

# **The present position on the maritime pine project and its relation to salinity and carbon sequestration**

Presented By:

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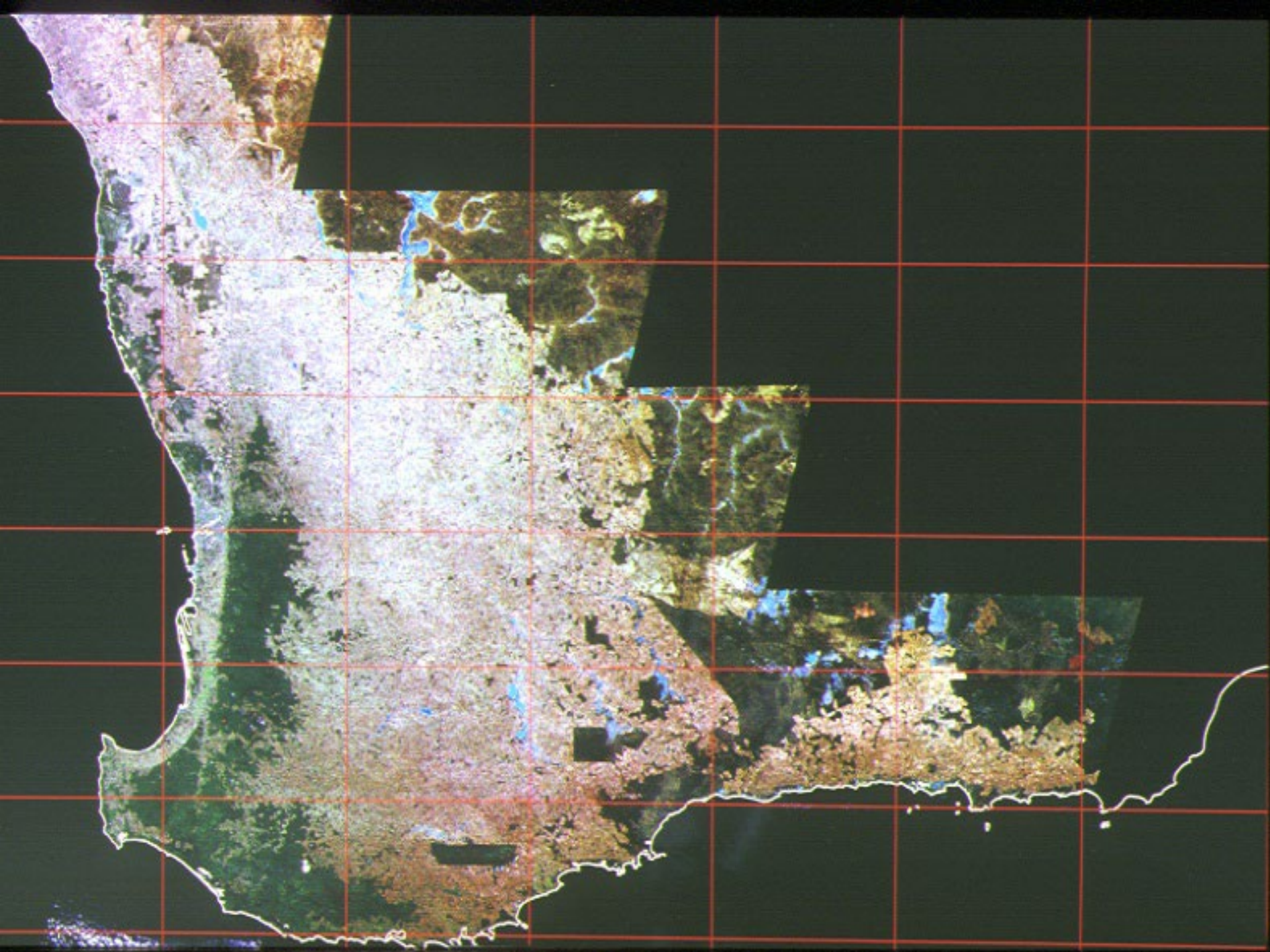
Acting Executive Director

