

# ***Overview on the NES-PF***

***(National Environmental Standards for  
Production Forestry)***

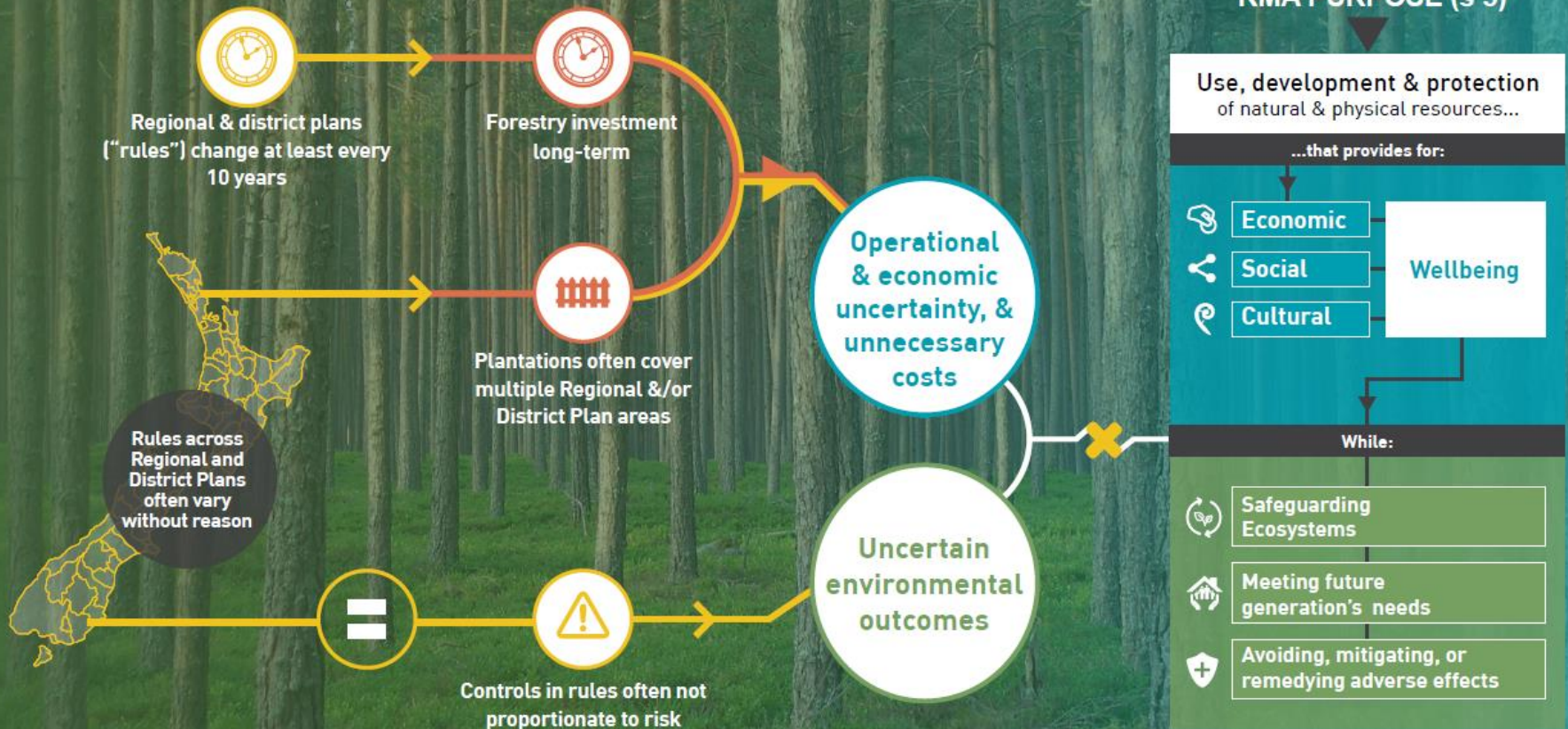
## ***Acknowledgements:***

- *Most of the slides on the NES-PF come from MPI from their consultation road show on the NES-PF during early 2018. They are still relevant today.*



# How did the NES-PF come About?

## CASE FOR CHANGE





# OBJECTIVES OF THE NES-PF

**ARE TO**

Maintain or improve environmental outcomes associated with plantation forestry activities

**AND**

Increase the efficiency

Improve certainty

...in how plantation forests are managed

All objectives achieved by:



Removing unwarranted variation in regional and district plan rules



Providing fit-for-purpose forestry regulations to manage effects



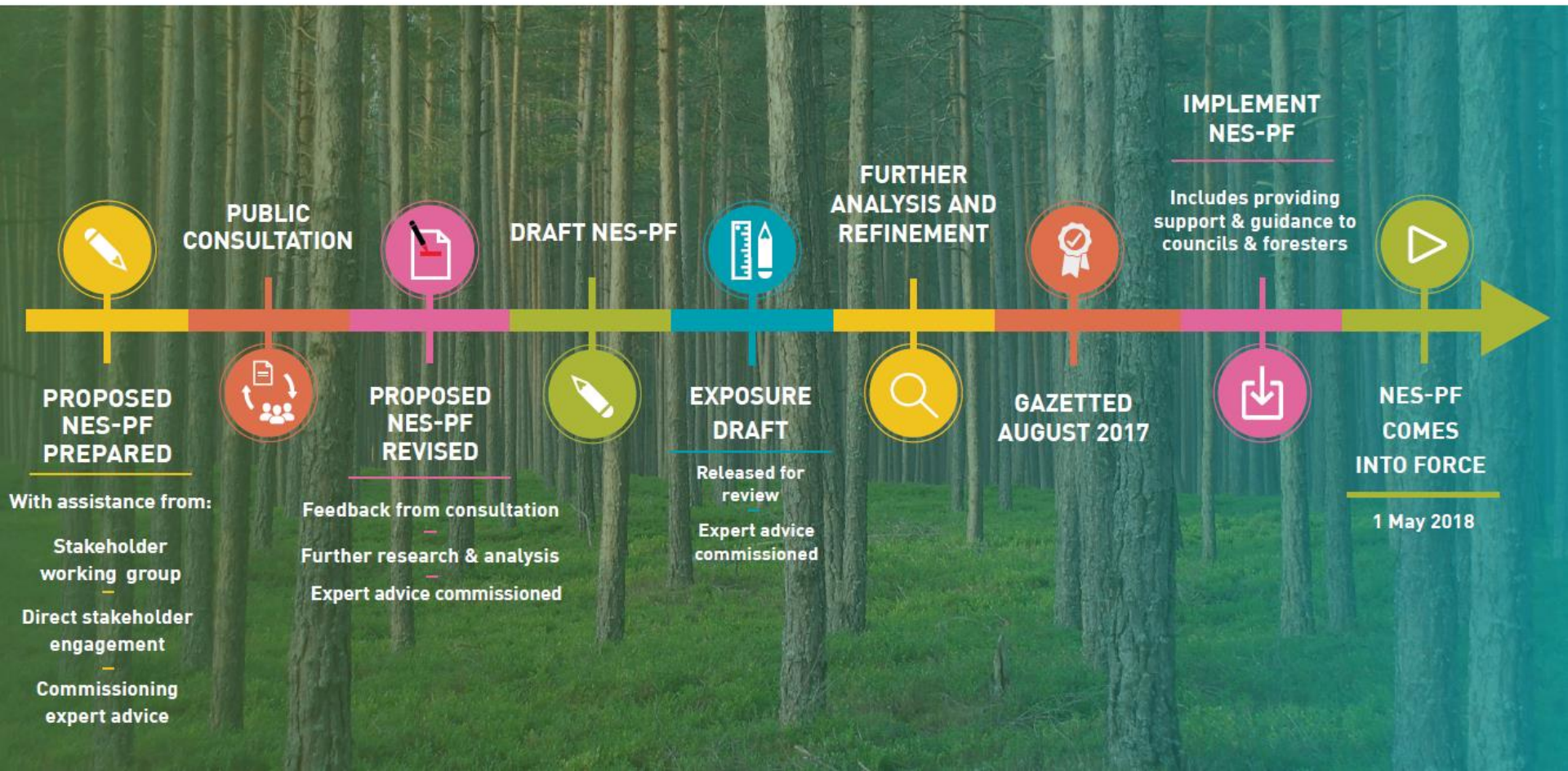
Permitting activities if efficient + no significant adverse effects



