The Development of Tree Crops and Wood Fibre Manufacturing Industries in Western Australia

Presentation to:

Western Australia Cabinet

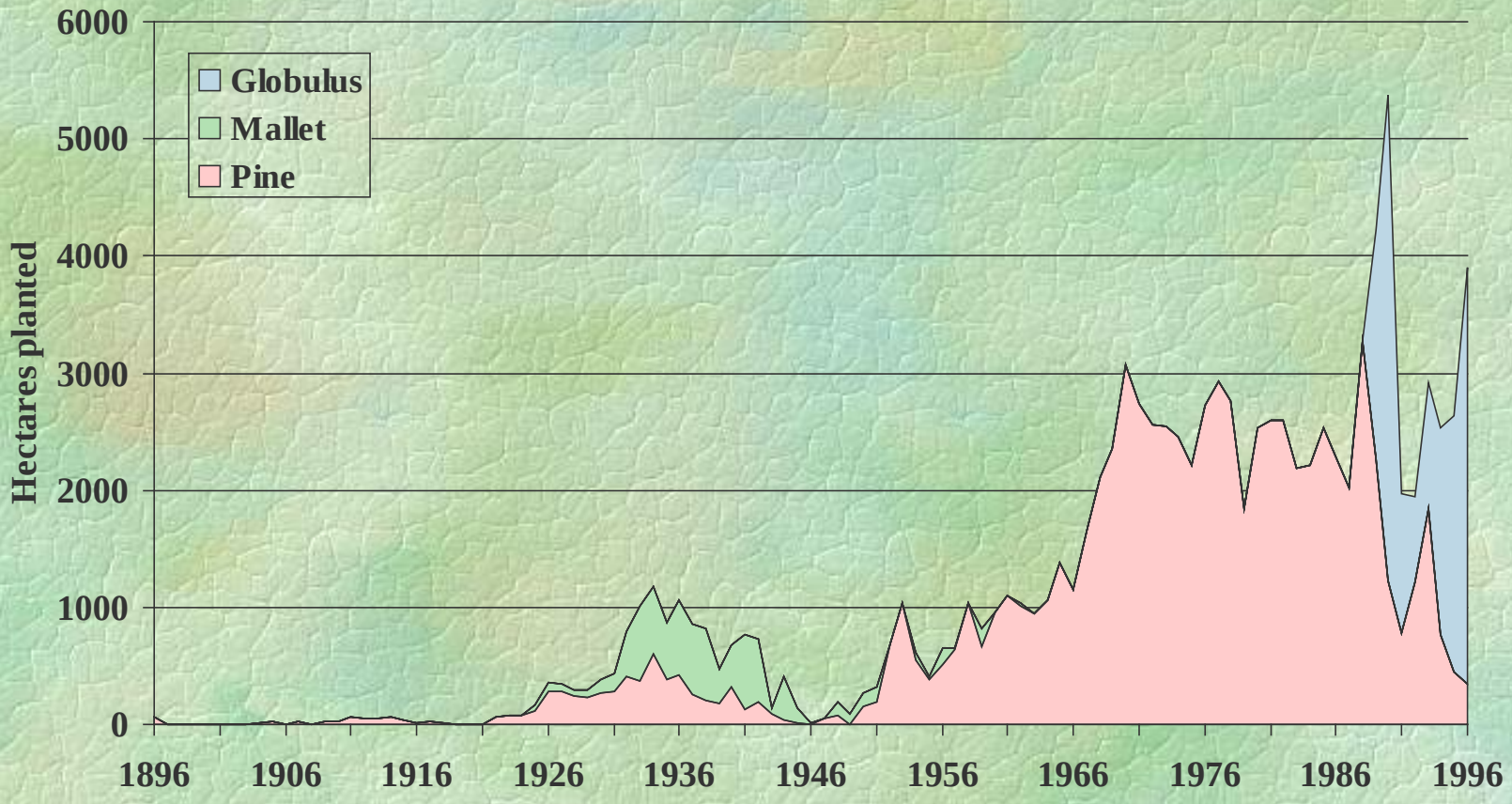
8 June 1998

Syd R Shea

Executive Director

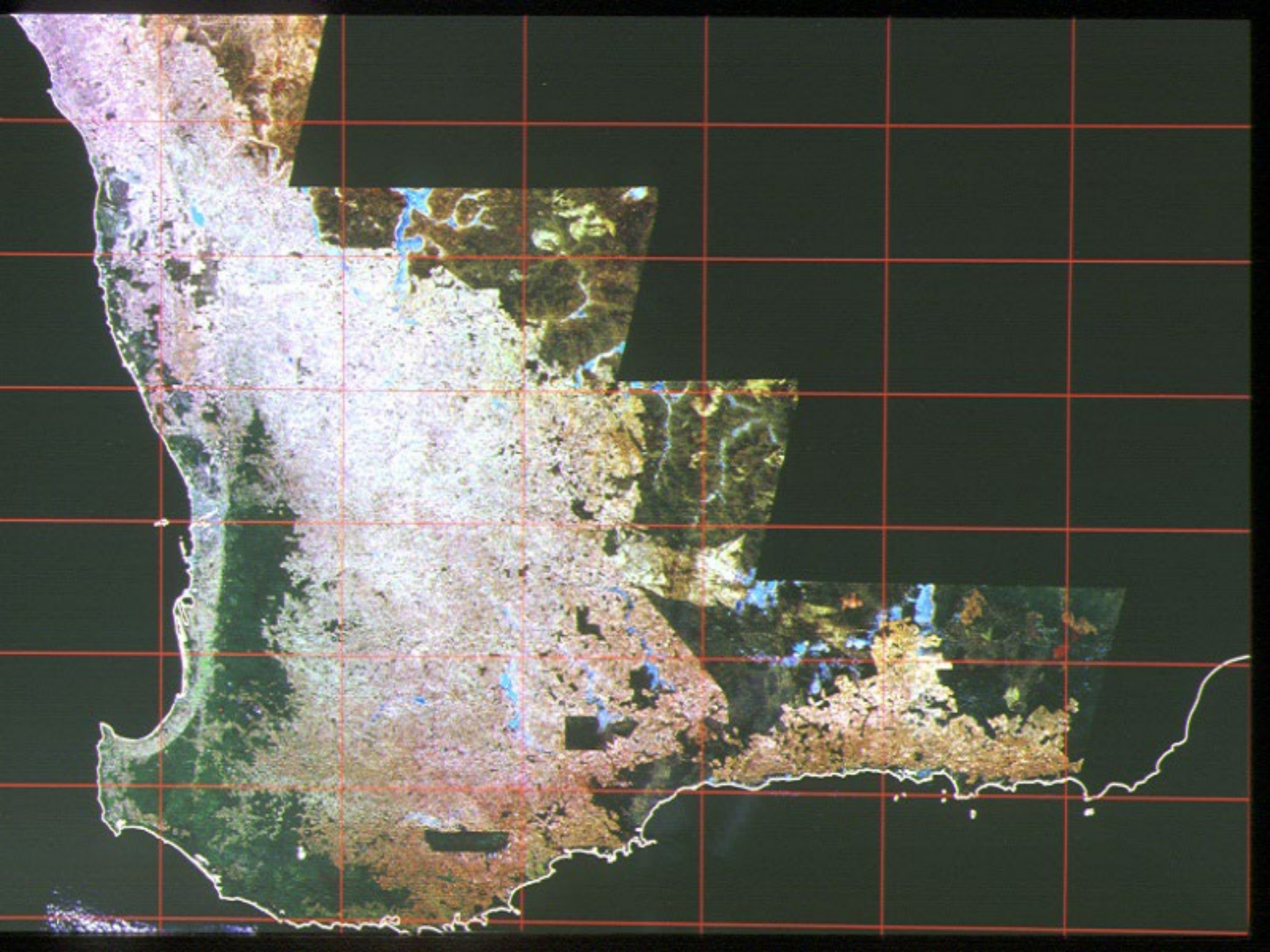
Department of Conservation and Land Management, Western Australia

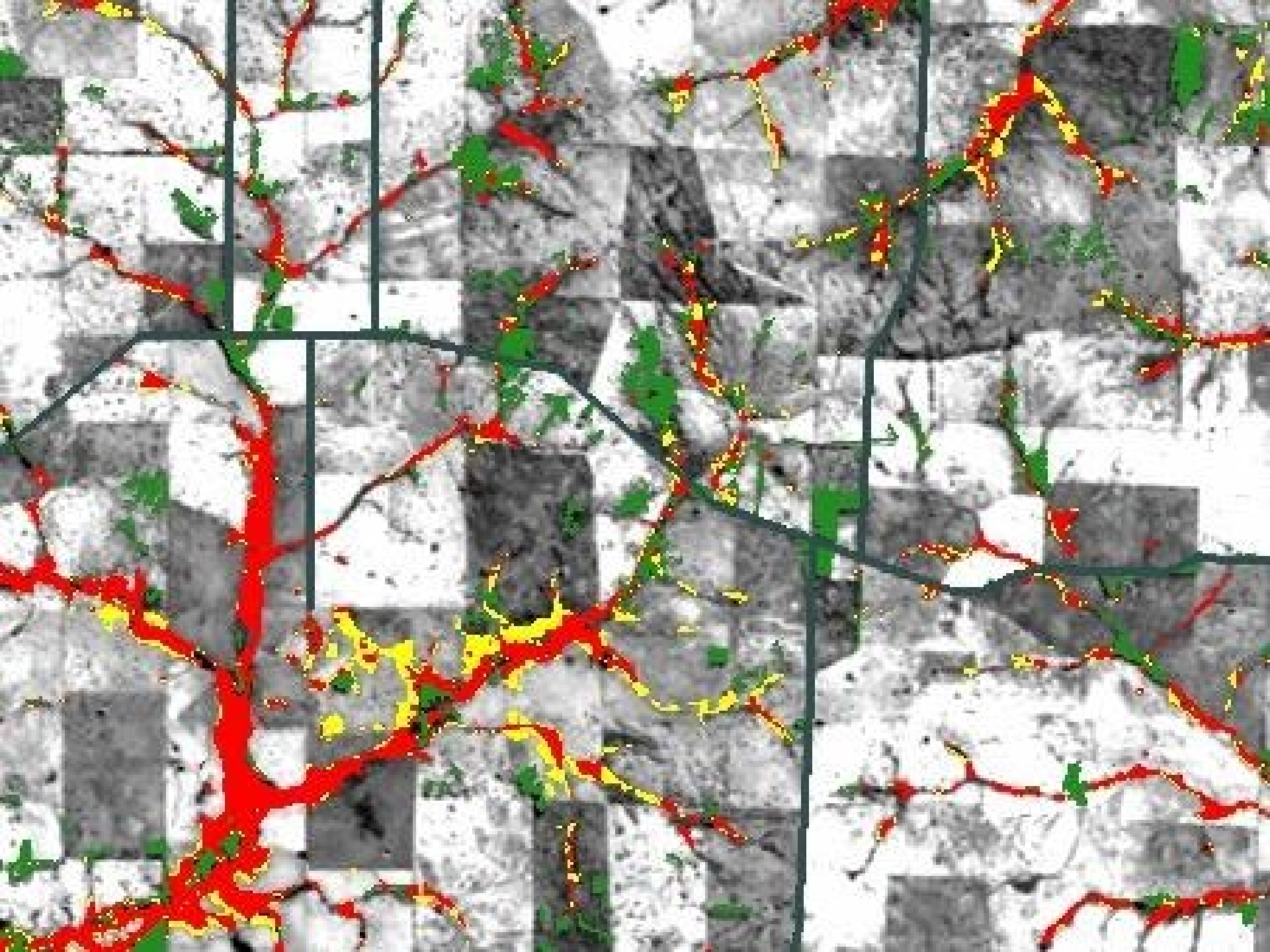
Tree plantings in Western Australia
(WAFD/CALM)