Department of Conservation and Land Management, Western Australia

CALM Senior Officers, Mandurah

5 November 1998









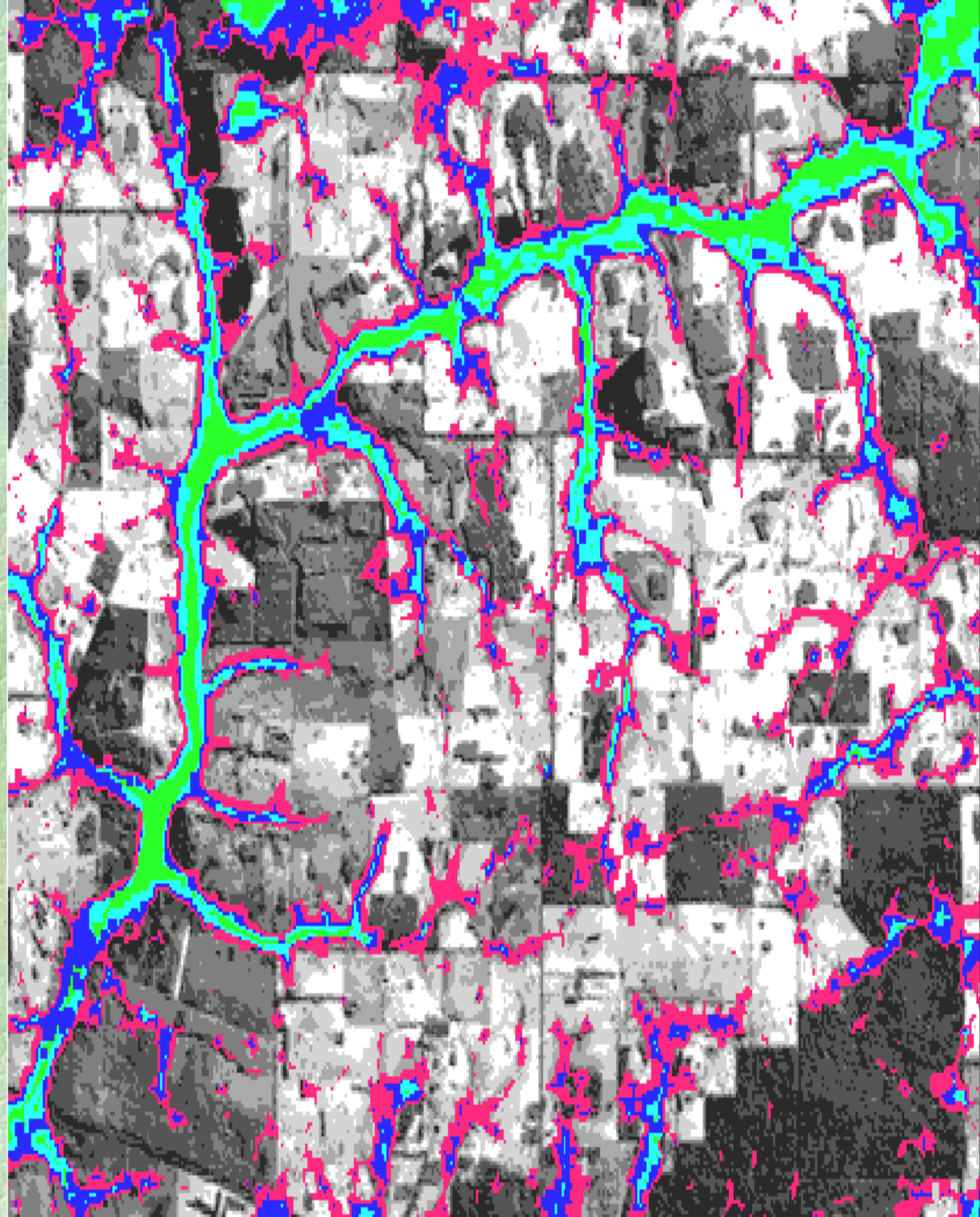








# Satellite imagery and salinity





# Estimated areas affected by salinity in 1994, 2020 and potential at full development

Region	Total Area 000ha	Salt affected 1994		Salt affected 2020		Potential area	
		000ha	%	000ha	%	000ha	%
South Coast	4 079	395	9.7	688	16.8	977	24.0
South West	3 310	274	8.3	596	18.0	820	24.8
Swan-Avon	7 591	759	10.0	1 290	17.0	3 035	40.0
Northern	4 252	376	8.8	723	17.0	1 276	30.0
<b>Total</b>	<b>19 231</b>	<b>1 805</b>	<b>9.4</b>	<b>3 296</b>	<b>17.1</b>	<b>6 111</b>	<b>31.8</b>

