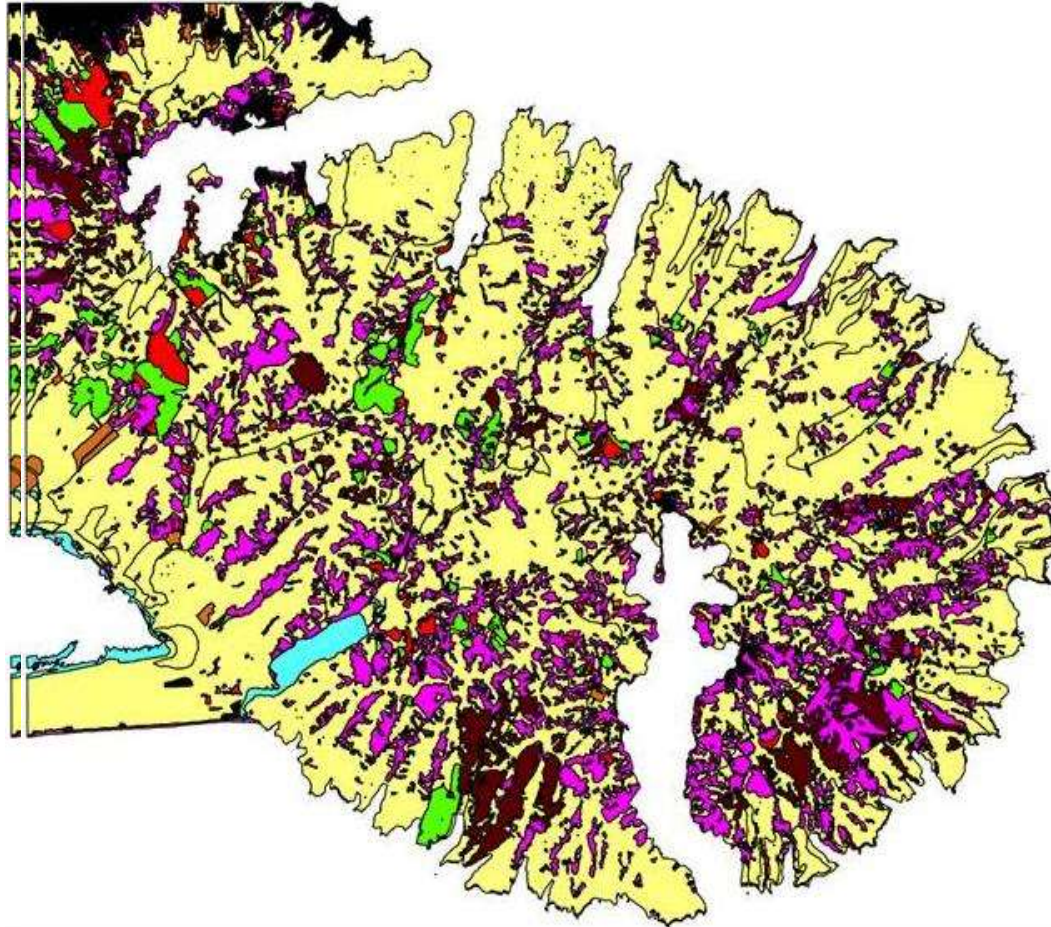
Ultimately the attractiveness of PFSI landuse hinges on higher pricing of PFSI carbon relative to other NZ ETS units

OUR DEFORESTATION HISTORY

24Mha - 8Mha



Banks Peninsula land cover (MFE 2012)



Source: MFE: LUCAS NZ LUM v 3

Banks Peninsula Land & Vegetation Cover

Banks Peninsula Land & Vegetation Cover (MFE, 2012)		
Land & Vegetation Cover Types	Area (ha)	%_Area
Natural Forest	4,599	4.5
Planted Forest - Pre-1990	2,160	2.1
Post 1989 Forest (exotic & Indig)	3,131	3.0
Grassland - With woody biomass	18,019	17.5
Grassland - High producing	19,527	19.0
Grassland - Low producing	51,678	50.2
Cropland -	591	0.6
Wetland & Lakes	1,014	1.0
Settlements & other	2,268	1.9
Total	102,985	100%