Current Utilisation and Employment in Softwood Manufacturing section

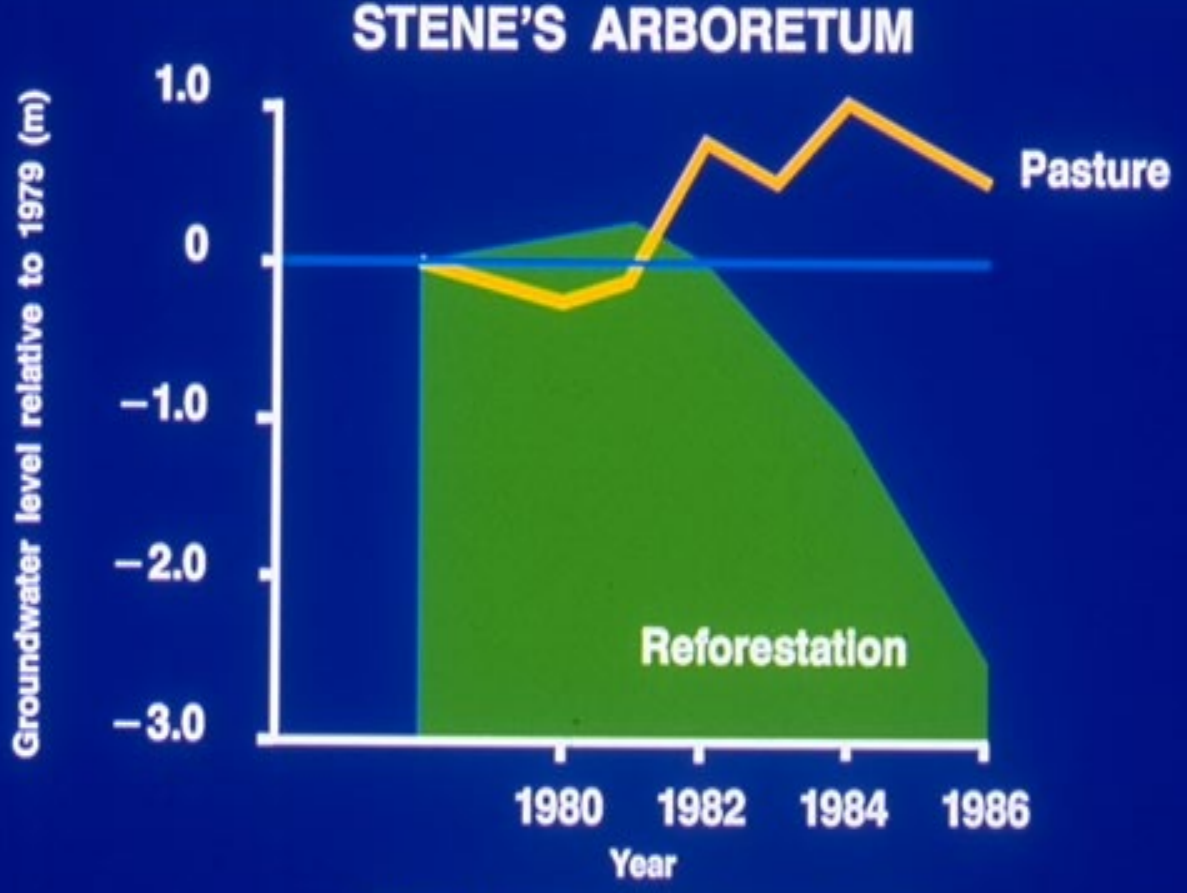
	Intake	**Employment**
Wespine Factory	210 000m^3	207
Medium Density Fibreboard Factory	200 000m^3	130
Particleboard Factory	360 000m^3	220
Pinetec	45 000m^3	98
Pallet and Timber Sales	15 000m^3	20
Whittakers	130 000m^3	68
Koppers	5 000m^3	10
Pempine	16 000m^3	30





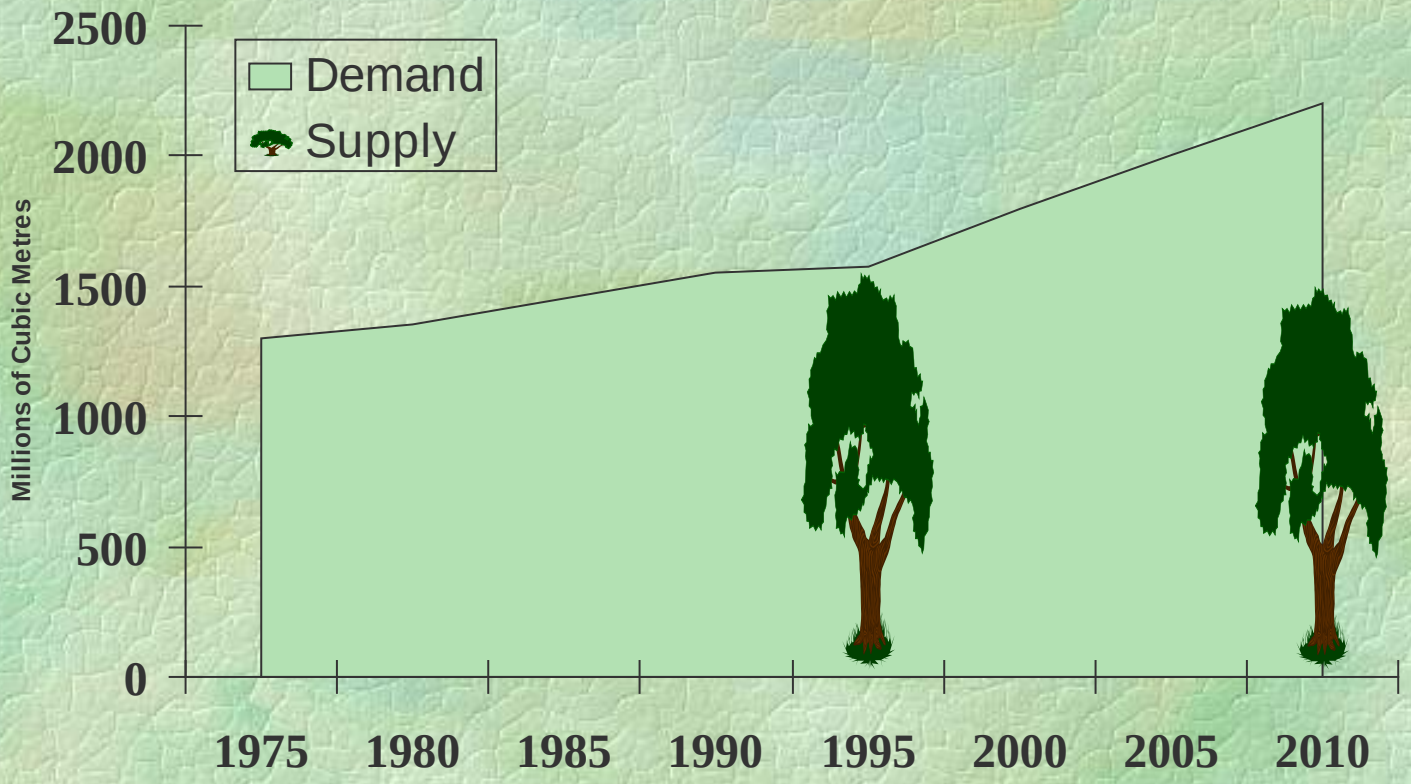
Predicted
Salinity
Risk Areas

THE EFFECT OF TREE CROPS ON WATER TABLE LEVELS



Water Authority of Western Australia
July 1989
Report No. WS 33

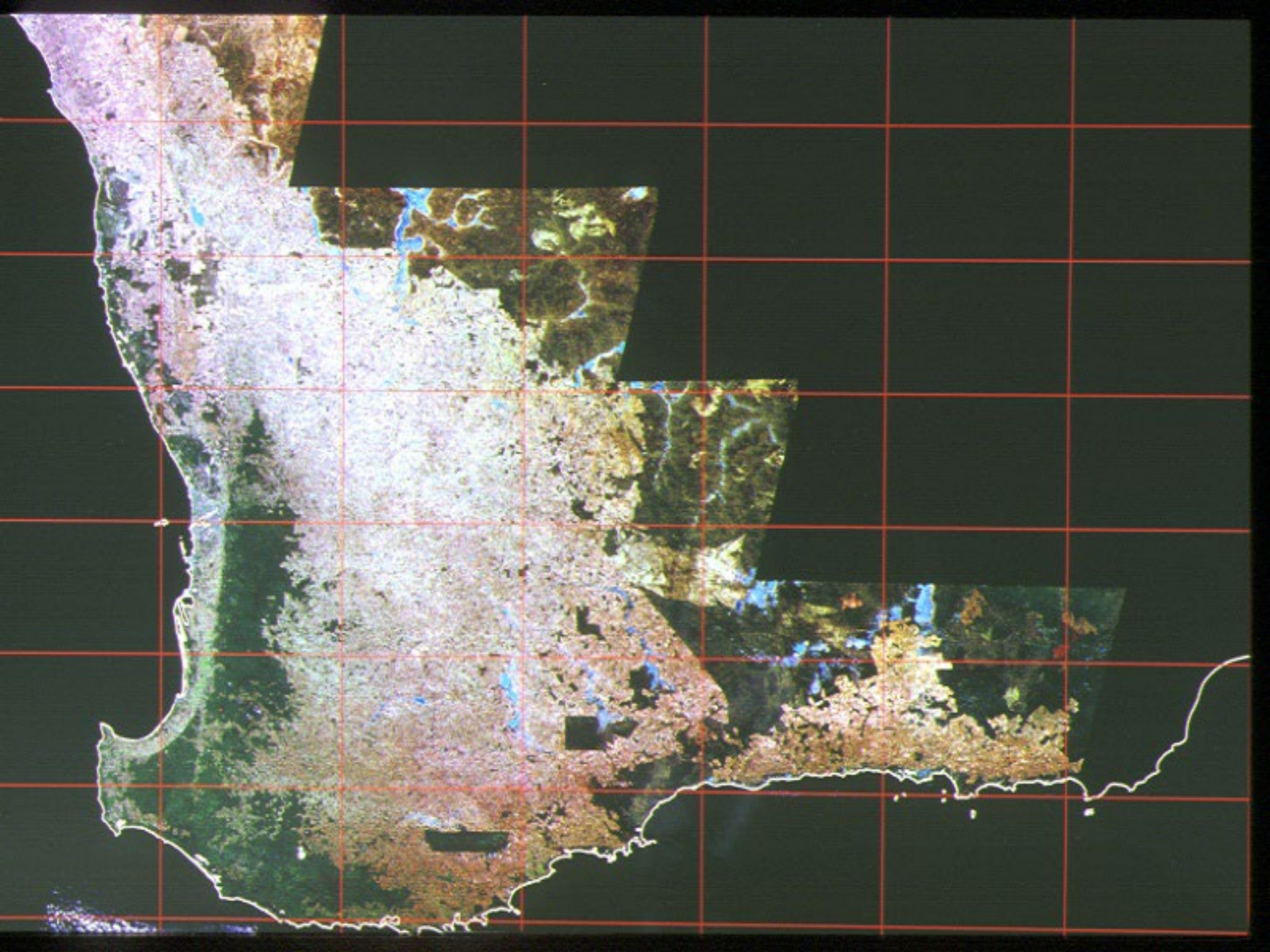
Global wood demand rises as supply falls



Sources: D A Neilson,UN FAO, Apsey & Reed, Jaakko Poyry, Widmans World Wood Reveiw, Xylem Investments Inc

Suitability by country for hardwood pulpwood plantation development to supply Asian markets

After Groome, 1989



Farm Forestry Zones by area and rainfall

	Rainfall (mm)	*Area (x 10^6 ha)*		
		Cleared land[1]	*Suitable land*[2]	*Plantable land*[3]
Pine and Bluegum	>600 mm	2	1.3	.26
New Maritime Pine	400-600 mm	6	4.0	0.8
Wheatbelt	<400 mm	10	6.7	1.3
Total		**18**	**12.0**	**2.36**

FORM P2
APPROVAL NO. B1629
WESTERN AUSTRALIA

TRANSFER OF LAND ACT 1893 AS AMENDED

PROFIT A PRENDRE

[Under s.34B Conservation and Land Management Act 1984 as amended]

DESCRIPTION OF LAND (Note 1)	EXTENT	VOLUME	FOLIO

ESTATE AND INTEREST (Note 2)

ENCUMBRANCES (Note 3)

OWNER (Registered Proprietor) (Note 4)

GRANTEE (Note 5)

EXECUTIVE DIRECTOR OF THE DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT a body corporate constituted by the Conservation and Land Management Act 1984 ("the Act") of Corner of Hackett Drive and Australia II Drive, Crawley Western Australia.