From Ferdowsian *et al.* 1996



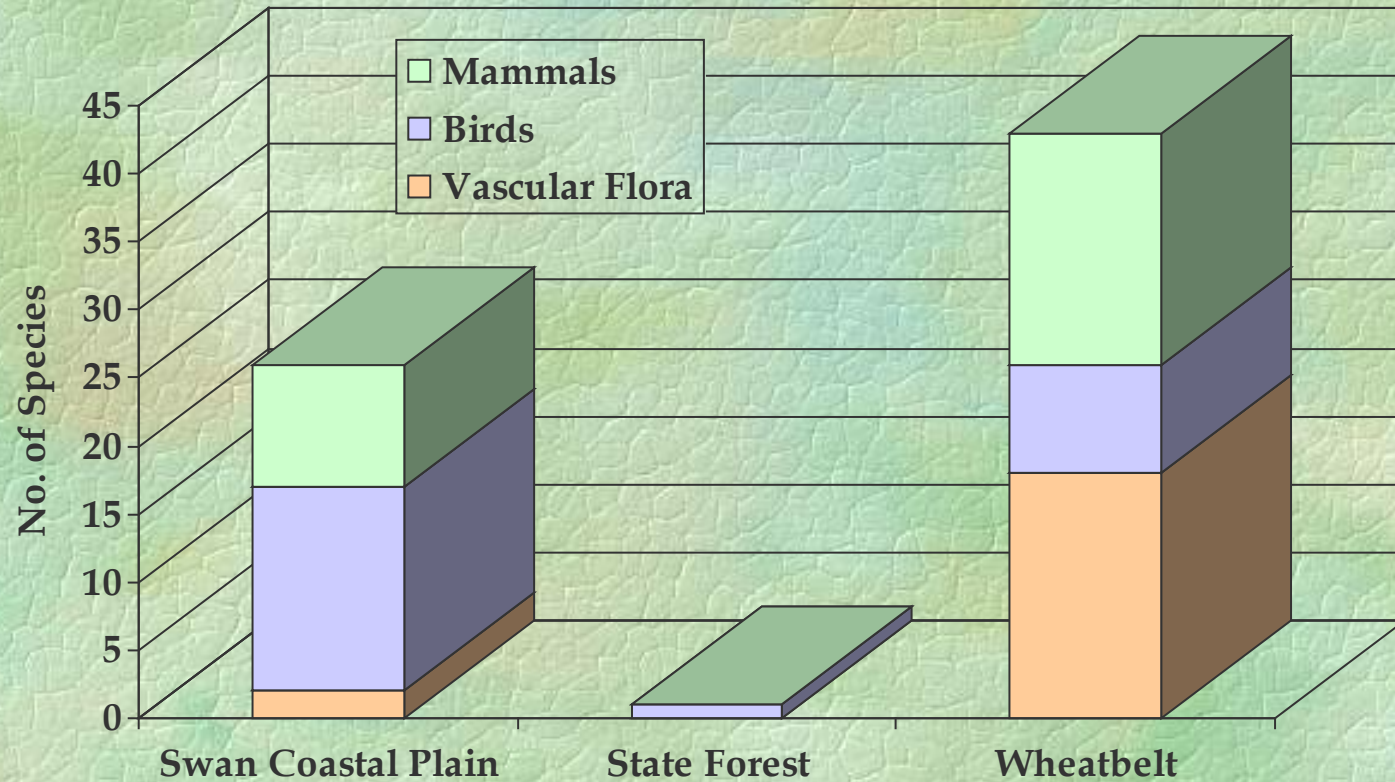






# Species extinctions since European settlement in 1829

(After Armstrong and Abbott, 1995)