Allowing more stringent plan rules in certain circumstances to protect locally significant and sensitive environments



# FORESTRY REGULATION REFORM: The process to date & next steps





# NES-PF OVERVIEW

SINGLE NATIONAL SET OF REGULATIONS TAILORED TO FORESTRY



REPLACES EXISTING REGIONAL & DISTRICT PLAN FORESTRY RULES

NES-PF REGULATIONS APPLY TO FORESTRY THAT IS:



Planted for commercial purposes



At least 1 hectare plus



To be harvested

IT ALSO APPLIES TO ALL ASSOCIATED FORESTRY INFRASTRUCTURE

REGULATES EIGHT ACTIVITIES



THAT REPRESENT THE PLANTATION FORESTRY LIFECYCLE



# NES-PF OVERVIEW: Continued

## NES-PF RULES ARE BASED ON

Regional & district plans



Good forestry management practices



## NES-PF TAKES A RISK-BASED APPROACH WHERE

Risk assessment tools used to identify risk levels



Foresters identify & manage high-risk activities



Councils monitor compliance



FORESTRY ACTIVITIES CLASSIFIED AS EITHER

PERMITTED

**Majority**  
of activities nationally

WITH CONDITIONS

CONTROLLED



RESTRICTED  
DISCRETIONARY



DISCRETIONARY



# NES-PF OVERVIEW: Regulations based on 4 principles

1

Where an activity's **EFFECTS** are not significant = **ACTIVITY** is **PERMITTED**

3

Thresholds at which consents are required are risk-based and informed by up-to-date science

2

When the detected <b>risk</b> of adverse effects increases	Restrictions (i.e. <b>consent</b> and condition requirements) get <b>stricter</b>
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4

Aim is to provide

**NATIONALLY CONSISTENT APPROACH**

**WHILE**

**ADEQUATELY PROTECTING**

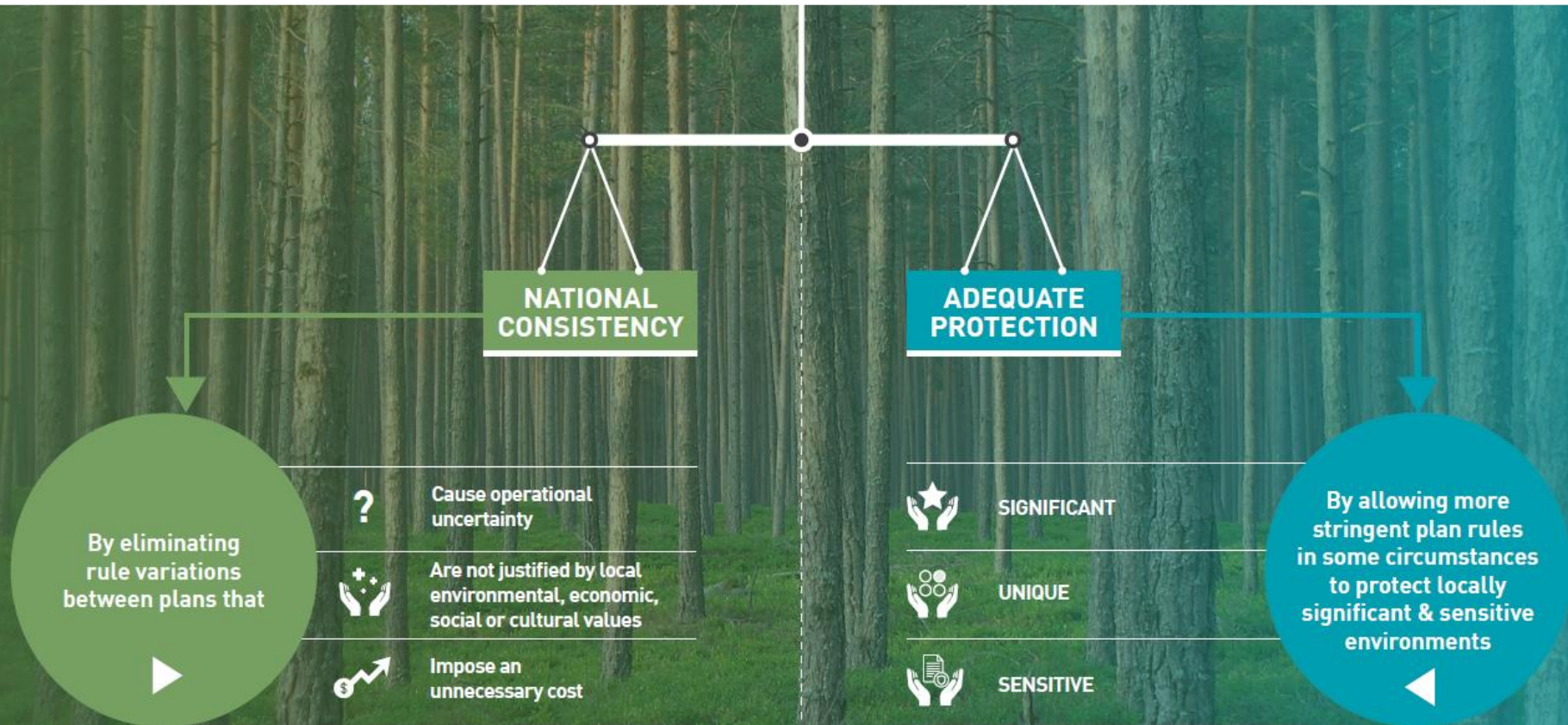
National & local environ needs



# Balancing National Consistency with Local Protection



**WHEN PLAN RULES MAY BE MORE STRINGENT:** Balancing consistency & protection





## NES-PF PROVIDES CONSISTENT REGULATION



**SINGLE NATIONAL STANDARD**  
that operates from the starting point  
of **NO** regional/district **VARIANCE**



**MORE STRINGENT PLAN RULES**  
**MAY ONLY PREVAIL OVER THE NES-**  
**PF IN SPECIFIC CIRCUMSTANCES**

**NATIONAL**  
**CONSISTENCY**

**ADEQUATE**  
**PROTECTION**



## NES-PF PROVIDES ADEQUATE PROTECTION

NATIONAL  
CONSISTENCY

ADEQUATE  
PROTECTION

BY ALLOWING PLAN RULES TO BE MORE  
STRINGENT IN CERTAIN CIRCUMSTANCES



TO PROTECT MATTERS OF  
NATIONAL IMPORTANCE,  
NAMELY:

“Outstanding natural  
features & landscapes”

“Significant natural  
areas”



ACHIEVE OTHER NATIONAL  
INSTRUMENT OBJECTIVES

FW objectives to give  
effect to FW-NPS

NZCPS policies 11, 13,  
15 & 22



PROTECT UNIQUE AND  
SENSITIVE ENVIRONMENTS

Separation granite  
point soils

Geothermal areas and  
karst geology

Certain human drinking  
water sources



# NES-PF's Risk Based Regulatory Approach



## NES-PF TAKES A RISK-BASED APPROACH

### FORESTRY SPECIFIC RISK ASSESSMENT TOOLS

Measure risk of each forestry activity



### LEVEL OF IDENTIFIED RISK DETERMINES:

Whether a forestry activity is classified as being:



How strict conditions set for each activity are

### RESTRICTIONS SET BASED ON RISK



The **higher** the identified **risk**



The **more likely** consent is required



The **stricter** the **restrictions** imposed



# NES-PF Risk Assessment Tools



## OVERVIEW OF NES-PF'S RISK ASSESSMENT TOOLS

### INTRODUCES THREE RISK ASSESSMENT TOOLS

- 1  Erosion Susceptibility Classification **EROSION & SEDIMENT RISK**
- 2  Wilding Tree Risk Calculator **RISK OF WILDING CONIFER SPREAD**
- 3  Fish Spawning Indicator **RISK OF FISH & HABITAT DISTURBANCE**