TERM OF PROFIT A PRENDRE (Note 6)

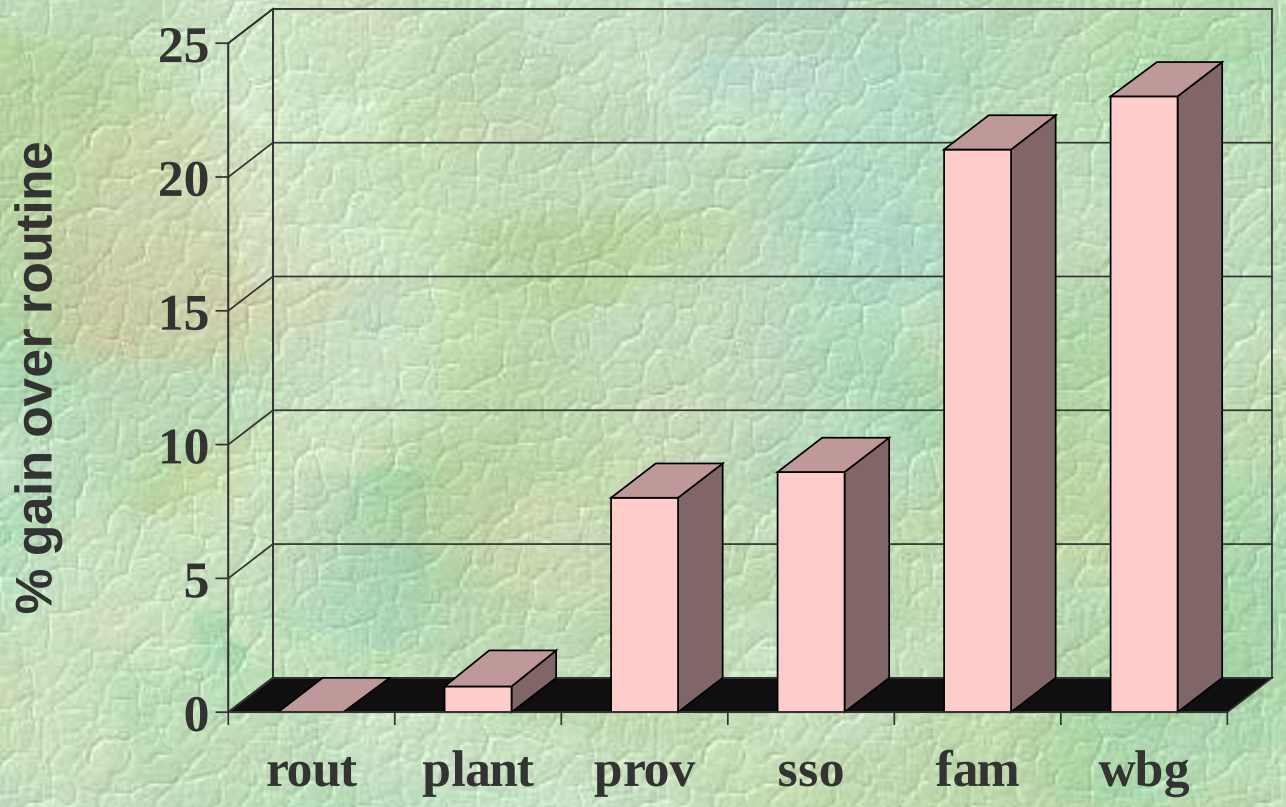
40 years, subject to earlier termination in accordance with clause 8, commencing on and including the First day of January 1998.

The Owner hereby Grants a Profit a Prendre to the Grantee for the term specified above over the land described above subject to the encumbrances shown hereon in accordance with the terms and conditions contained in this Deed.

CALM has joint ventures with 1303 farmers

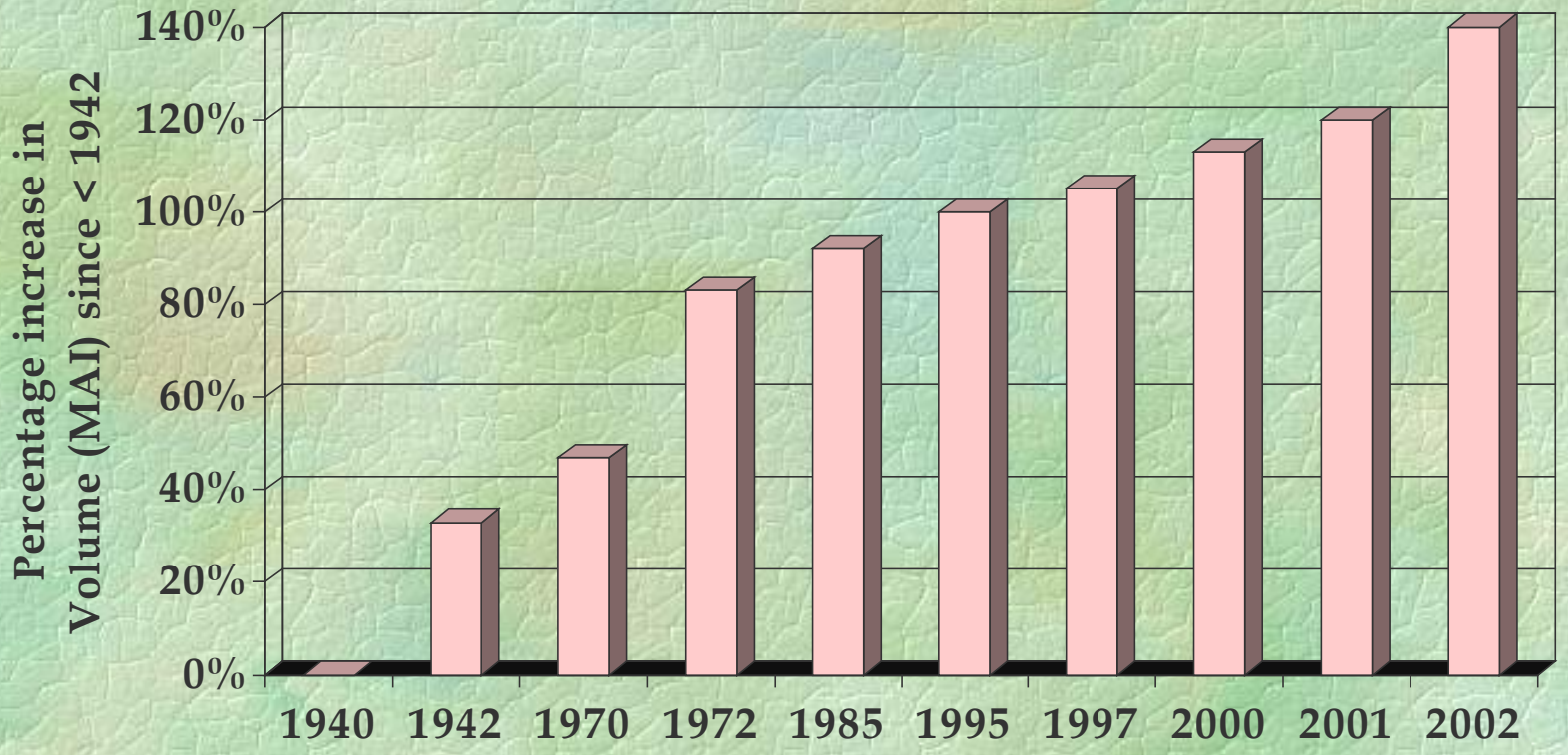
CALM has contracts with 84 land management contractors

Genetic Gains Trial: **wood volume**

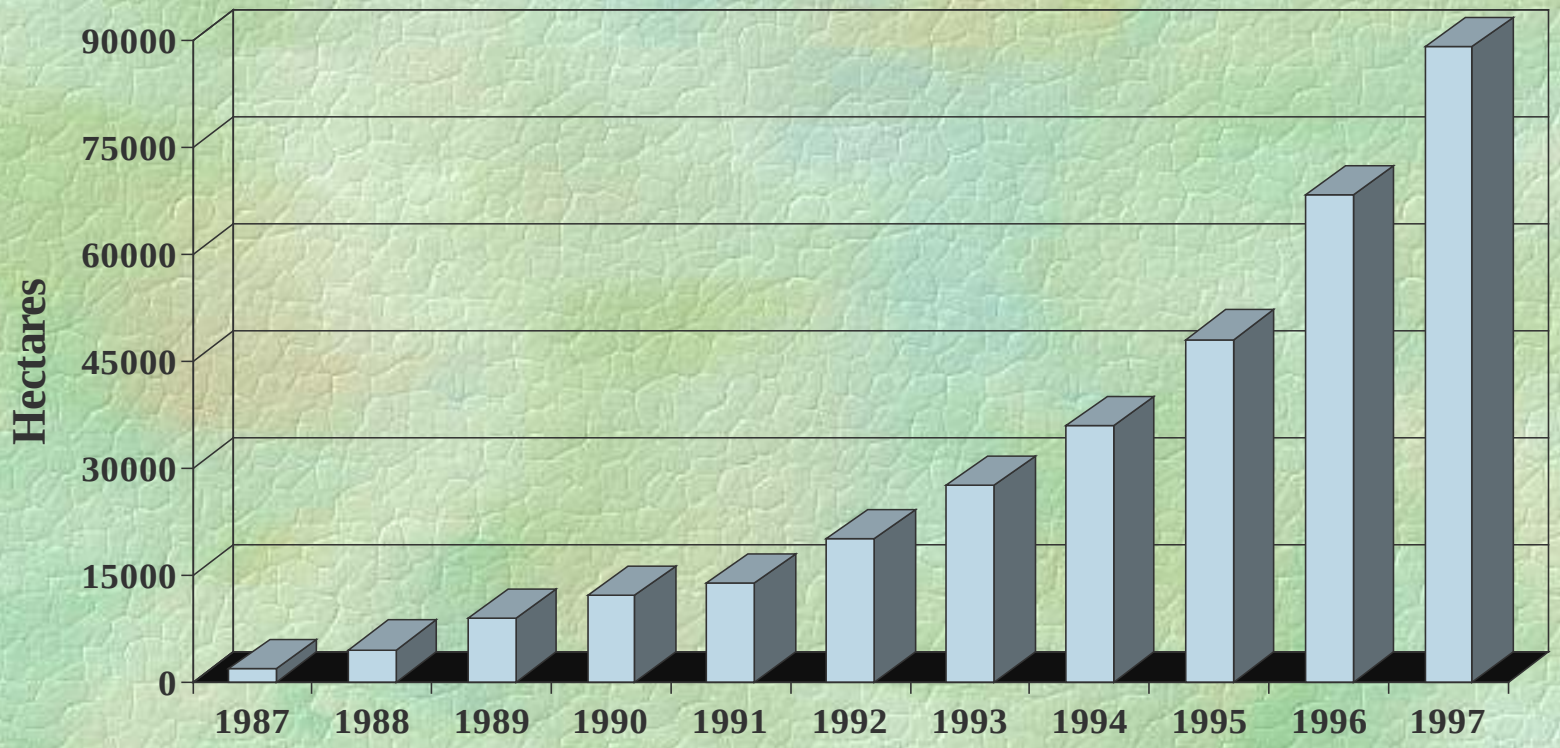



Western Bluegum
Tasmanian Bluegum
Trees are 2 years 8 months old

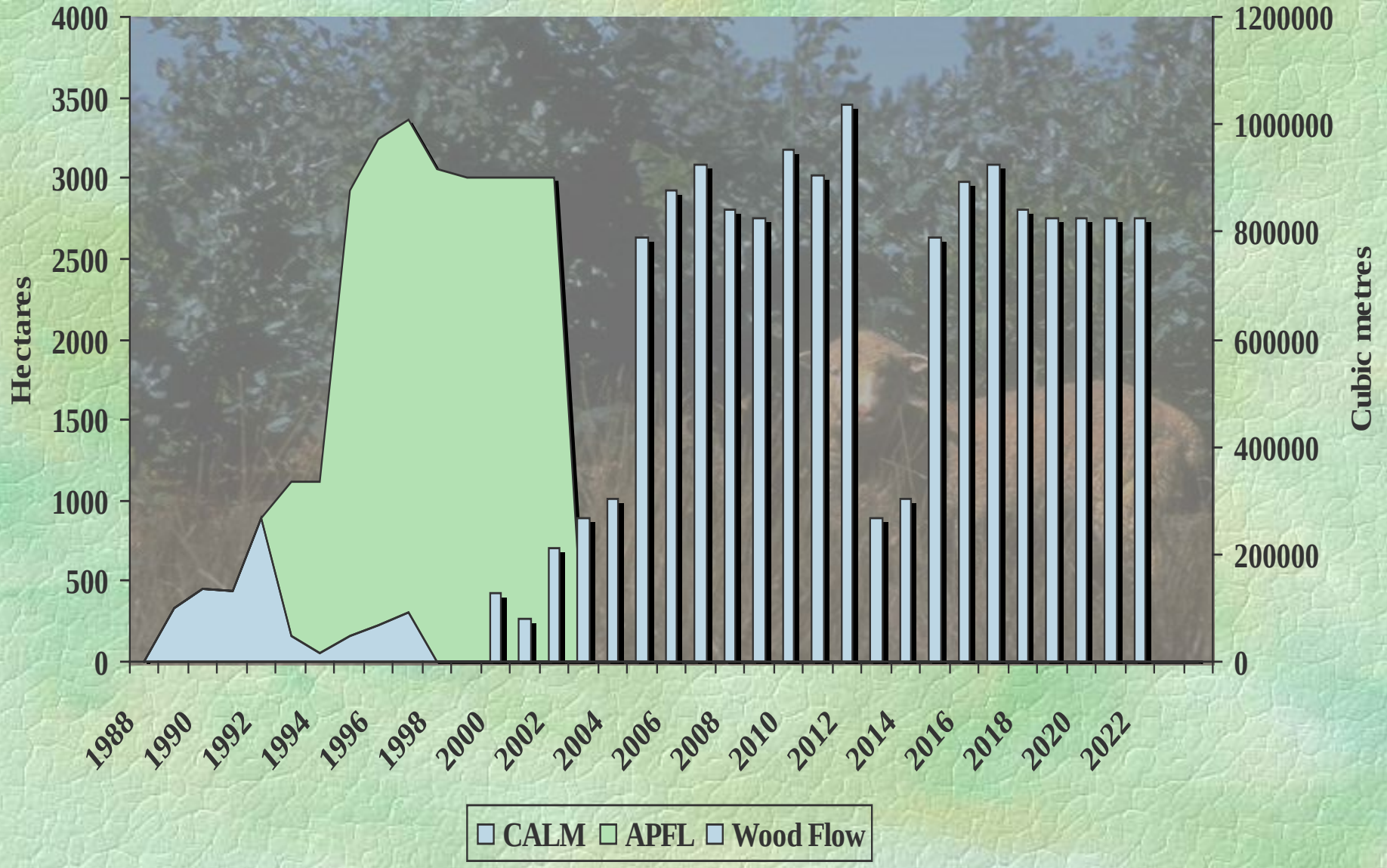
Volume gains from the tree improvement program for Maritime pine