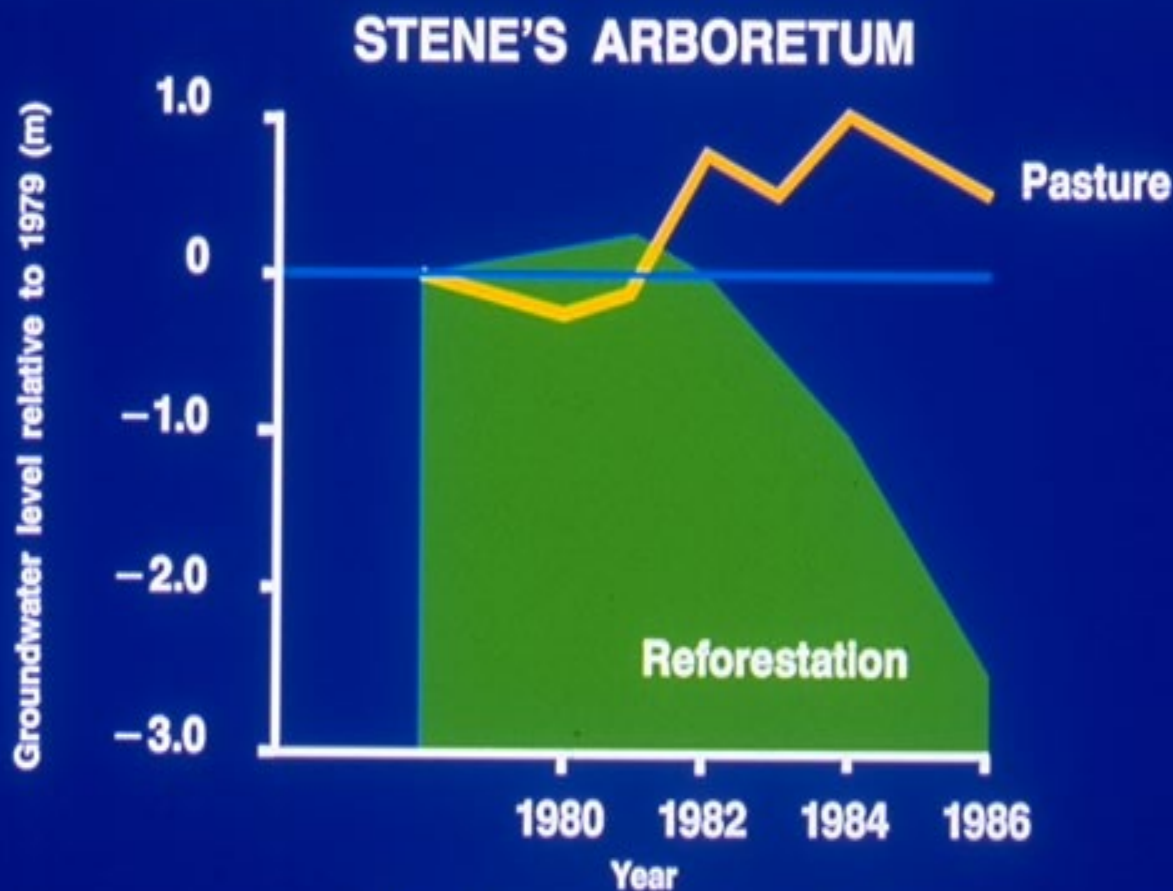








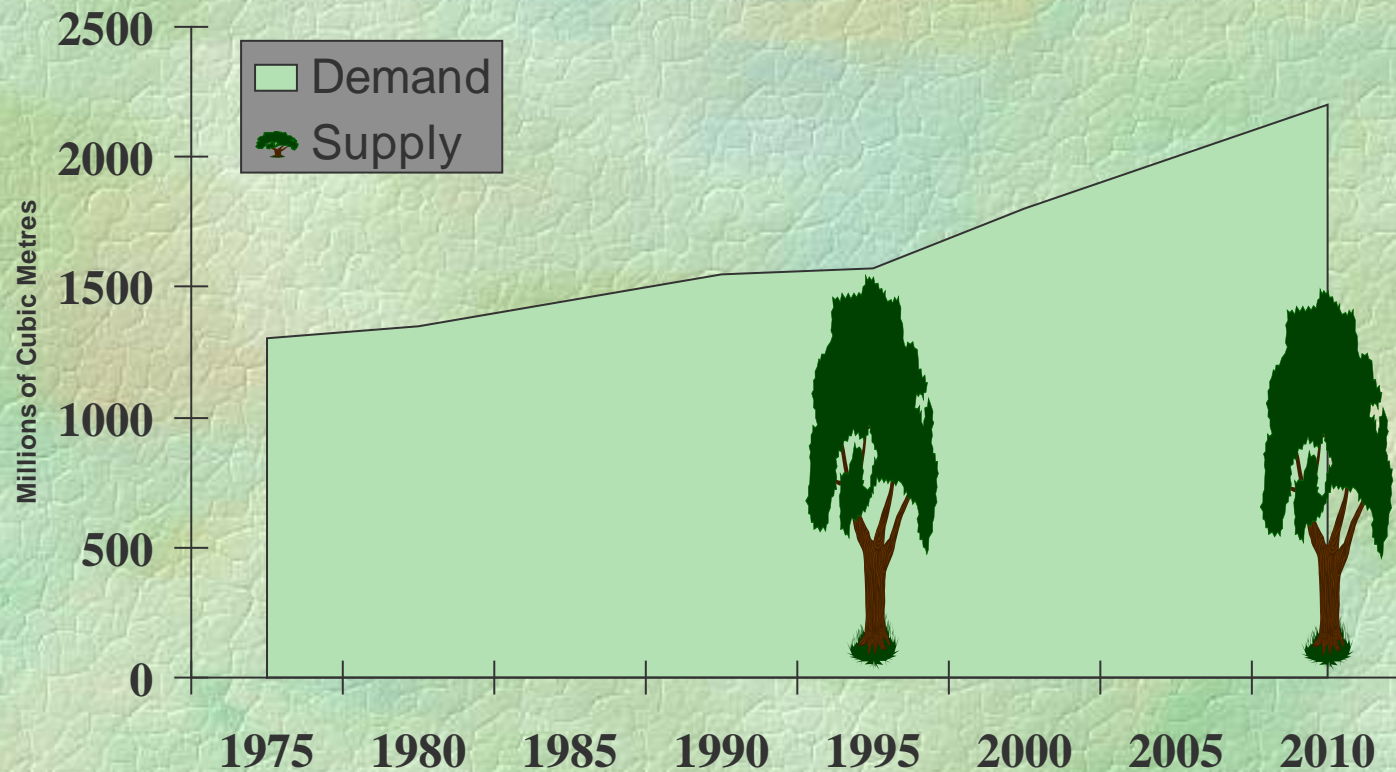
# THE EFFECT OF TREE CROPS ON WATER TABLE LEVELS