Rainfall/moisture = Forest Growth Rates



Source: NIWA

Native forest recovery: The three options

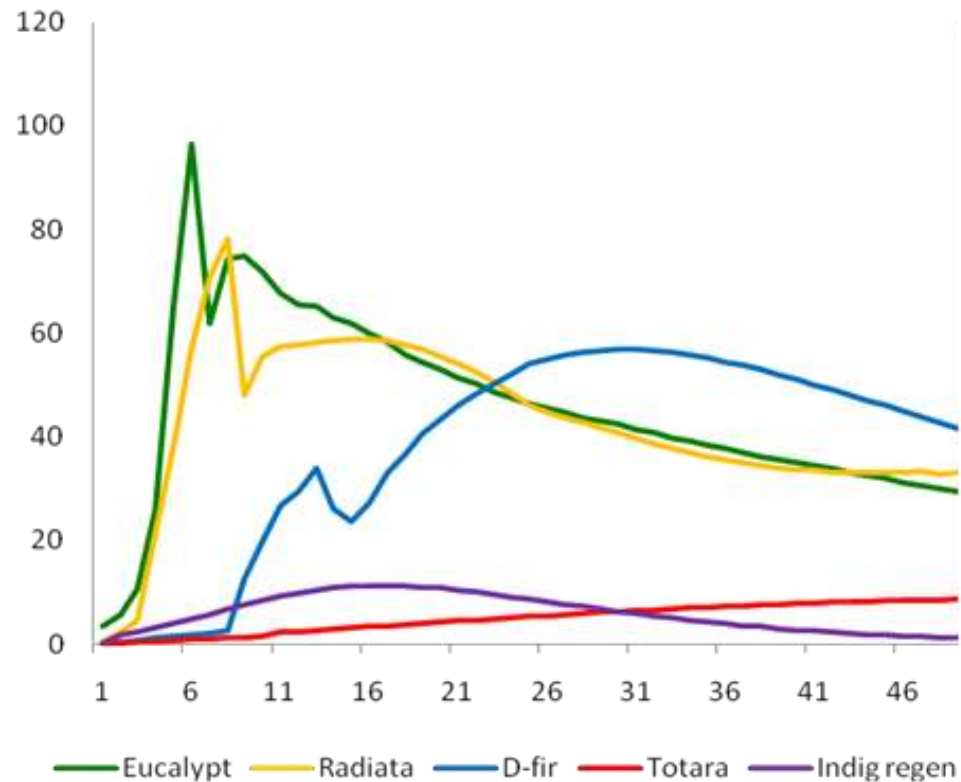
Unmanaged 'natural'
succession

Planting & seeding

Managed nurse crops

Establishment risks	Sequestration rates	Direct costs
V High	V low	V low
Moderate	Low	V V High
Low	V High	High

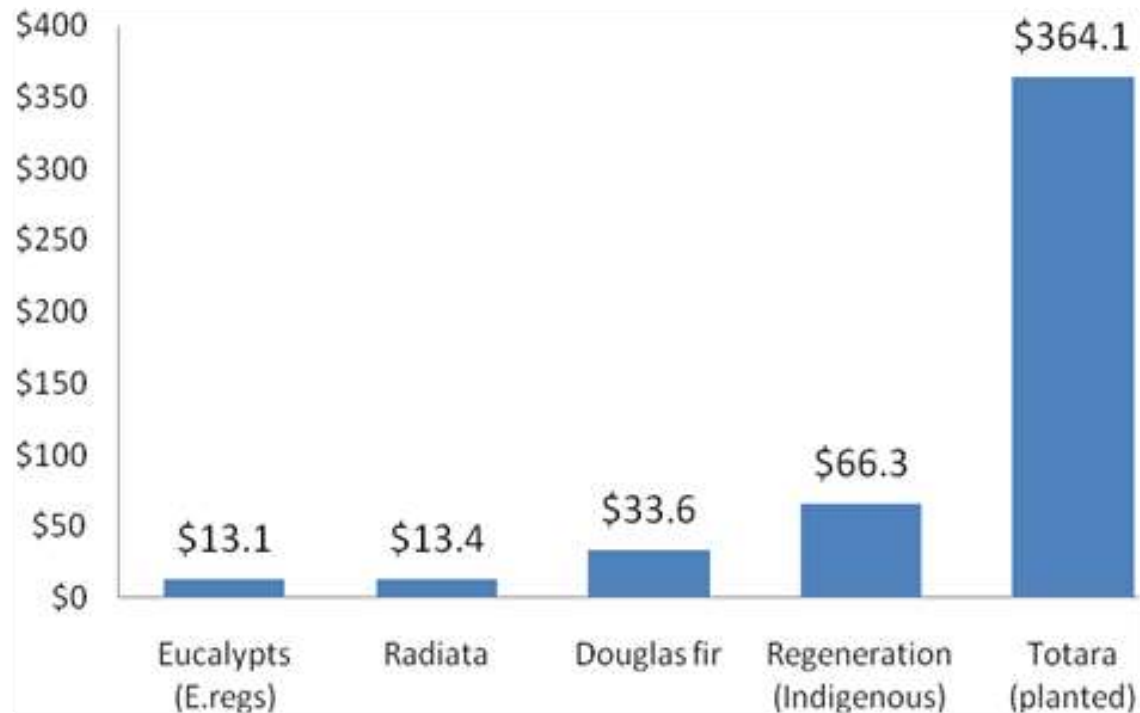
Sequestration rates (tCO₂/ha/yr) species comparison