Total area of *E. globulus* in WA



Area of bluegums planted each year (CALM and APFL) and predicted wood flows



Investment to date:

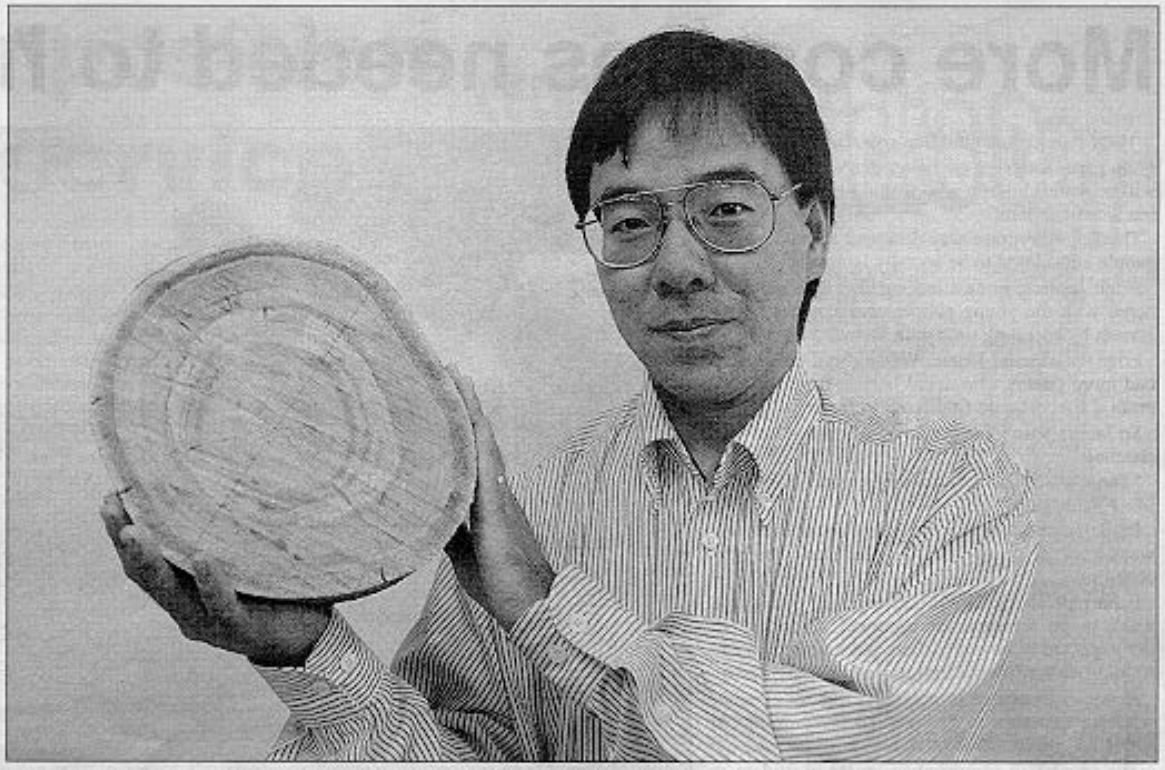
- $20 million

Investment to complete plantation program:

$30 million

Investment required for harvesting, transport and processing:

$20 million to upgrade facilities at Albany Port
$15 million for a mill to process the harvested logs
$3-4 million for a transport system
$16 million for harvesters
$12 million for loading machinery
$22 million for log trucks



WINNING WAYS: Albany Plantation Forest Company director Tom Okada plans to accept the Asia Pacific Marketing Federation's inaugural gold environmental marketing award in Bangkok later this month.

Conservation work wins praise

AN Albany company has won an international award for its services to the environment.

Albany Plantation Forest Company this week took out the Asia Pacific Marketing Federation's award inaugural gold marketing award, launched last year to encourage environmental conservation.

It was chosen from four finalists, from companies working in the 15 countries represented in the Asia Pacific Marketing Federation.

The company was formed in 1993 and plans to establish more than 20,000 hectares of bluegum plantations in the Albany region.

Working with CALM, it had already planted nearly 14 million trees locally.

Its parent companies Oij Paper and Itochu Corporation are part of a WA-Japanese joint venture (with Bunnings Forest Products) who are planning a $30 million woodchipping mill in the Great Southern. The project has been tipped to be operational by next year.

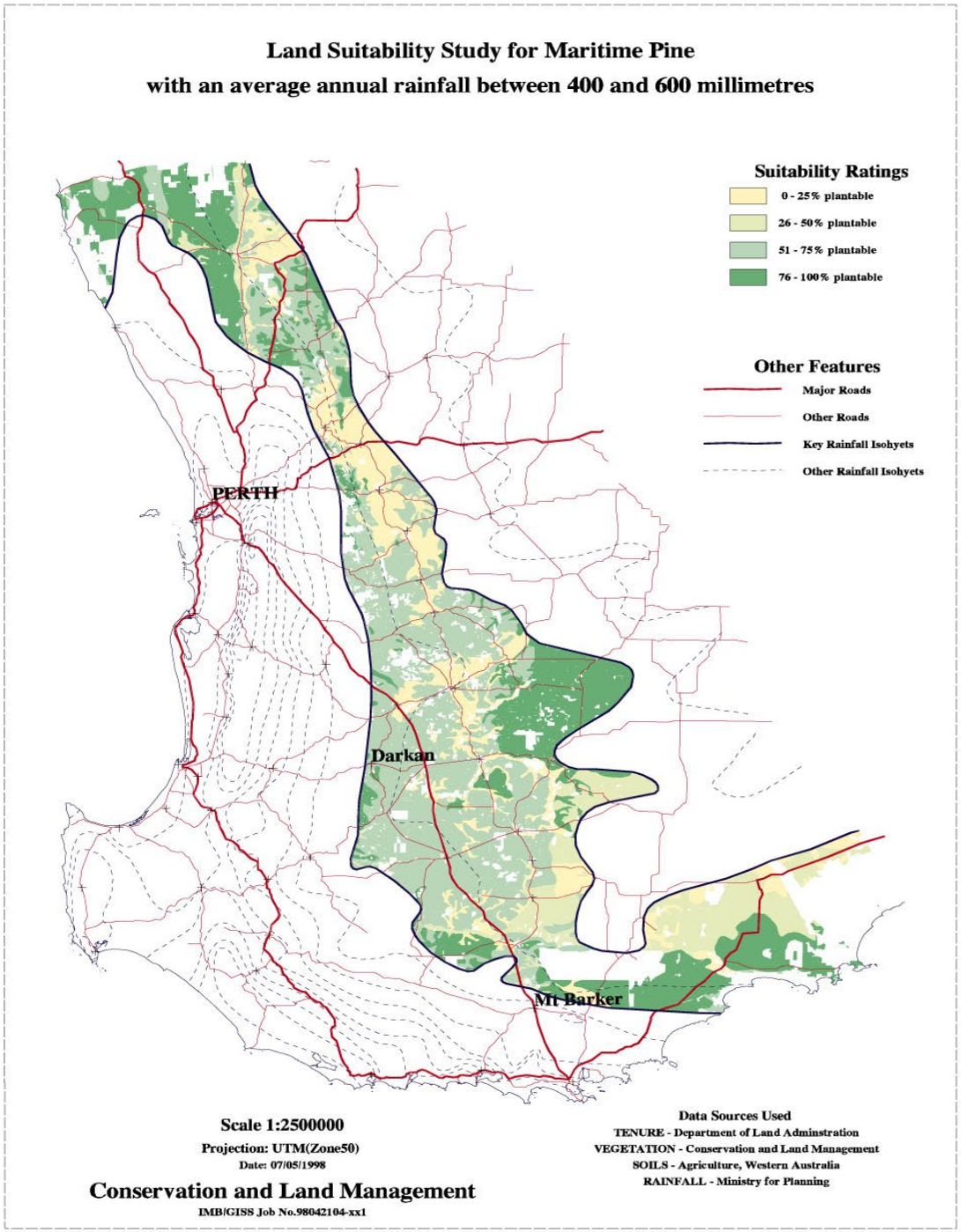
Director Tom Okada said the company was committed to preserving the global environment.

"Our project to establish commercial bluegum plantation is a long-term commitment to the environment and economy of the Albany region," he said.

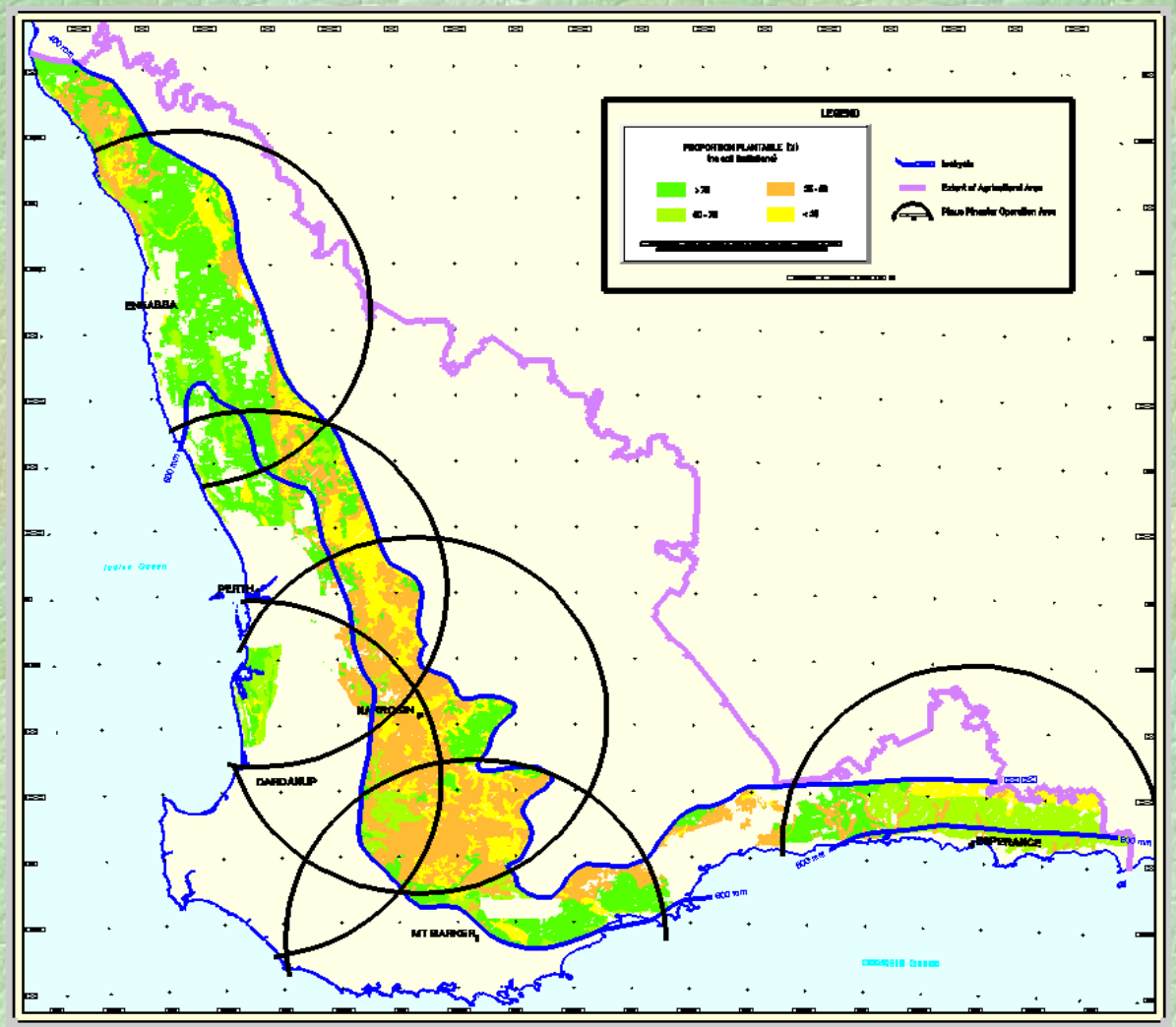
"Our sophisticated sharefarming scheme, which is being carried out in partnership with the local community, has now brought APFC international recognition."