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



# Global wood demand rises as supply falls



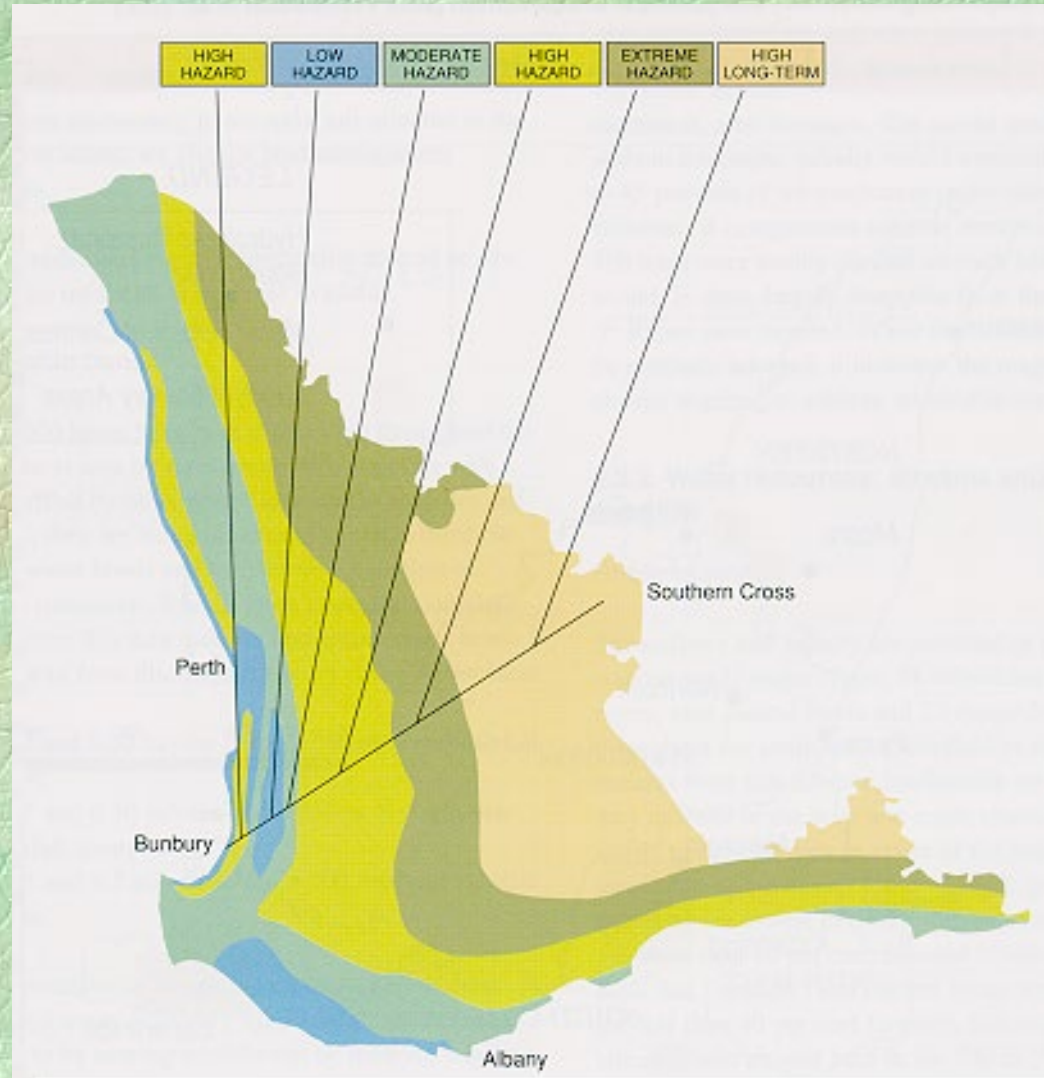
Sources: D A Neilson, UN FAO, Apsey & Reed, Jaakko Poyry, Widmans World Wood Reveiw, Xylem Investments Inc