### TOOLS BASED ON LOCAL GEOPHYSICAL, BIOLOGICAL AND ECOLOGICAL DATA



+

UPDATED AS NEW INFO AND TECHNOLOGY BECOMES AVAILABLE



### TOOLS TAILORED TO IDENTIFIED FORESTRY-SPECIFIC RISKS



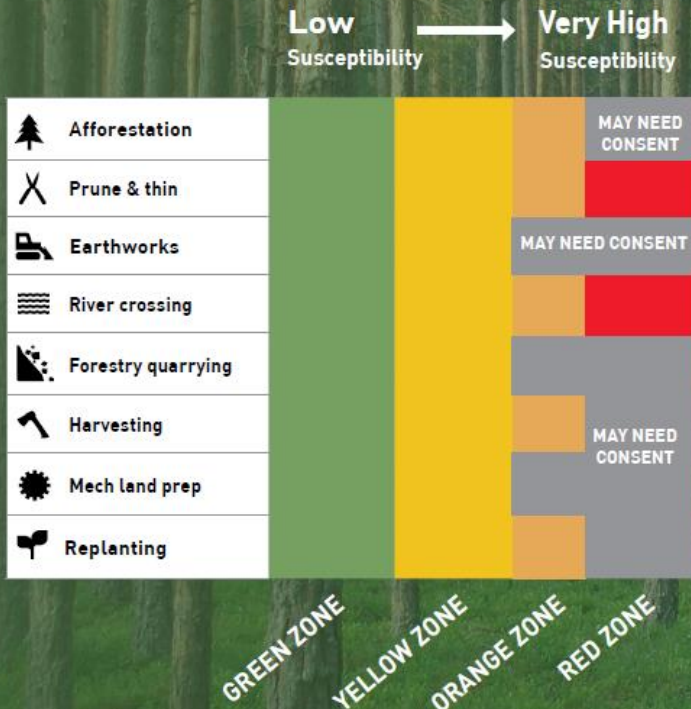
THUS, CAN MORE ACCURATELY DETECT & GAUGE FORESTRY EFFECTS





# EROSION SUSCEPTIBILITY CLASSIFICATION TOOL

## DETERMINES FOREST LAND EROSION RISK



## IT IS BASED ON



## OTHER CONSIDERATIONS



### Erosion classification review process

Landowners/forest operators/councils can initiate review of specific land



### Based on "potential erosion severity" data

Published in land use capability surveys



### Online interactive map

Helps landowners easily identify erosion susceptibility of their land

<http://www.mpi.govt.nz/growing-and-producing/forestry/overview/>



# FISH SPAWNING INDICATOR TOOL

## A CONSISTENT APPROACH

To managing the risk of fish and habitat disturbance caused by plantation forestry activities



## WHILE ACCOUNTING FOR LOCALISED VARIATION

In terms of: fish species, latitude, altitude & climatic conditions

## TAKES TARGETED APPROACH THAT RECOGNISES & INDICATES



33 fish species present in rivers, lakes and wetlands sensitive to forestry activities



When these fish are spawning



Where these fish are spawning



## REQUIRES CONSENT

for activities that disturb spawning habitats during spawning times

## BASED ON BEST SCIENTIFIC DATA

In terms of variables relevant to ascertaining risk



Mostly restricts applicable activities during:



## ONLINE INTERACTIVE MAP

Lets landowners identify fish species present in streams / rivers on their property



# WILDING TREE RISK CALCULATOR

## A CONSISTENT APPROACH

To managing wilding conifer spread risk associated with:

- Afforestation
- Replanting other species



Important, as unmanaged spread can adversely affect:

- Landscape values
- Conservation values
- Land uses
- Hydrology

## HOW IT WORKS?

Calculator determines wilding conifer risk at a given site using

### 6 RISK INDICATORS

Points assigned to each indicator - if the score is 12 or higher consent is required

This tool supports the "National Wilding Control Programme"

## MEASURING RISK

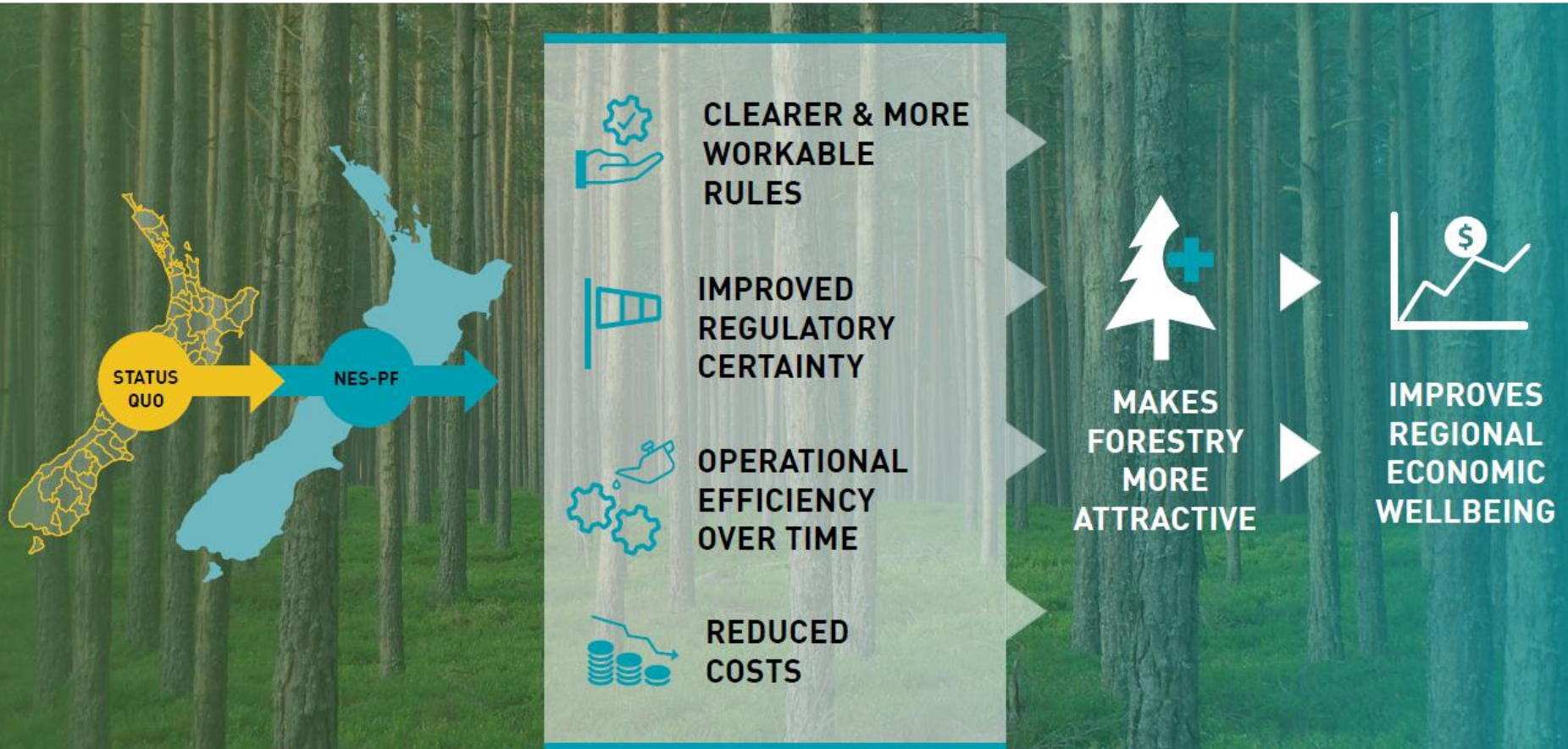
- 1 Spread vigour of the tree species
- 2 Palatability of tree species to livestock
- 3 Topographical placement of the site to be planted
- 4 Land-use characteristics of planted land
- 5 Surrounding vegetation
- 6 Wind conditions