Mr Okada will accept the award, with representatives Oij Paper, Itochu Corporation and Senshukai Co Ltd, at a ceremony in Bangkok on March 26 by her Royal Highness Princess Maha Chakri Sirindhorn. It is the second environmental award won by the company. In 1995 it won the Landcare Australia award for WA business.

Land Suitability Study for Maritime Pine



Land availability in the intermediate rainfall zone for maritime pine



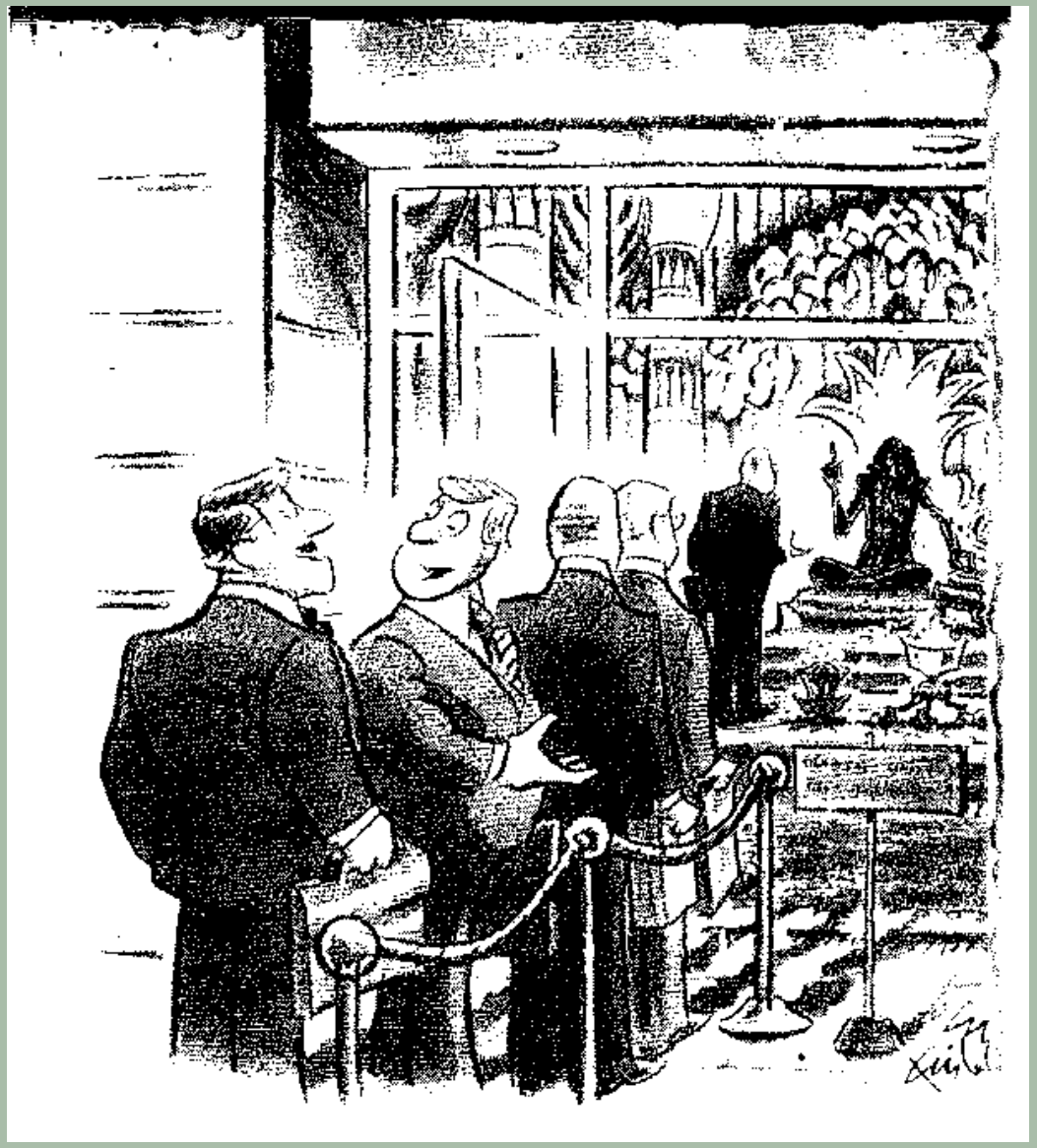
Extract from Kyoto Protocol - Article 2

Each Party included in Annex 1 in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

(a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:

……..

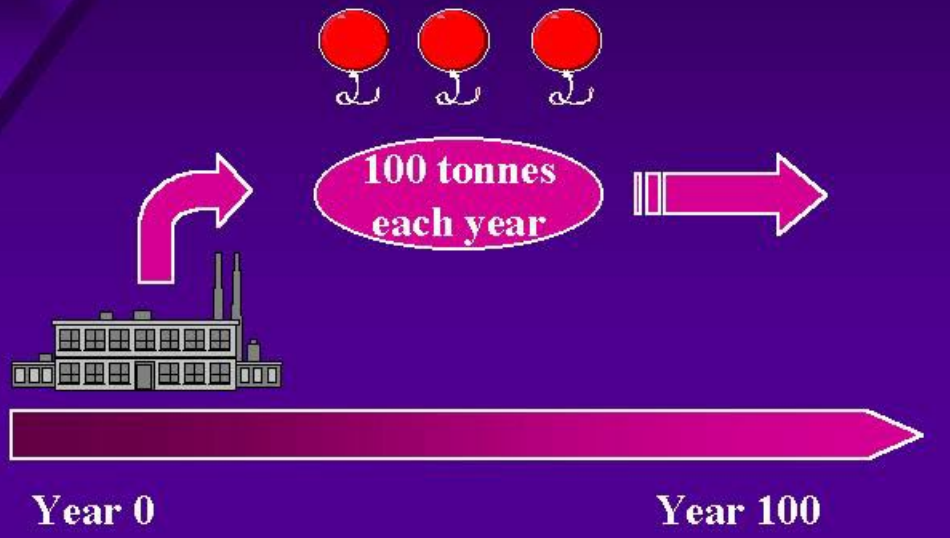
(ii) Protection and enhancement of sinks and reservoirs of greenhouse gases ….taking into account ….promotion of sustainable forest management practices, afforestation and reforestation.



“It’s great! You just tell him how much pollution your company is responsible for and he tells you how many trees you have to plant to atone for it.”

"Tonne-year" currency

Balance sheet of 1 year of emissions and storage

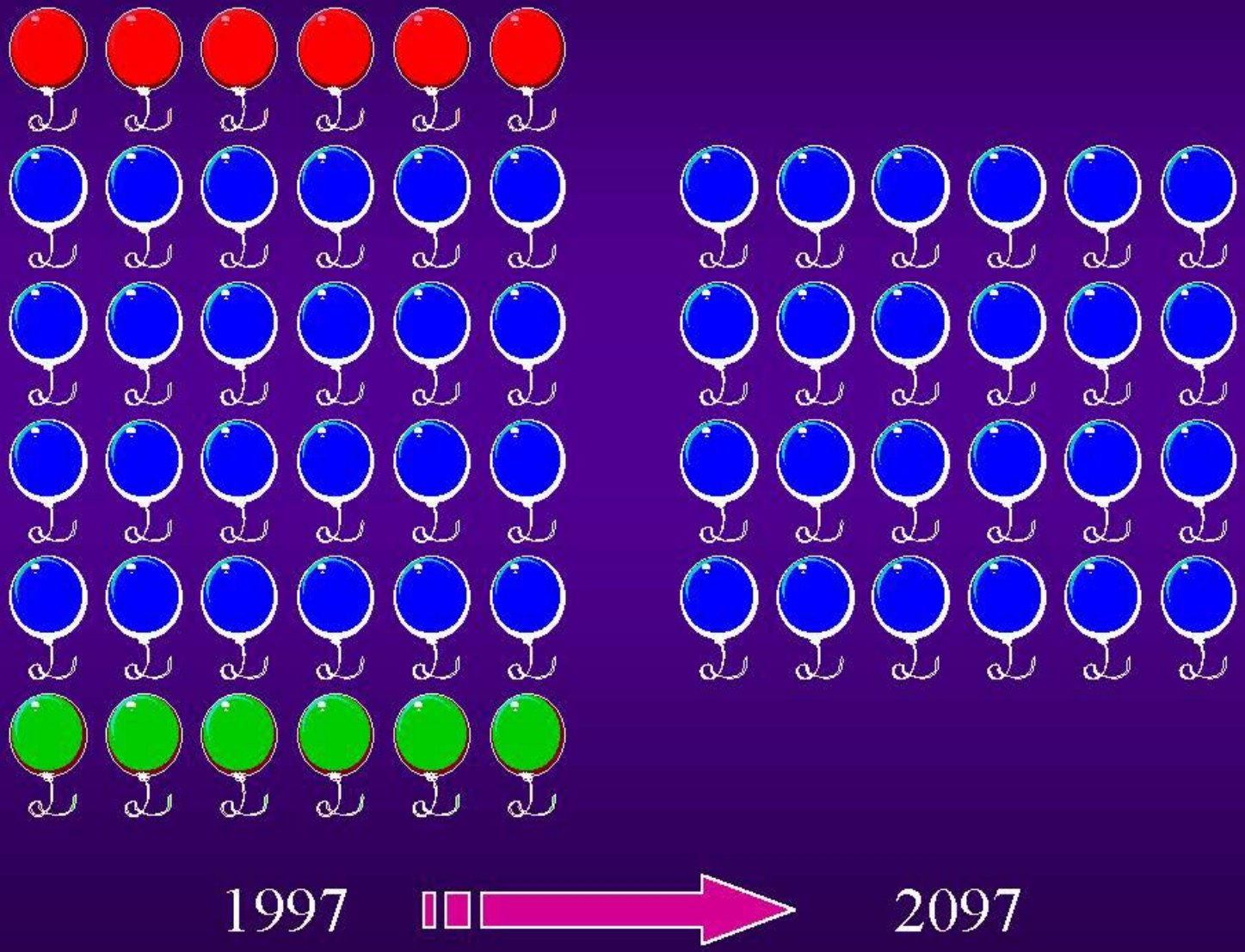


=> 100 x 100

= 10 000 tonne years

=> 290 x 35

= 10 000 tonne years


1997
2097

Estimated tonnes and Carbon tonne years produced per hectare per year

	Carbon Tonnes per year	Average Carbon storage time (years)	Tonne years
Maritime pine	**10**	**40**	**400**
Bluegum	**20**	**7.5**	**150**
Mallee Stems	**1**	**5**	**5**
Roots	**1**	**100**	**100**
Biodiversity planting	**2**	**50**	**100**

Factors determining the effectiveness of tree establishment as a method of compensating for CO_2 emissions

Cost

Land availability, on the scale required, which has climate, soils suitable for maximum production of carbon tonne years

Efficiency of planting and maintenance

Productivity of tree crops

Survival of seedlings and trees - e.g. fire risk, pests, etc.