Graph Sources: MPI LookUp Tables; Except Eucalypts and Totara 'Scion: Indicative Forest Sequestration Tables' (Beets et al 2008)

- Growth rates representative of medium fertility moist ex-farm sites
- High variability between species
- Exotics are fast, natives slow
- MPI indigenous table over-projects for most sites
- Early rapid sequestration is best for climate...CO₂ removals are needed near term
- Early sequestration maximises IRR's and reduces cost of delivering carbon units
- Early sequestration can deliver carbon income soon after main costs are incurred

Cost of carbon (NPV \$/tCO₂) species comparison, ex farm sites (land cost \$3500/ha)



The cost of carbon is derived by dividing the NPV costs by NPV saleable carbon to give NPV cost of production per tonne of CO₂ at a specified discount rate (eg 10% DR).

- IRR's @ \$20/t carbon price, and \$3500/ha are approx. 11 % for Eucs & radiata,
- With high carbon pricing NZ will see an explosion in radiata forestry
- How can indigenous recovery compete?...by higher priced carbon? Or hitching native recovery to fast growing nurse species?

Annualised net (EBITA) earnings/ha Forest options cp to dry-stock farming

	tCO2/ha/an	t CO2/ha	\$/ha/an	\$/ha/an
	30 yr MAI	30 Yr Total	@ \$5/unit	@ \$20/unit
Eucalypts Nurse	40	1200	200	800
Indigenous Lookup table	9	270	45	180
Totara planted	3.3	100	16.5	66
Dry livestock farming	\$200-\$400/annum EBITA			

How to optimise forest carbon earnings

PRODUCTIVITY & COSTS

Target high productivity sites and species/regimes which have highest early sequestration rates and low establishment cost (eg Kanuka pioneer species, or Eucalypt nurse crop)

Keep project size below 100 ha to benefit from the generous MPI Indigenous Lookup Tables and to avoid cost of Field Measurement

Economies of scale...larger projects more cost efficient

Amalgamation of small projects through a registered Forestry Right entity...option for the future

If larger than 100 ha, locate on higher productivity sheltered moist sites

Seek rates relief on basis PFSI is a conservation covenanted landuse

CARBON PRICING

Lobby for distinctly higher pricing mechanism for PFSI carbon in the NZETS than other carbon types

Secure longterm relationships with emitter buyers who will pay a premium for PFSI carbon

Eucalypts nurse crops for indigenous recovery and carbon



Conclusion: With high sequestration rates and high carbon pricing substantial income is possible, & eucalypt nurse crops are best.

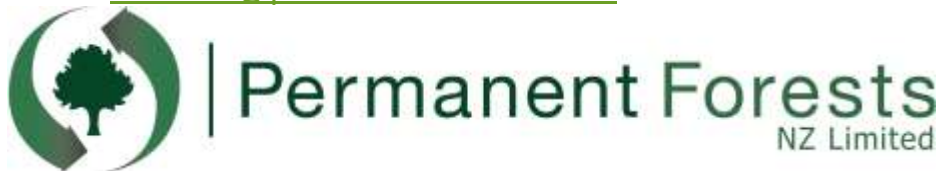
THANK YOU!

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