# Improved Alignment with the RMA

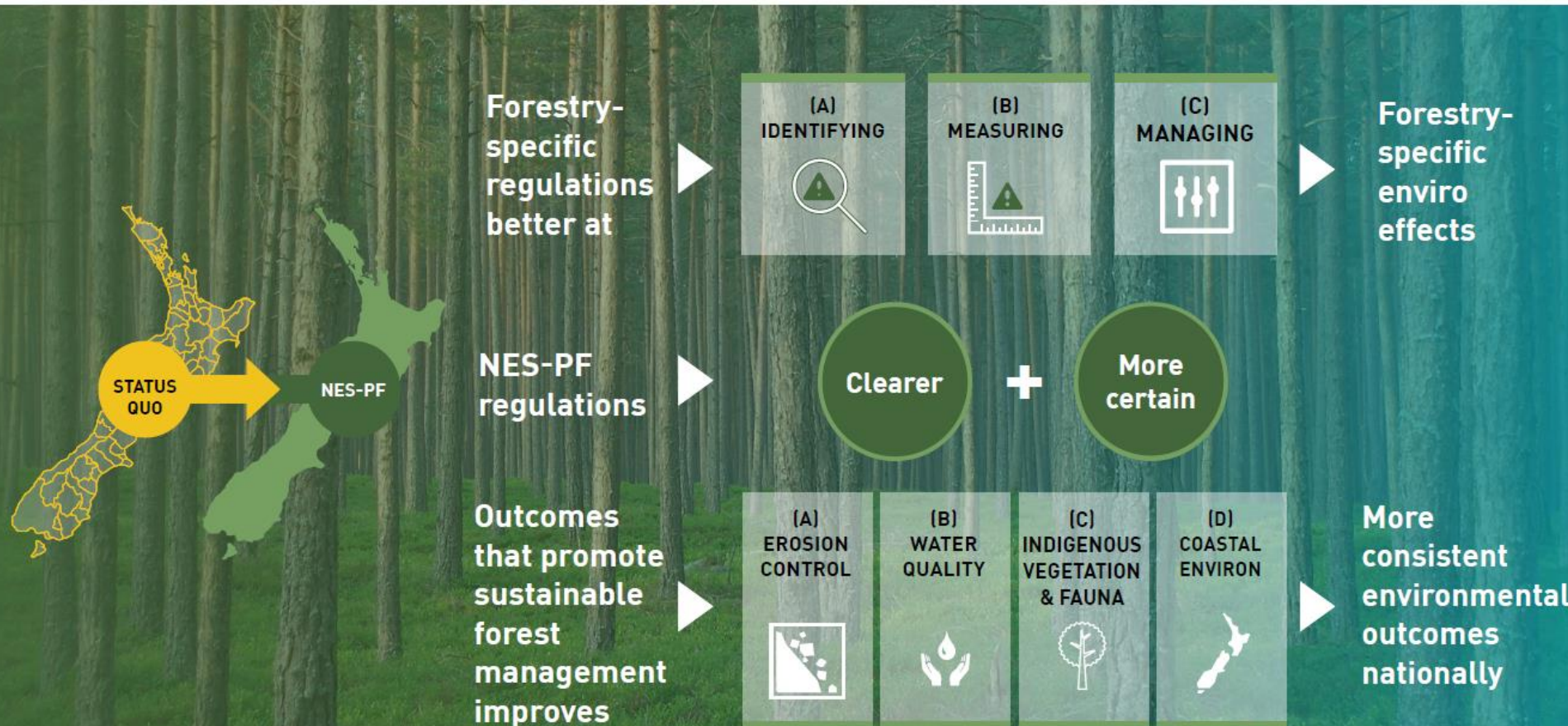


## ECONOMIC BENEFITS OF NES-PF



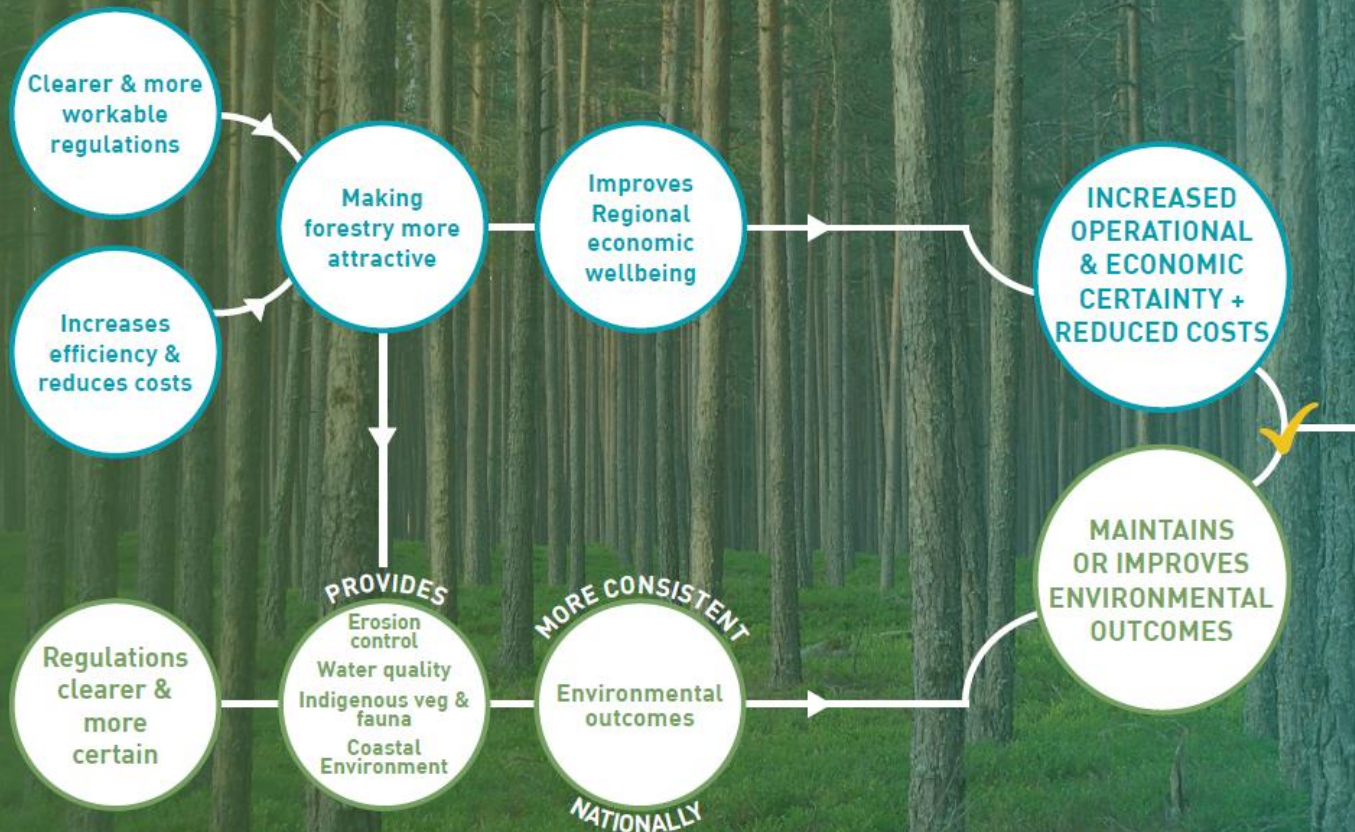


# ENVIRONMENTAL BENEFITS OF NES-PF





# IMPROVED ALIGNMENT WITH RMA PURPOSE



## RMA Purpose (5)

Use, development & protection of natural & physical resources

that provides for

- Economic →
- Social →
- Cultural →

**Wellbeing**

While

- Safeguarding ecosystems
- Meeting future generation's needs
- Avoiding, mitigating or remedying adverse effects



# Implications to Foresters

## MAIN IMPLICATIONS

### BENEFITS FOR FORESTERS



Reduced need to advocate on regional and district plans



Regulation set for plantations spanning regional & district boundaries



Reduced costs over time



Increased operating efficiency



Greater regulatory and investment certainty over time

### OTHER IMPLICATIONS



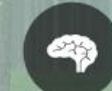
Regulations risk based: low environmental risk = activity typically **permitted**



Of forestry activities permitted if relevant conditions met



Initial compliance costs increase during transition



Understand when & how to apply risk-assessment tools



Foresters must keep good records including:



Quarry Erosion  
& Sediment  
Management Plan



Harvest  
Plan



Forestry  
Earthworks  
Management Plan



# PERMITTED ACTIVITY CONDITIONS

To be permitted an activity must meet all the permitted activity (PA) conditions



NES-PF's PA conditions are based on extensive consultation, good forestry practice and existing council rules



All PA's have been assessed as not having significant adverse effects when conditions are met



If PA conditions can't be met an activity is controlled, restricted discretionary or discretionary, so resource consent will be needed

## NOTICE CONDITION

Notice must be give prior to




- |  |  |
|--|--|
|  Afforestation  |  Quarrying  |
|  Earthworks     |  Harvesting |
|  River Crossing |  |

## ENSURES COUNCILS:

1. have adequate warning of activities
2. can prioritise monitoring (based on assessed risk)

## MGMT PLAN CONDITION

Plans required for:

-  Harvest
-  Quarry Erosion and Sediment Mgmt
-  Earthworks

## PLANS MUST INCLUDE:

1. mapping
2. risk assessment
3. mgmt processes to avoid, mitigate, or remedy risks



# HOW NES-PF WORKS | Regulations split into three parts

## 1. FORESTRY ACTIVITY REGULATIONS

Provide a **separate set** of regulations for each of the 8 forestry activities below:



## 2. ANCILLARY ACTIVITY REGULATIONS

Apply if any of the activities below are part of a forestry operation:



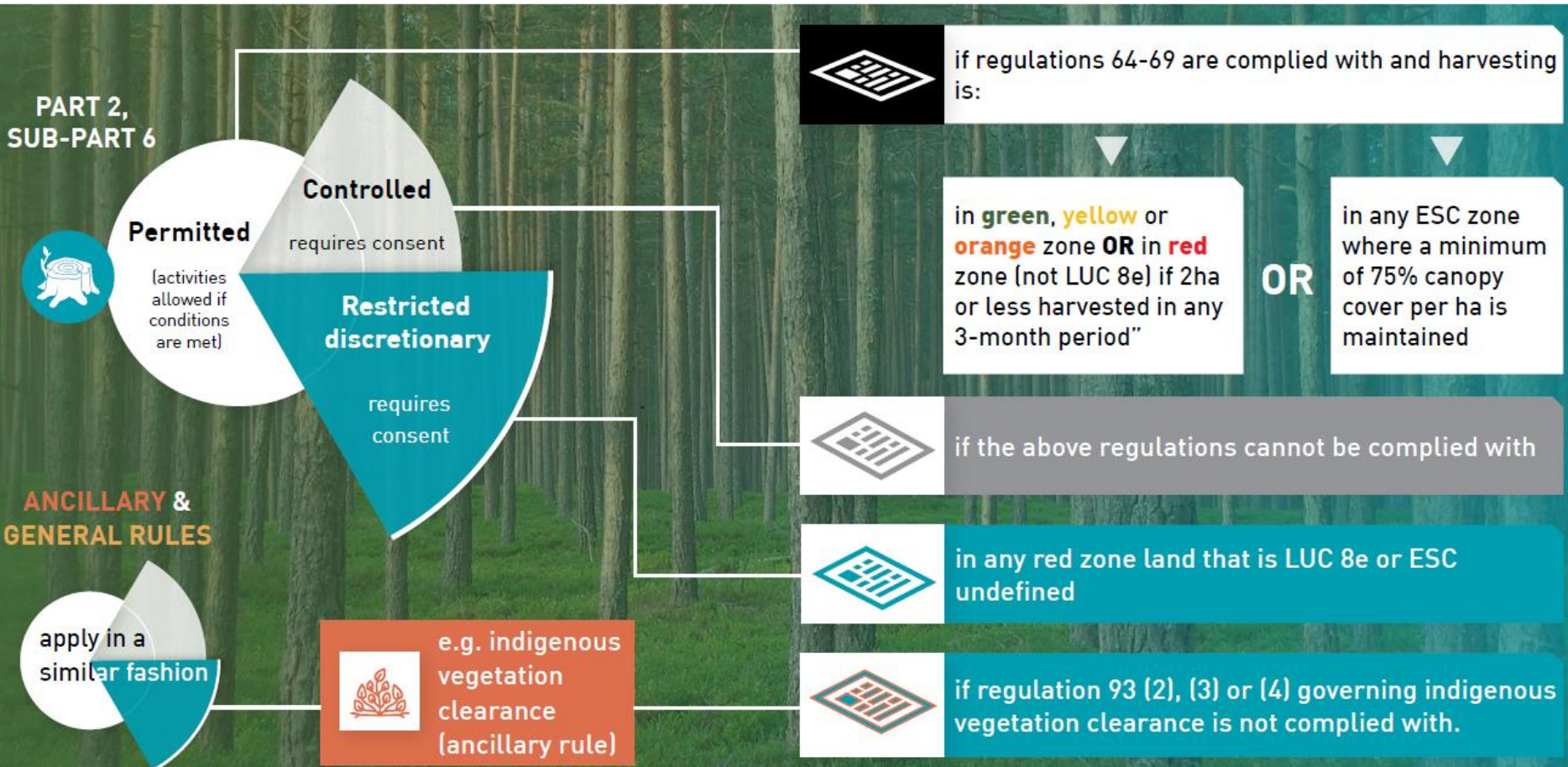
## 3. GENERAL REGULATIONS

Apply if forestry or ancillary activity entails 1+ of below:





# CONSENT THRESHOLDS: Harvesting regulation example







# *Things to think about as a landowner*



- There is an old saying: “never trust anyone with sawdust in their boots” ...
- Give some serious consideration of what you plant where and how you will harvest them.
- The contractor or forest company managing or undertaking your harvest is responsible for the NES-PF obligations. This means they are legally responsible for notifying council, preparing harvest plans and sediment plans, obtaining consent etc.
- For harvesting start the planning for this a couple of years out. And if there is significant roading over challenging landscapes, consider methods that reduce this risk many years out.
- Do not accept a contractor who knocks on your door because he is at the neighbours. He will not be able to start tomorrow as the process with council can take a month or so. If you have a small understanding of the NES-PF then they cannot pull the wool over your eyes.
- Pick a contractor based on previous work. Council cannot tell you who is good or bad but may be able to enlighten you about NES-PF breaches or non-compliance.







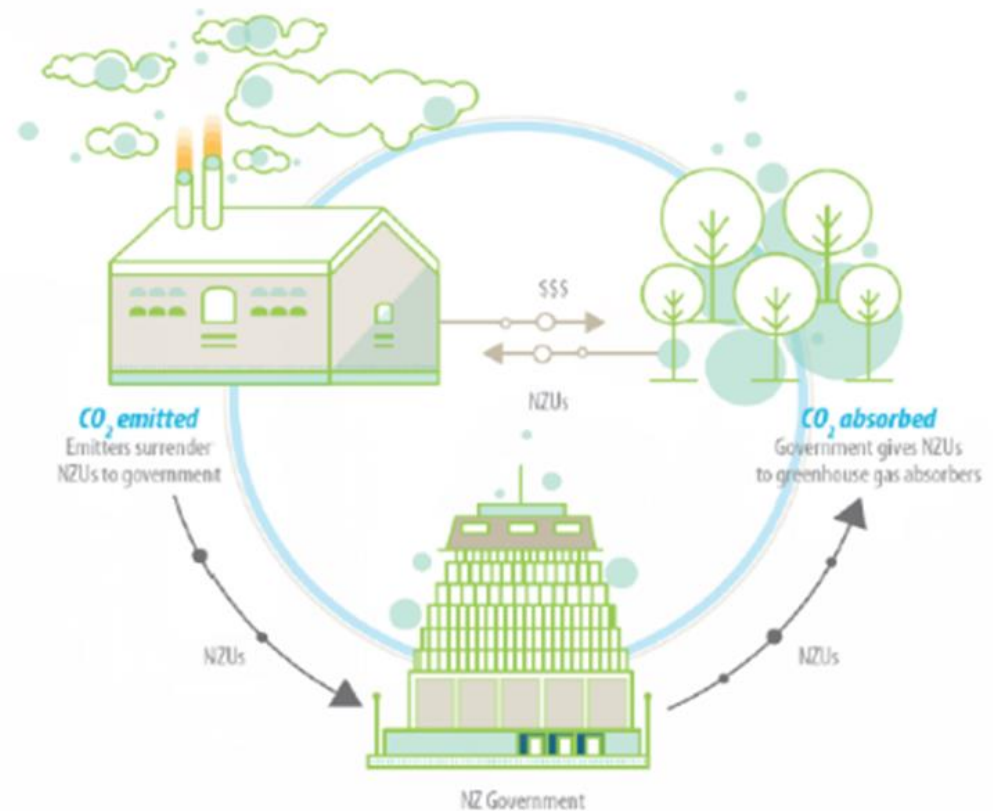
# ***The Emissions Trading Scheme***





# What is the emissions trading scheme (ETS)?

- The ETS is the trade of carbon units- called NZU's- to reduce greenhouse gases
- 1 NZU represents a tonne of carbon dioxide equivalent
- Polluters have to surrender NZU's to Government each year to cover their emissions.
- Those who remove greenhouse gases e.g. forest owners can earn NZU's to sell.