Credibility of carbon accounting process, e.g. inventory system

The potential to integrate tree planting for carbon sequestration with other benefits, e.g. reducing land degradation, increasing biodiversity

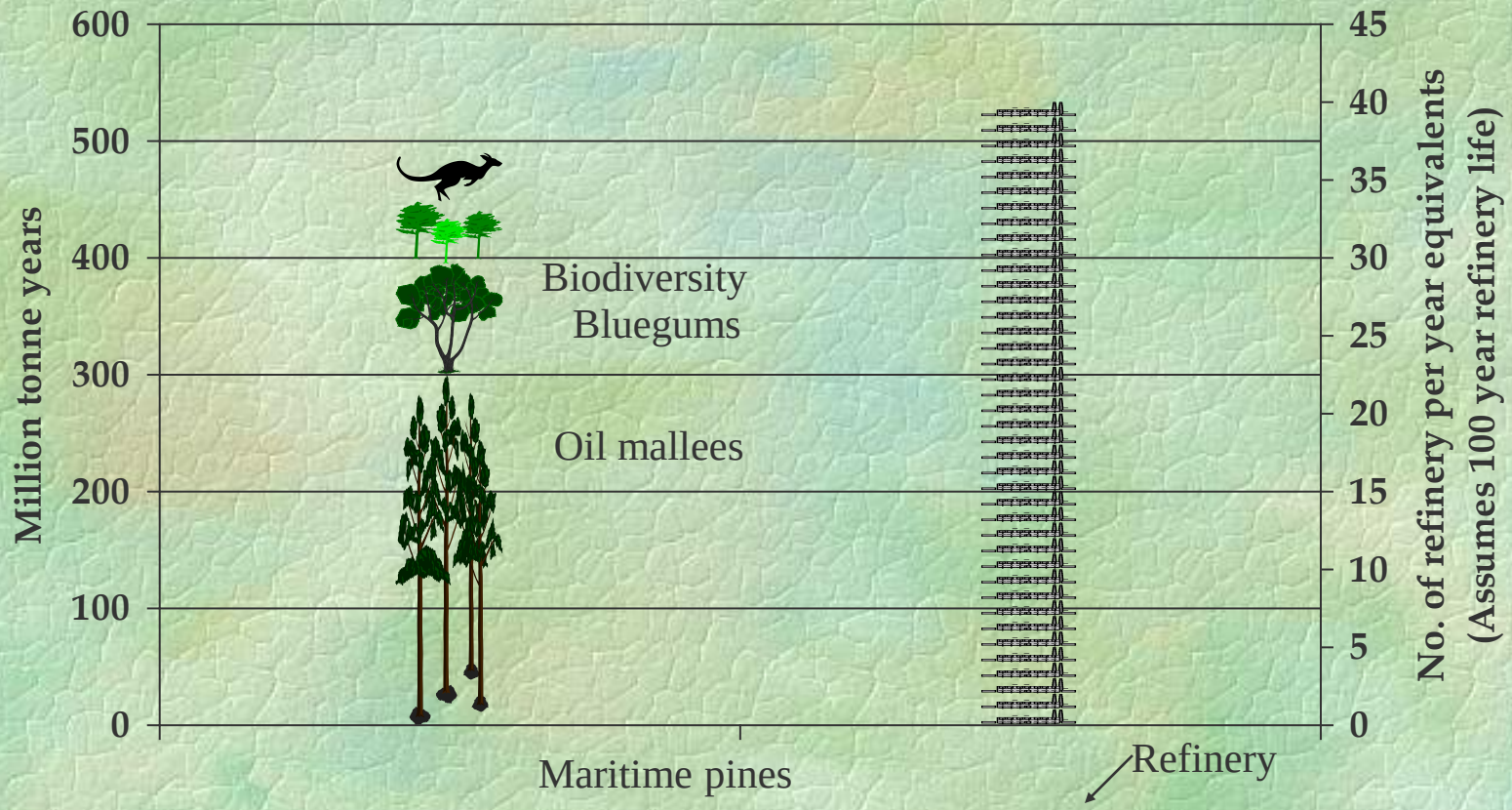
The potential to offset the cost of tree planting by the commercial returns from wood products while at the same time maximising carbon tonne year accumulation

Politics

- a political environment which is secure for long time periods
- farmer and local government support
- integration with the community and other industries based on the land

Speed

Optimistic scenario



Assumptions

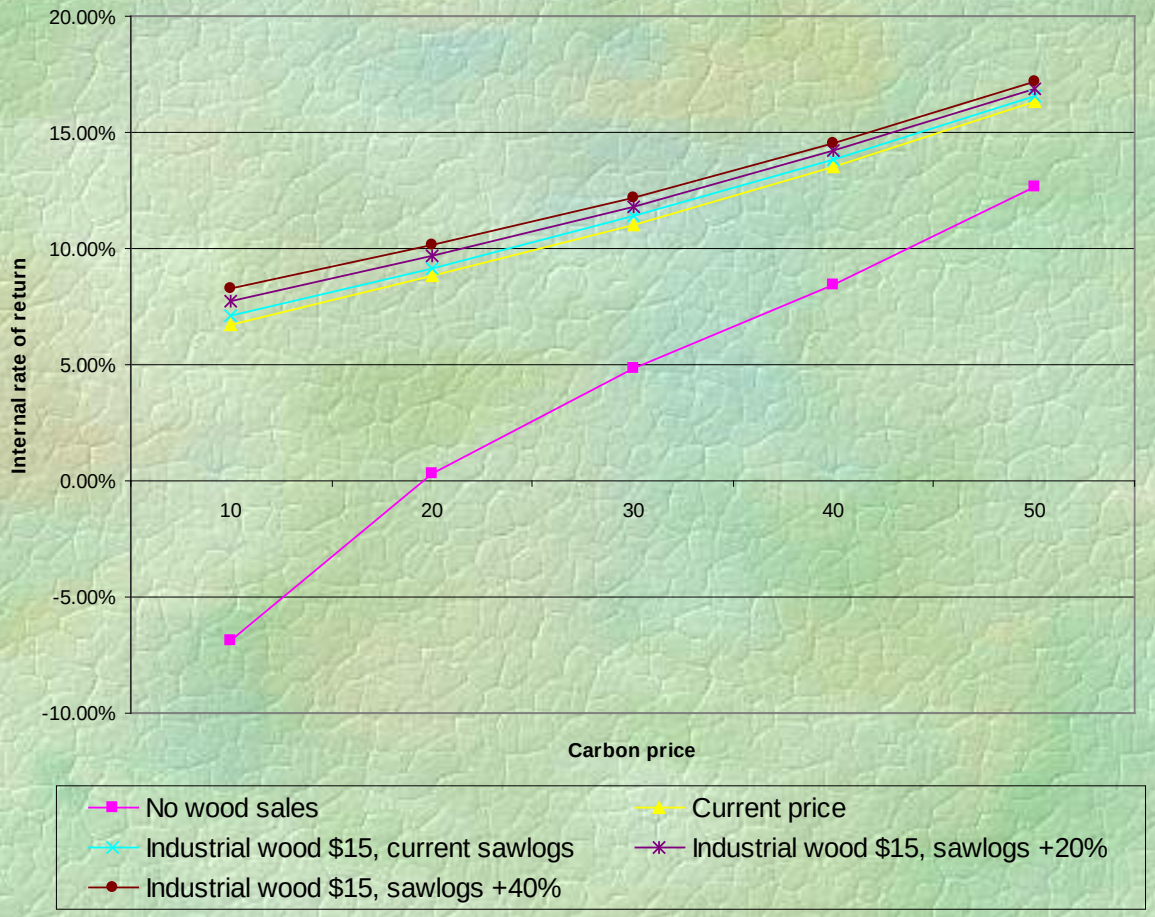
Half life of refinery,

double carbon storage times for pine, bluegum and biodiversity plantings

Effect of growth rate on the timber rate of return from a conventional regime of 30 years

Increase in stumpage over current	*Growth rate*	
	12m^3/ha/yr	*16m^3/ha/yr*
Current	5.1%	6.7%
20%	6.2%	7.8%
40%	6.8%	8.4%

Effect of varying wood and carbon price on internal rate of return for 30 year rotation



Pollution trade wins credit with power companies

JOHN MACLEAY

THE NSW Government yesterday handed two companies a licence to keep polluting under a landmark scheme that allows the buying and selling of the right to produce greenhouse gases.

Premier Bob Carr described the scheme as a market solution to an environmental problem and predicted private landholders would plant trees as "carbon sinks".

Carbon-credit trading effectively tells generators of greenhouse gases they can increase their emissions as long as they plant or buy trees. Companies that reduce their emissions substantially can trade their carbon credits with other companies.

Companies and countries are expected to jostle to acquire credits to allow them to keep polluting above the greenhouse limits set at last year's Kyoto climate-change conference.

Under the NSW deal, the third carbon trade anywhere in the world, power generator Pacific Power will buy the carbon rights to 1000 hectares of NSW State forest, while Delta Electricity is to establish 41ha of pine plantations to offset emissions from its coal-fired power stations.

But the decision to allow so-called carbon-credit trading is a leap in the dark as details of how it will work internationally, including pricing, allocations and penalties for exceeding emission targets, are not expected to be known until the next UN climate change conference in Buenos Aires this November.

Carbon credits are also likely to become a key component of futures trading, with the Chicago Board of Trade estimating the market will have an annual global turnover of between $US30 million ($49 million) to $US100 billion within a few years.

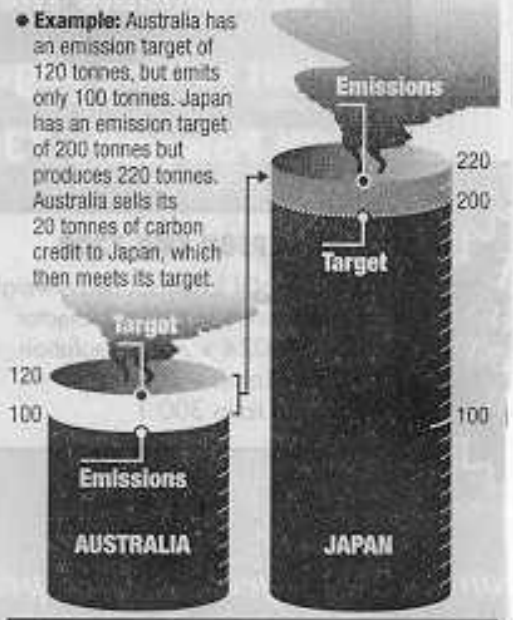
Pacific Power chief executive Peter Graham said: "The reason why we entered this is because it will reduce greenhouse gases."

He said about 2400 tonnes of carbon would be locked up in the trees during the next 12 months. The amount of carbon locked up was equal to the greenhouse emissions from the electricity supplied to 2500 suburban homes. The amount of carbon locked up under the pilot scheme was expected to grow to 10,000 tonnes a year within 10 years, before the trees were logged after 30 years.

While none of the parties to yesterday's deal would give the price of the carbon rights, private trades in the US are setting prices of about $US11 ($18) for each tonne of carbon.

HOW CARBON TRADING WORKS

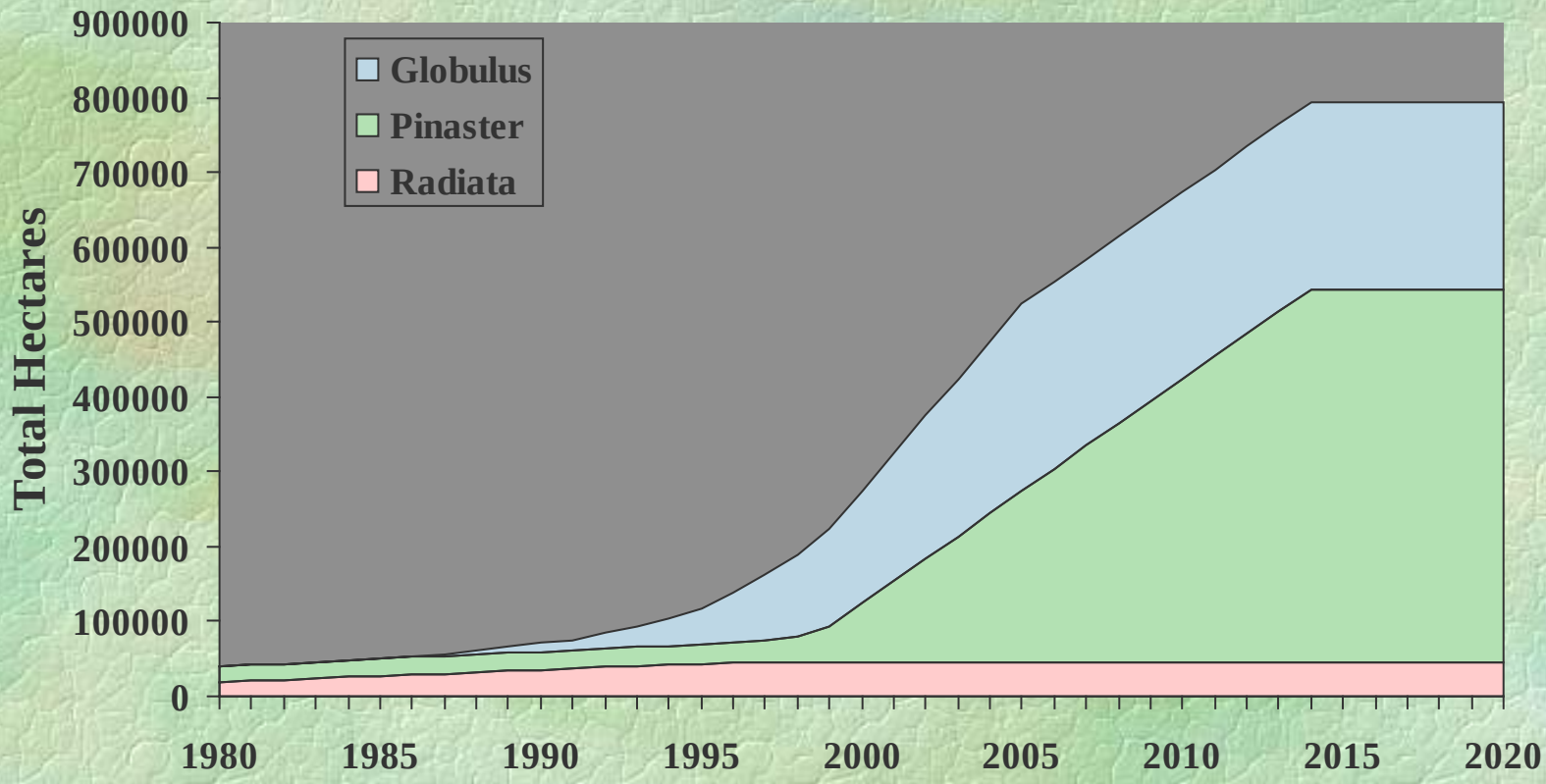
- Carbon trading allows countries or companies to buy and sell carbon credits - unused portions of their emission targets.
- A country can reduce its emissions - for example, by planting or acquiring trees - then sell carbon credits to another country that has exceeded its target so that it avoids penalties for over-emissions.
- **Example:** Australia has an emission target of 120 tonnes, but emits only 100 tonnes. Japan has an emission target of 200 tonnes but produces 220 tonnes. Australia sells its 20 tonnes of carbon credit to Japan, which then meets its target.