# Salinity hazard zones in the South-west





# Farm forestry zones by area and rainfall

<b>Farm forestry zone</b>	<b>Rainfall</b>	<b>Area (in million ha)</b>
<b>Traditional pine and new bluegum</b>	>600 mm	2
<b>New martime pine</b>	400 to 600 mm	6
<b>Wheatbelt</b>	<400 mm	10



























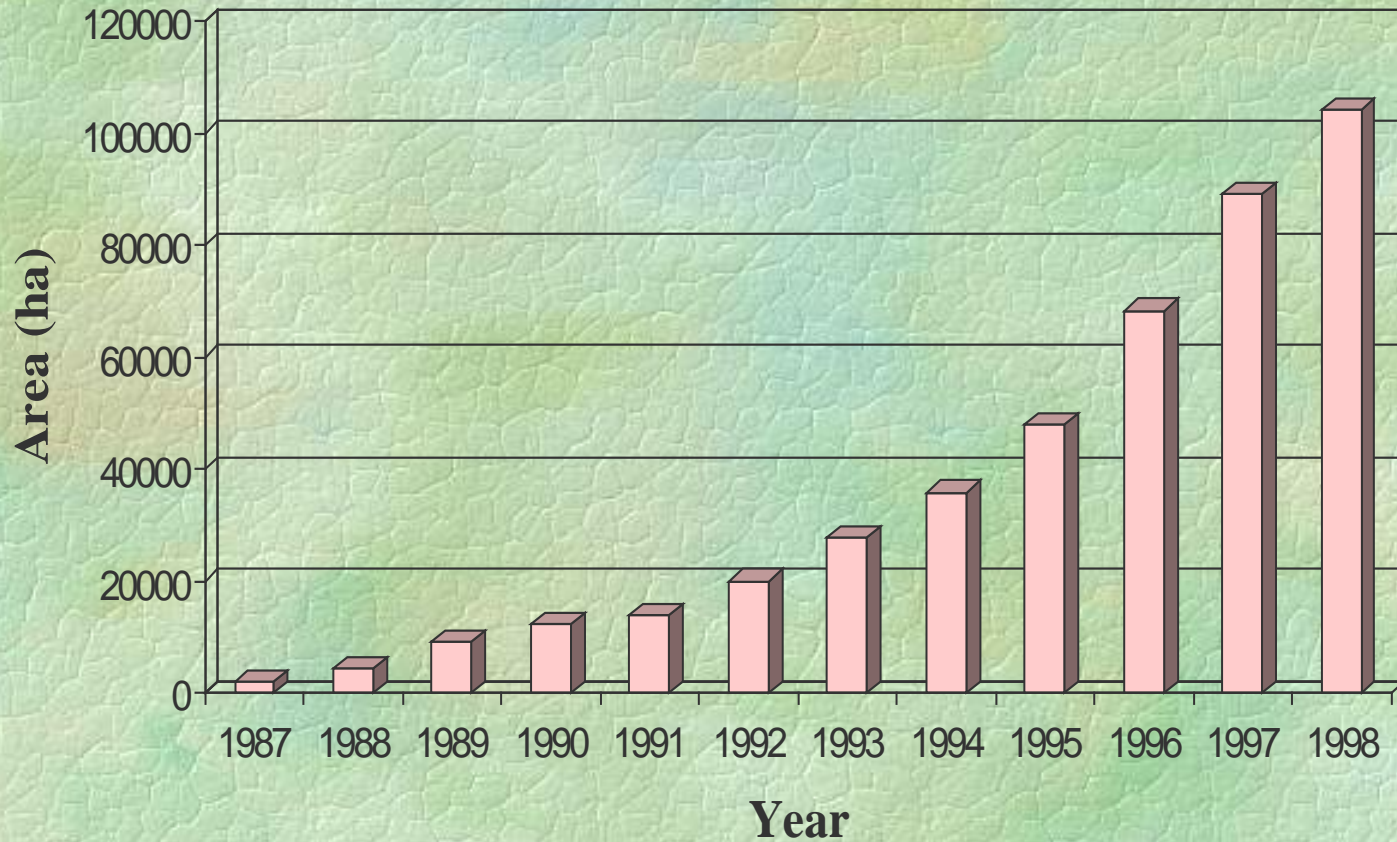