# Why is NZU price on the move up?

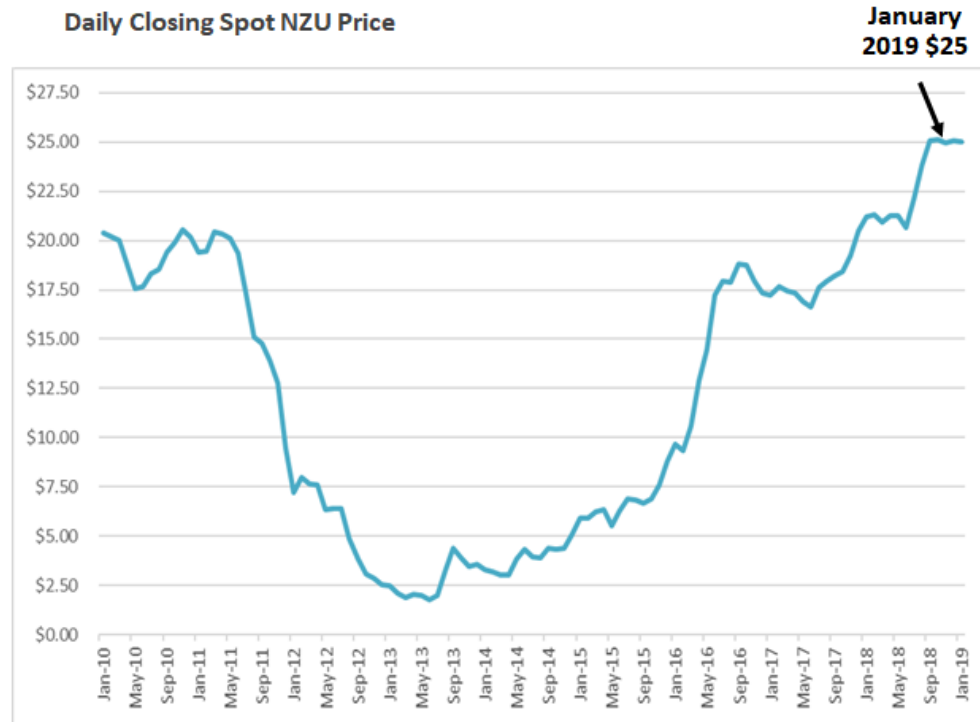


- NZ commitment to Paris may be hard to achieve
- NZU demand to double in 2019 due to phase out of emitter 2-for-1 subsidy

**By 2020 NZ ETS= 40 Million NZU**

**(\$1B industry per annum)**

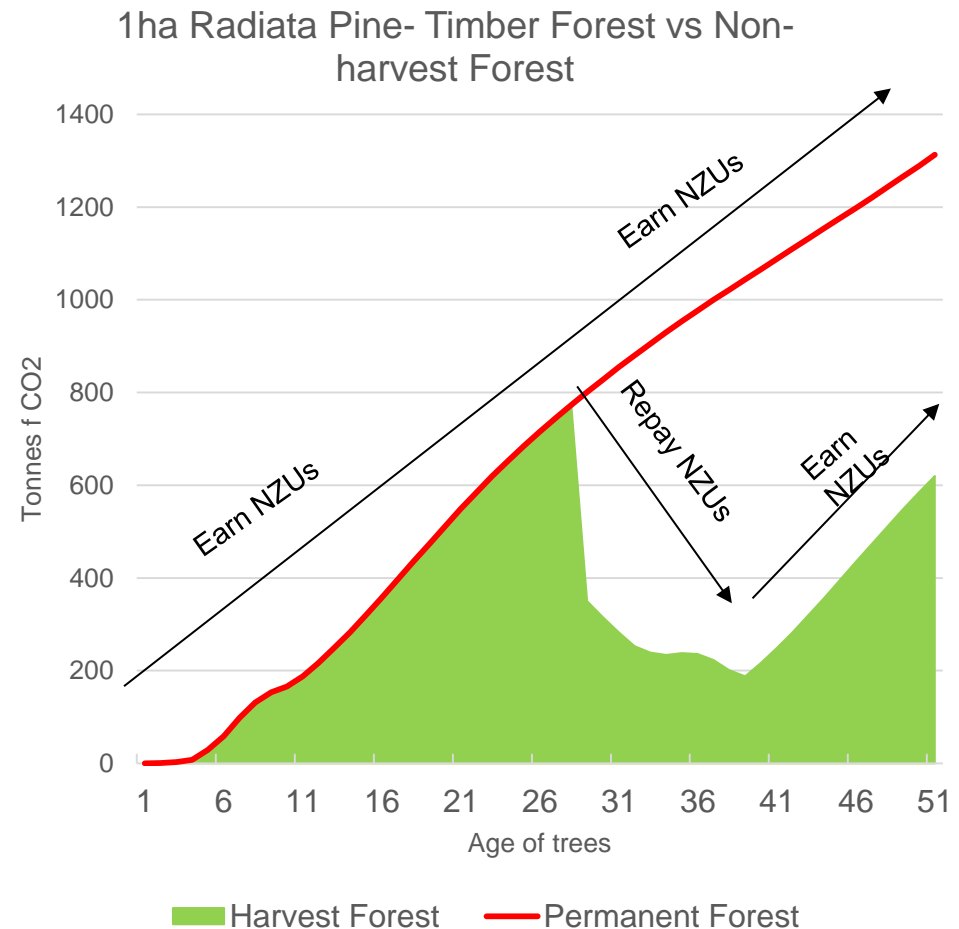
- ETS review signals increase of \$25 price cap prior to 2020 (EU ETS Price is NZ\$38)
- Uncertainty as to supply of NZUs during 2021 to 2030



Source: Carbon Forest Services

# How do forests earn NZU's

- Trees absorb carbon dioxide from the atmosphere and store it in their trunks, branches, leaves and roots.
- The amount of carbon stored in a forest depends on species, stocking, site conditions such as soil and rainfall, and how long the forest is left to grow.
- When trees are harvested or die, carbon is treated as released back into the atmosphere.