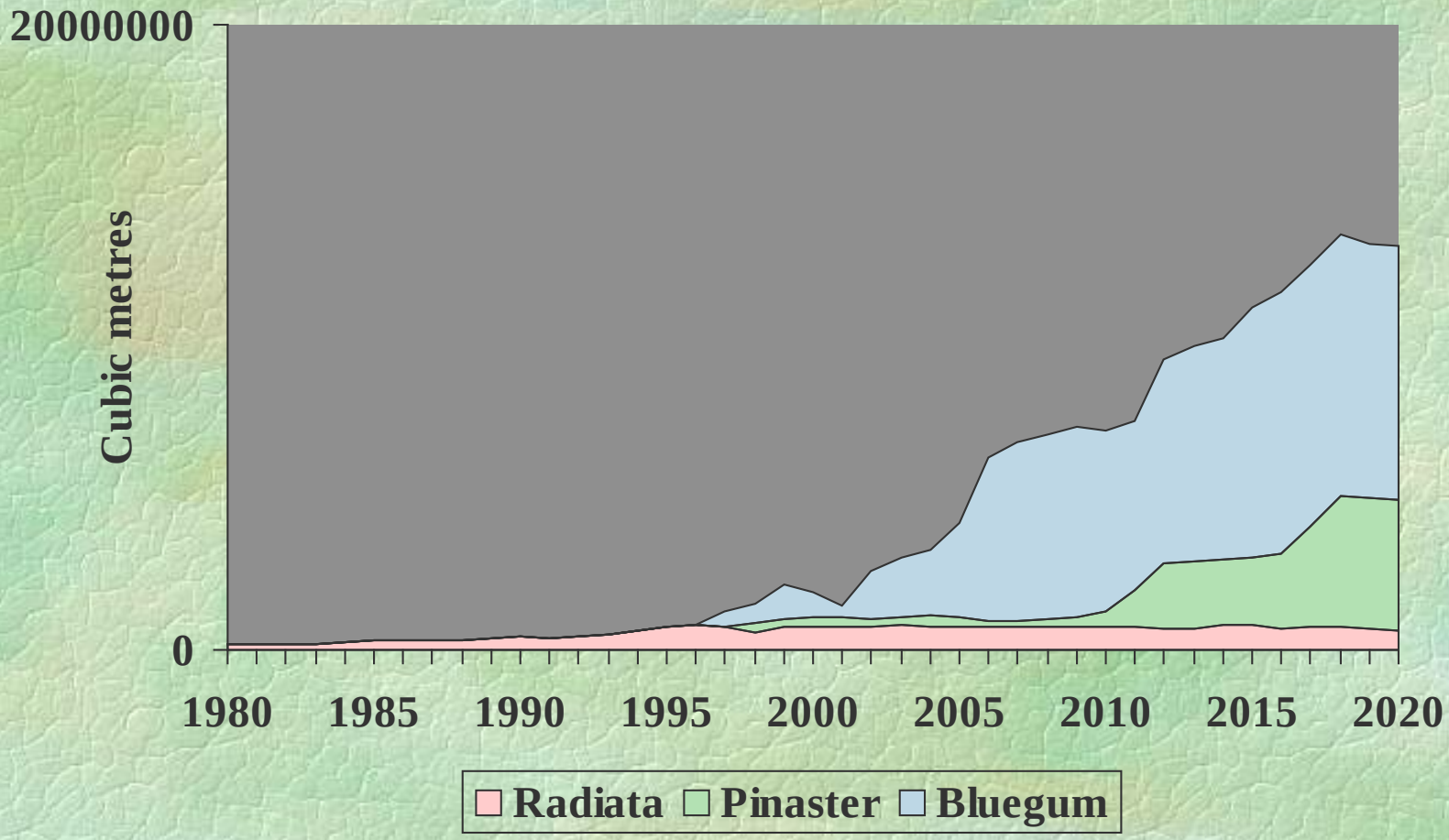
At Current Market Prices for Carbon Sequestration

Tree crops and pastoral rehabilitation could generate between $100 million - $200 million per annum

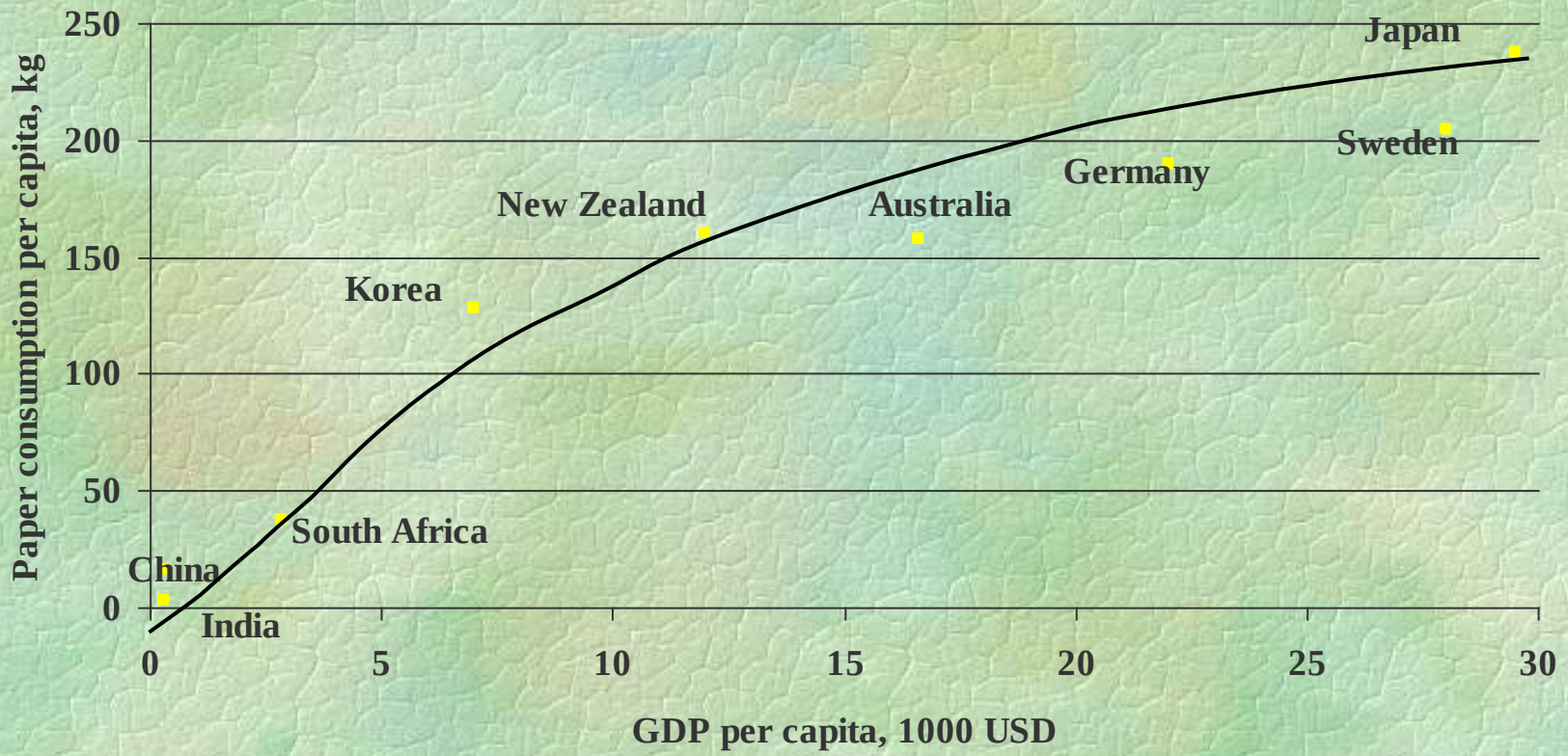
Predicted growth of tree crop plantings in Western Australia



Current and predicted wood fibre production from tree crops and plantations in Western Australia

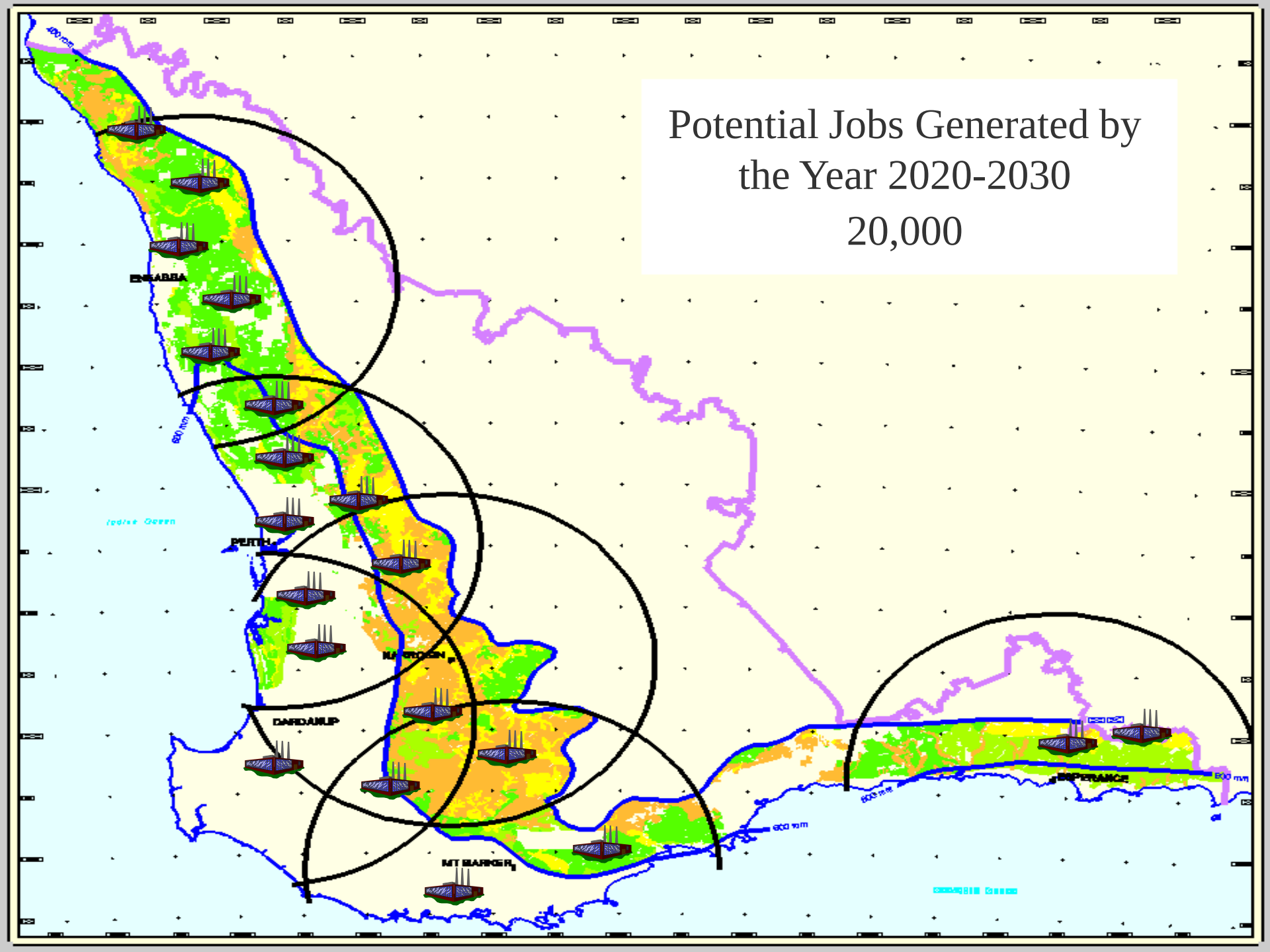


GDP and paper consumption (for selected countries in 1992)