# Bluegum plantation development on private land since 1987





# **- Carbon Sequestration - Science and Governance**



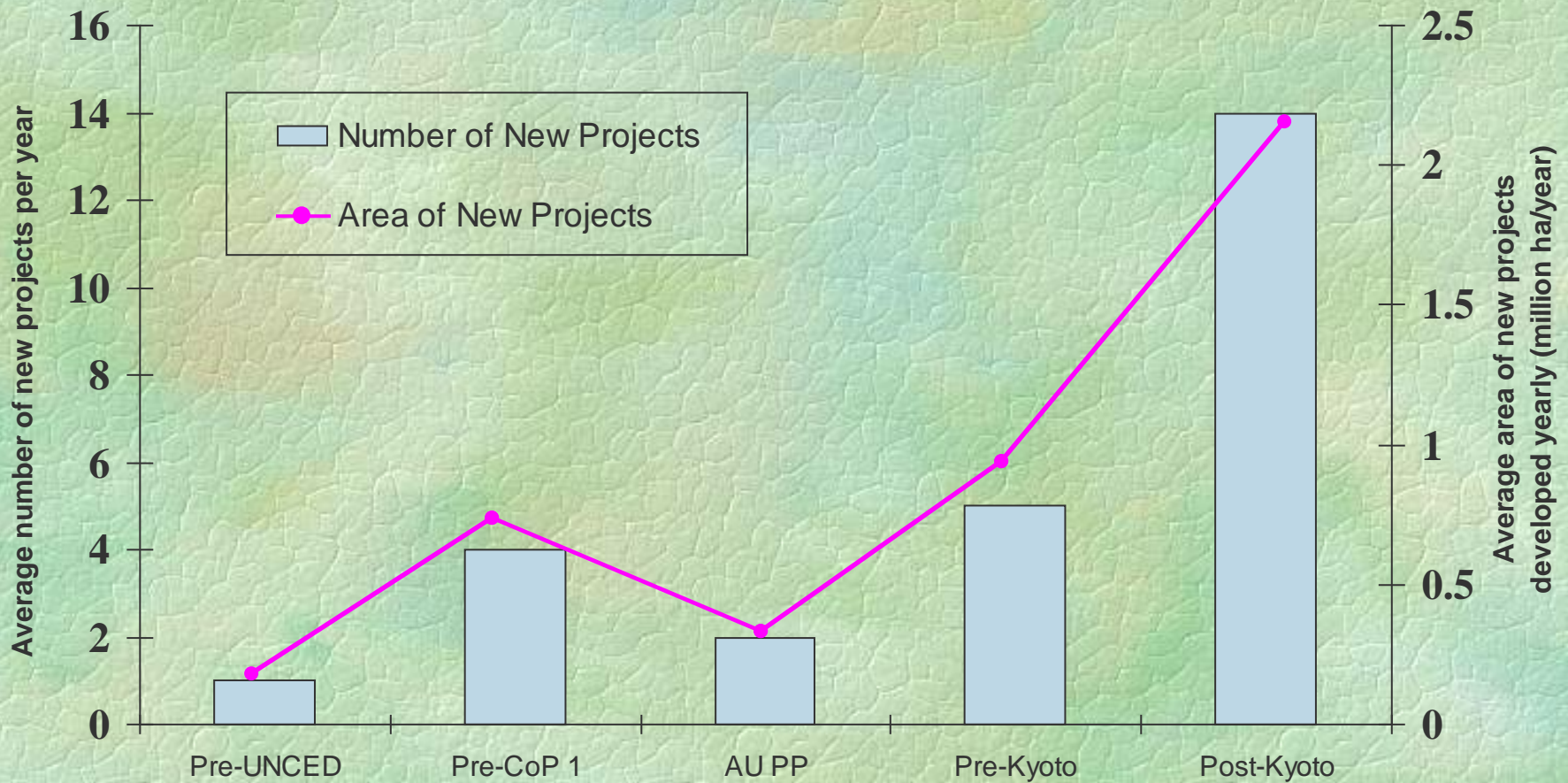


# Australia's Kyoto Targets

Current proposed resource projects in Western Australia could consume Australia's allowable growth in emissions of approximately 40 million tonnes of CO<sub>2</sub>.