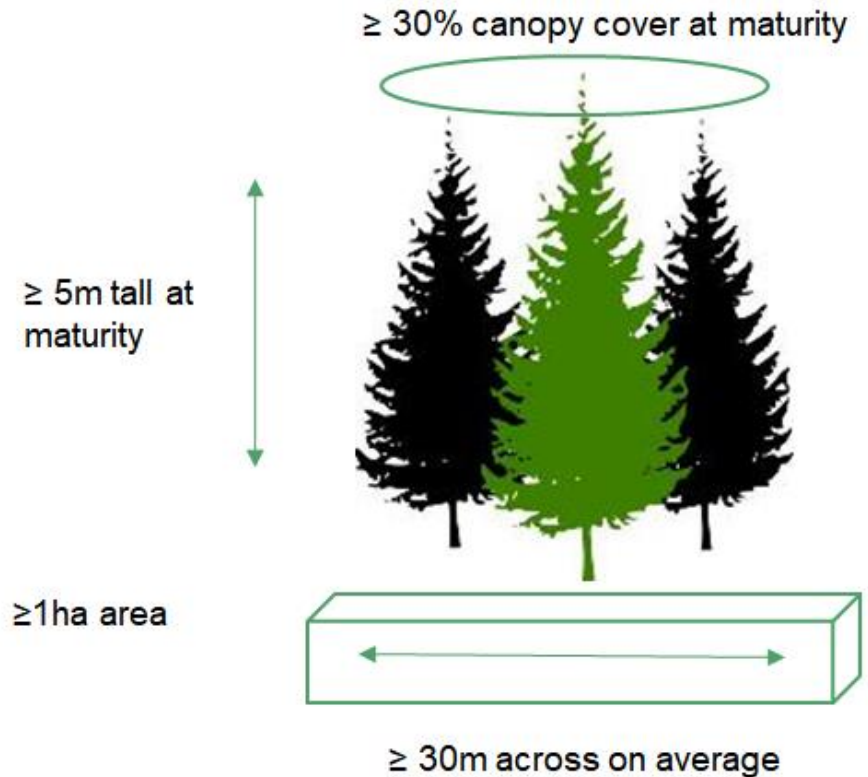


# What is an eligible carbon forest?

Forests established on 'bare land' after 1989 = eligible post-1989 forest

**Forest =**

- **At least 1 hectare in area**
- **At least 30m in width (excludes most shelterbelt plantings)**
- **30% canopy cover per hectare at maturity**
- **Tree species capable of reaching 5 metres in height at maturity in situ (i.e. in location they are growing)**

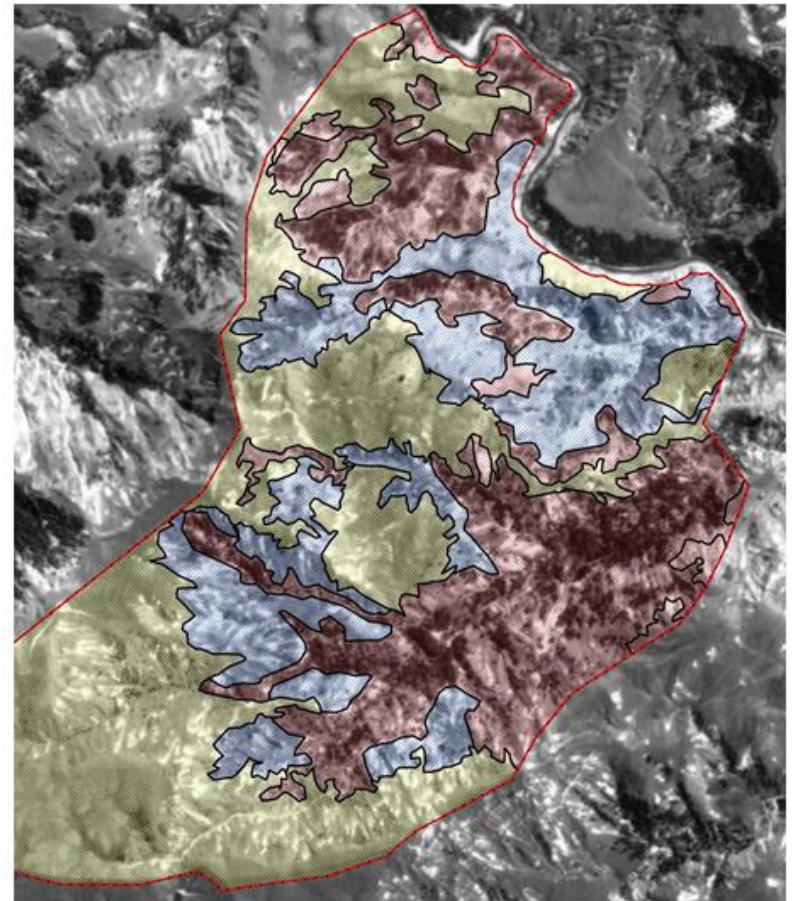


Source: Ministry for Primary Industries

# What is eligible Forest? Difficult Cases



- Scattered scrubby vegetation present in 1990 and now in forest.
- Need clear evidence that not tree species in 1990 i.e. was broom or gorse.
- MPI become very strict. A lot of poor scrubby farmland which is perfect for native regeneration is deemed ineligible.



Source: Farm land in Waikato Region- 1988 Aerial



# ETS – Land Classification

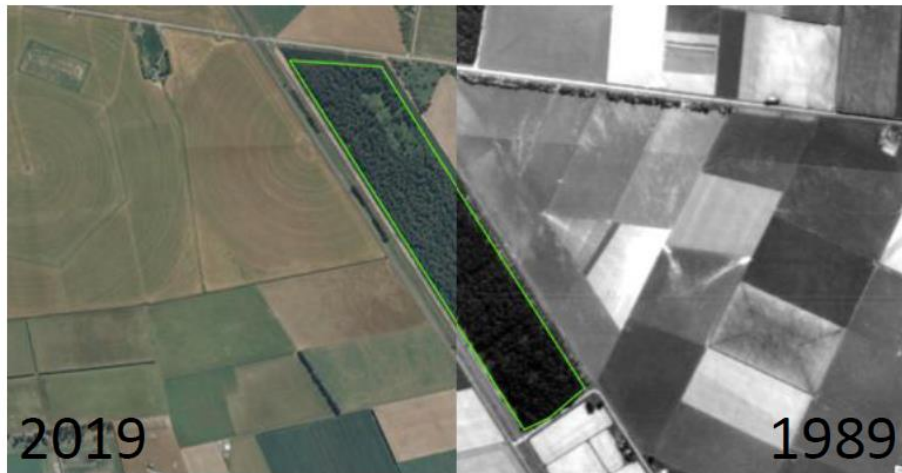
Forest Land is either  
or

“Pre90”

- Pre90 is land that was in trees before 1<sup>st</sup> Jan 1990
- Pre90 was given a one-off payment of carbon credits
- Have to replant Pre90 area, if not liable for a fine

“Post-89”

- Post-89 is land that was **not in trees** after 31<sup>st</sup> December 1989
- Have a choice to enter the ETS
- Not entering = zero risk = zero reward



# What land is eligible for carbon forestry?

- If land meets forest definition before 1990 it is generally pre-1990 forest and not eligible
- Forest includes native & exotic tree species/ planted or regenerated





# Measuring Carbon

## Under 100 ha

Schedule 6: Tables of Carbon Stock per Hectare for Post-1989 Forest Land

Table 1: Carbon stock per hectare for *Pinus radiata* by region (expressed as tonnes of carbon dioxide per hectare)