If growth 1990-96 (12% pa) continues, China will use the current world paper demand (279 million Mt) by 2015

Source: Jaakko Poyry Dana Ltd


Potential Jobs Generated by
the Year 2020-2030
20,000
PERTH
DARDANUP
MT BARKER
ESPERANCE

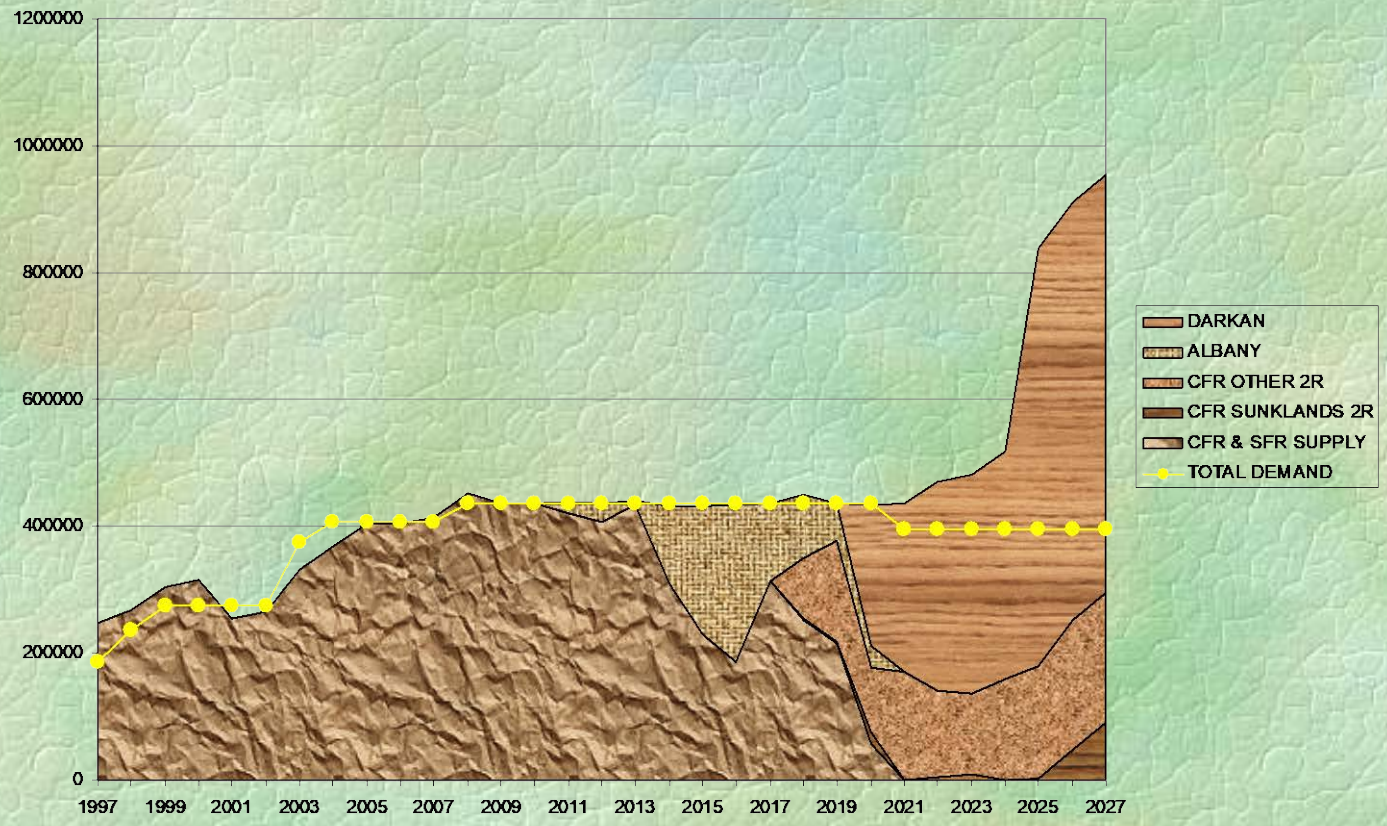
Proposed Softwood Resource Allocation

1. Exchange Whittakers nominal allocation of 1.3 cubic metres for karri regrowth resource.

2. Fulfil existing large sawlog contractual requirements to Wespine and make provision for extending the Wespine contract beyond the year 2012.

Chart of Supply vs Demand of large sawlogs in Central Forest Region, Southern Forest Region, Darkan and Albany

(note: second rotation CFR assumes all State forest and 50% of Executive Director land planted)



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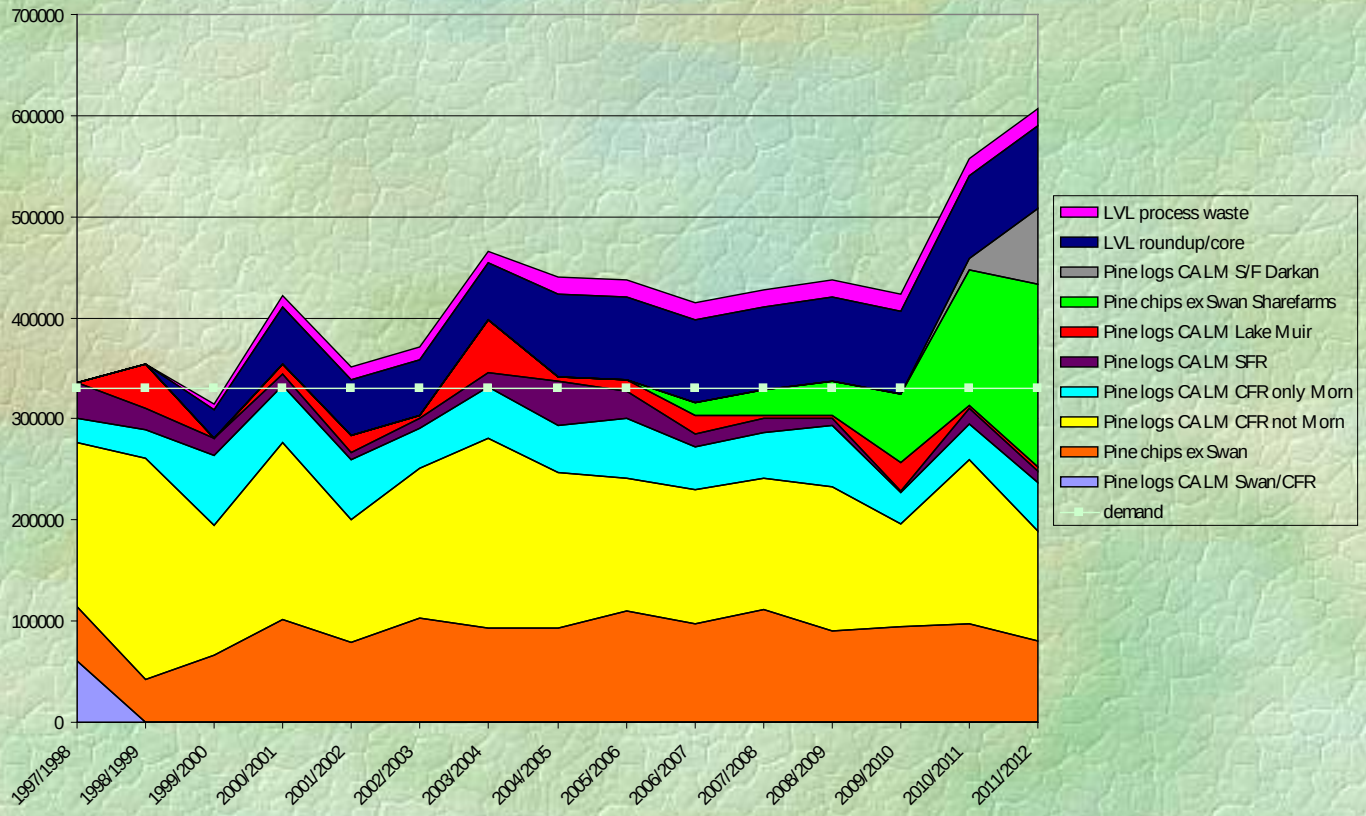
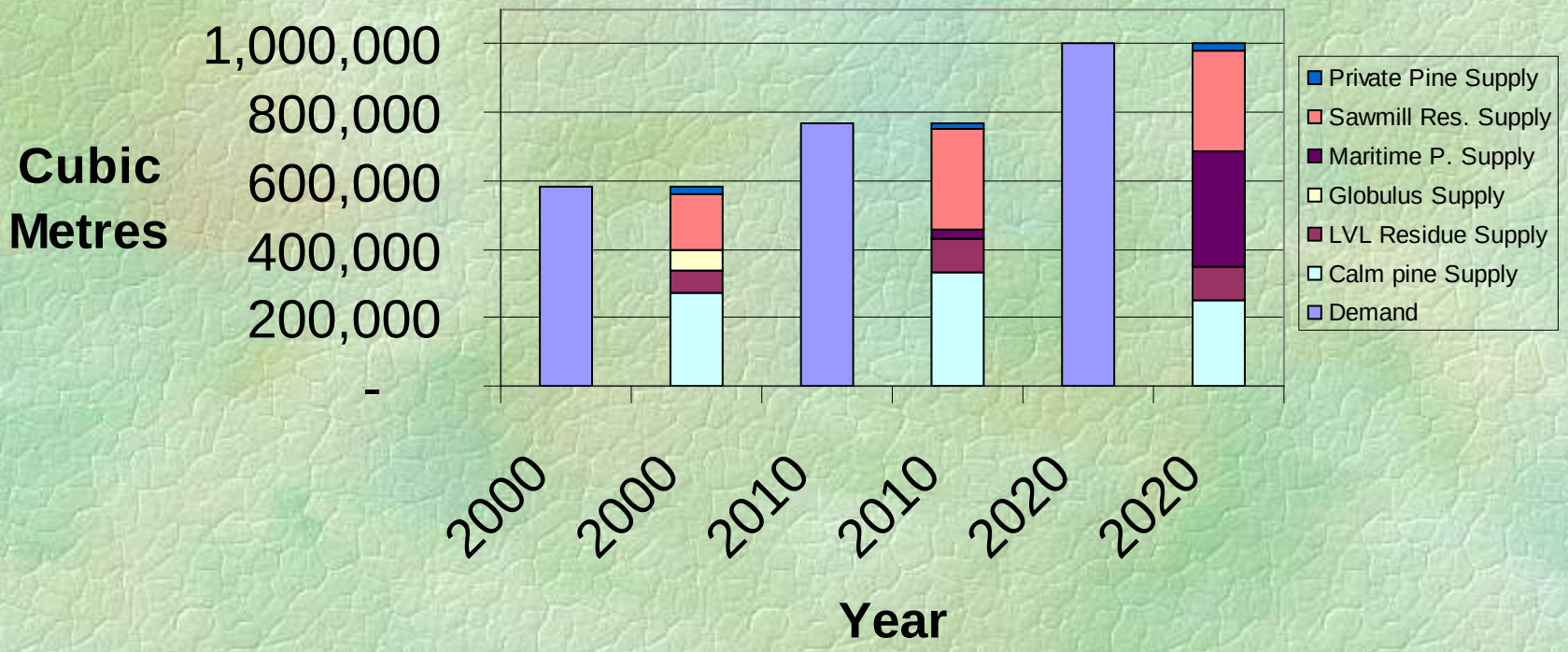
3. Allocate 205,000 cubic metres to allow the construction of laminated veneer lumber plant.

Industrial Wood By CALM



Wesfi Industrial Wood Average Annual Demand and Supply



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3. Allocate 205,000 cubic metres to allow the construction of a laminated veneer lumber plant.

4. Provide for expansion of Wesfi's particleboard and medium density fibreboard factories by provision of residue from the LVL plant and additional industrial pine and globulus resource.

5. Investigate the potential to establish a medium density fibreboard plant in the Mt Barker region based on softwood resource established by CALM.