Age (yrs)	AK	W/T	B/P	Gis	H/S/N	N/M	C/W	O	S
0	0	0	0	0	0	0	0	0	0
1	0.5	0.4	0.4	0.6	0.5	0.2	0.2	0.3	0.2
2	3	3	2	4	3	1	1	2	1
3	8	7	6	10	9	3	2	5	3
4	29	25	24	37	34	12	5	9	14
5	89	50	51	77	71	28	15	26	35
6	98	84	84	121	113	48	31	49	65
7	131	111	118	162	155	73	53	72	99
8	153	130	143	190	185	100	76	94	134
9	166	142	155	201	197	117	101	124	160
10	188	163	169	219	210	132	125	141	174
11	217	188	188	242	233	144	139	146	181
12	249	218	212	270	260	161	150	156	198
13	283	249	239	302	291	182	158	172	219
14	320	283	269	336	325	206	170	192	244
15	357	318	300	372	361	232	186	214	272
16	396	354	333	410	398	260	205	240	302
17	435	391	367	447	436	290	226	268	334
18	473	428	401	485	473	322	249	298	367
19	511	464	435	522	510	353	274	329	401
20	549	500	468	558	547	386	300	361	435
21	585	536	501	594	582	418	326	394	470
22	620	570	533	628	617	450	353	426	504
23	653	603	564	661	650	482	380	458	538
24	685	636	593	692	681	513	408	490	571
25	715	666	622	722	712	543	435	521	604
26	745	696	650	751	741	573	461	552	635
27	773	726	677	779	769	603	488	583	667
28	801	755	704	807	797	632	515	613	698
29	828	783	730	834	825	661	542	644	729
30	855	811	755	861	852	690	569	674	760
31	880	838	780	886	878	718	595	703	790
32	905	865	804	912	903	745	621	732	820
33	930	891	828	937	929	772	647	761	849
34	954	916	851	961	953	799	672	789	878
35	977	941	873	985	978	825	697	817	906
36	1 000	965	896	1 009	1 002	850	722	845	934
37	1 022	990	917	1 032	1 026	875	746	872	962
38	1 044	1 013	938	1 055	1 050	900	770	899	989
39	1 066	1 037	959	1 079	1 073	924	793	925	1 016
40	1 088	1 060	980	1 102	1 097	947	816	951	1 043
41	1 110	1 083	1 001	1 125	1 121	971	839	978	1 070
42	1 132	1 106	1 021	1 148	1 144	994	861	1 003	1 097
43	1 154	1 130	1 042	1 172	1 168	1 016	883	1 029	1 123
44	1 176	1 153	1 062	1 196	1 192	1 039	905	1 054	1 149
45	1 198	1 176	1 082	1 220	1 217	1 061	926	1 080	1 176
46	1 220	1 199	1 103	1 244	1 242	1 083	947	1 105	1 202
47	1 243	1 223	1 123	1 269	1 267	1 105	967	1 130	1 229
48	1 266	1 247	1 144	1 295	1 292	1 126	988	1 155	1 255
49	1 289	1 272	1 165	1 321	1 319	1 148	1 008	1 181	1 282
50	1 313	1 296	1 187	1 347	1 345	1 170	1 028	1 206	1 309

## Over 100 ha



**Te Uru Rākau**  
Forestry New Zealand

A Guide to the

## Field Measurement Approach

for Forestry in the Emissions Trading Scheme

August 2018

Ministry for Primary Industries



# Carbon schemes- PFSI and ETS Post-1989



- PFSI = long term protection= environmental integrity



- PFSI Units= gold standard



- But... restrictions on harvesting and land use change

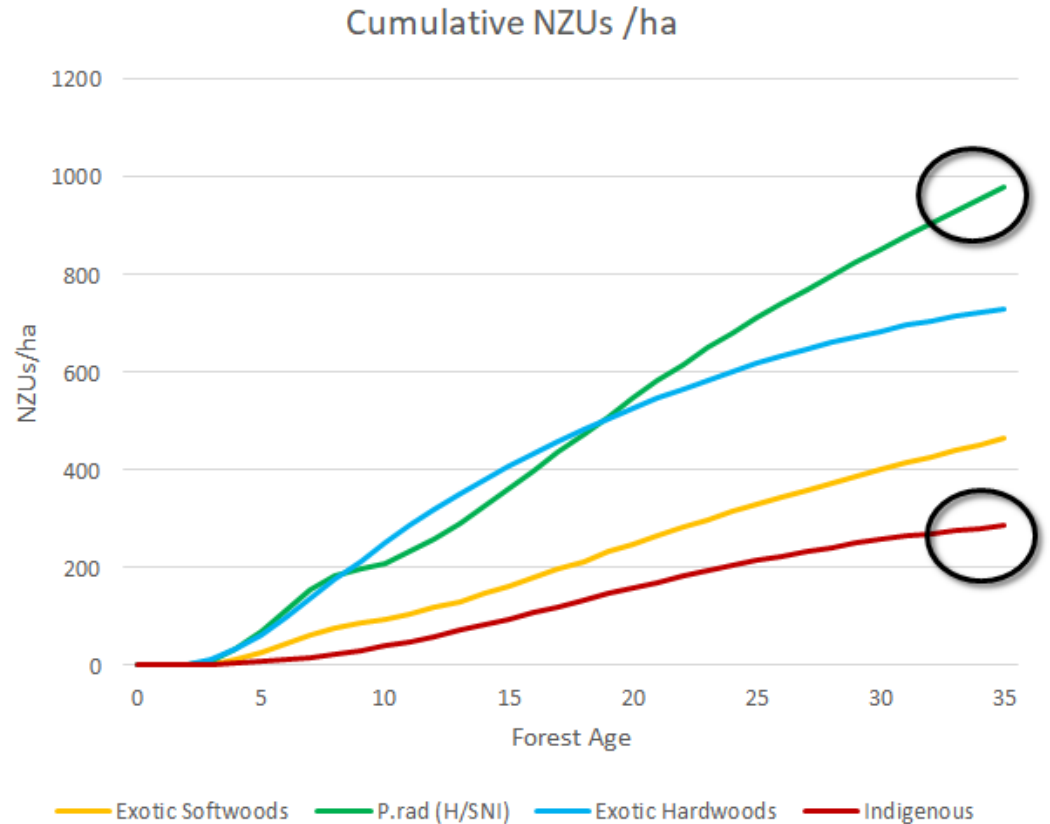


PFSI	ETS- Post-1989
Participant- Landowner	Participant- Landowner, or Forestry Right Holder, or Lease Holder
Similar costs	Similar costs
Rules- Legislation & Covenant	Rules- Legislation
Covenant registered on Land Title	Notice registered on Land Title
<b>Minimum Term of 50 years</b>	No minimum term. Can exit anytime
<b>Restricted- Small coup harvesting</b>	No harvest restriction- Can clear fell
Permanence of forest	No guaranteed permanence of forest
~15,000 ha registered (~10,000 ha indigenous)	~325,000 ha registered (~30,000 ha indigenous)



# Species comparison

- High variability between species based on Growth Rates
- Exotics are fast / natives slow
- Exotics cheaper than natives
- Early sequestration maximizes internal rate of return (IRR%)



Source: MPI look up tables (Climate Change (Forest Sector) Regulations 2008)

# Economic comparison- (no timber)



- Rates of return similar for radiata and eucalypts
- Planting natives low return 5% (assume low cost planting regime e.g. manuka)
- Passive regeneration high return but.... Big risk... rate and density of regeneration site dependent
- Passive regeneration may be rapid or very slow and patchy. Some ex farmland still in grass or gorse 30+ years after retirement
- Adding a land value kills economics of natives without additional support

1 hectare / 35 years	P. radiata	Eucalypts	Planted Manuka	Indig Regen
Establish Costs	\$1,500	\$2,000	\$2,500	\$0
Average NZUs/Year	28	21	8	8
Average Income/Year (\$25/NZU)	\$700	\$525	\$200	\$200
IRR%- No Land Value	23%	20%	5%	18%
IRR%- Land Value \$4000/ha	9%	7%	-0.4%	1%

Source: Carbon Forest Services March 2019.



# Funding Support- One Billion Trees



- \$240M earmarked for 1BT
- Different rate for different outcomes / species
  - 30% paid payment before establishment
  - 50% paid after establishment
  - 20% paid once forest maintained
- Landowner keeps carbon except crown gets first 6 years for radiata
- Top ups available for erosion prone land/ fencing
- Max 300ha per annum per application

*'right tree in right place'*

Type of planting	Size	Base rate/ha
Indigenous mix (e.g. a mix of native trees and shrubs)	1ha–300ha	\$4000
Mānuka/kānuka (particularly for erosion control or as a nurse crop for an indigenous forest)	5ha–300ha	\$1800
Indigenous natural regeneration (e.g. retiring land and managing it to naturally return back to trees)	5ha–300ha	\$1000
Exotic (e.g. planting eucalypts, redwoods or <i>Pinus radiata</i> )	5ha–300ha	\$1500



# *Other things to think about...*



- Any plantings or regeneration should have a purpose and you will get your 'biggest kicks' from areas that have many purposes
- Like all good land management decisions it is important to match land use to land type. Planting trees & afforestation is no different – you need to match the tree type to the land type. Under natural regeneration nature is great at deciding what grows where.
- Pick winners: drive your district to see what works well and what doesn't
- There are funding opportunities but do your maths on any traps
- Its often said planting a tree is the easy part – the hard part is nurturing it through weeds and pests
- Harvest planning for production forestry should commence before you plant the first tree and needs to also consider from the road to the block





# *ETS contact*



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