# Carbon Sequestration Projects





# Australia's Kyoto Targets





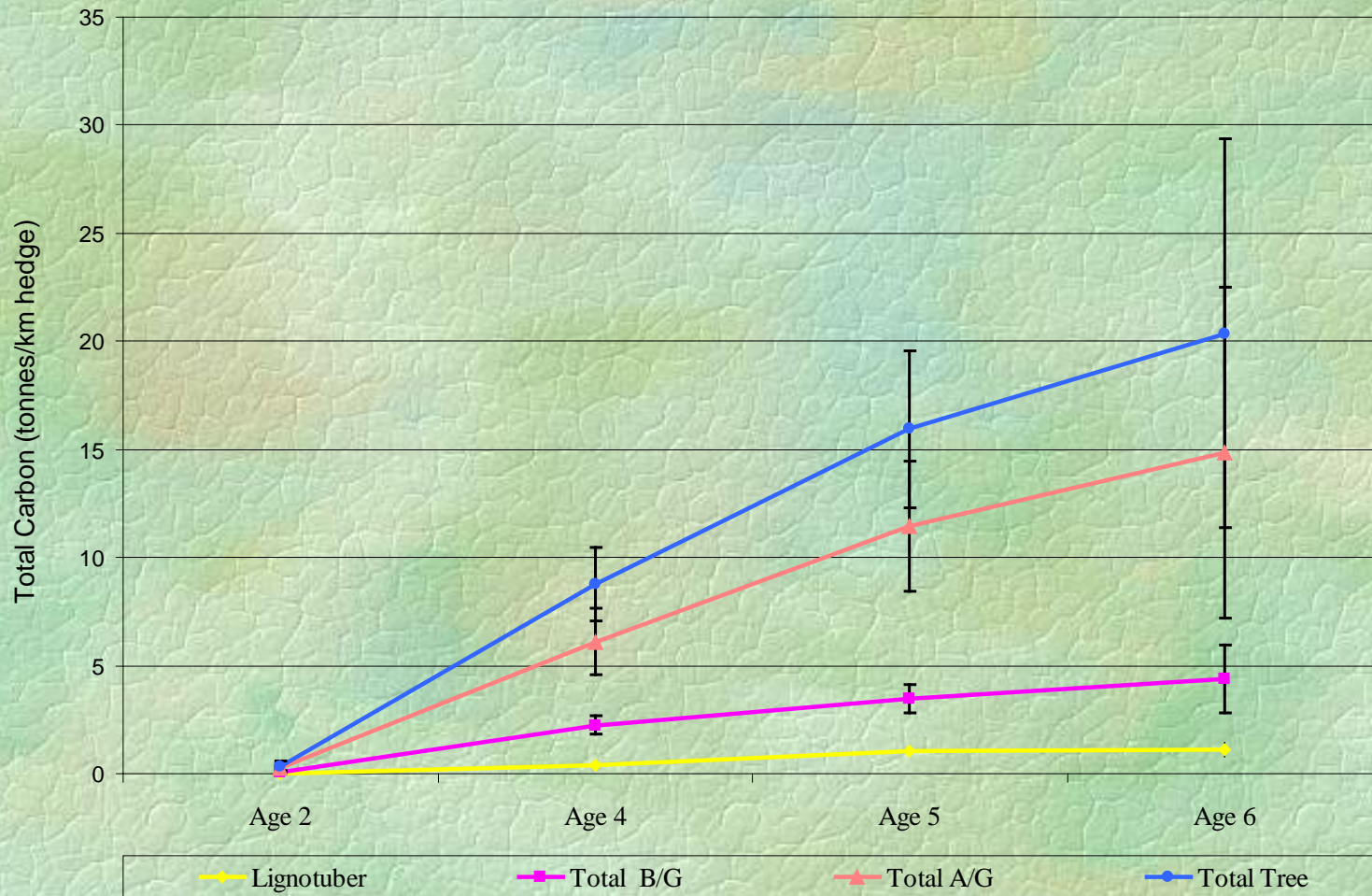
# **- Measuring Carbon Sinks -**





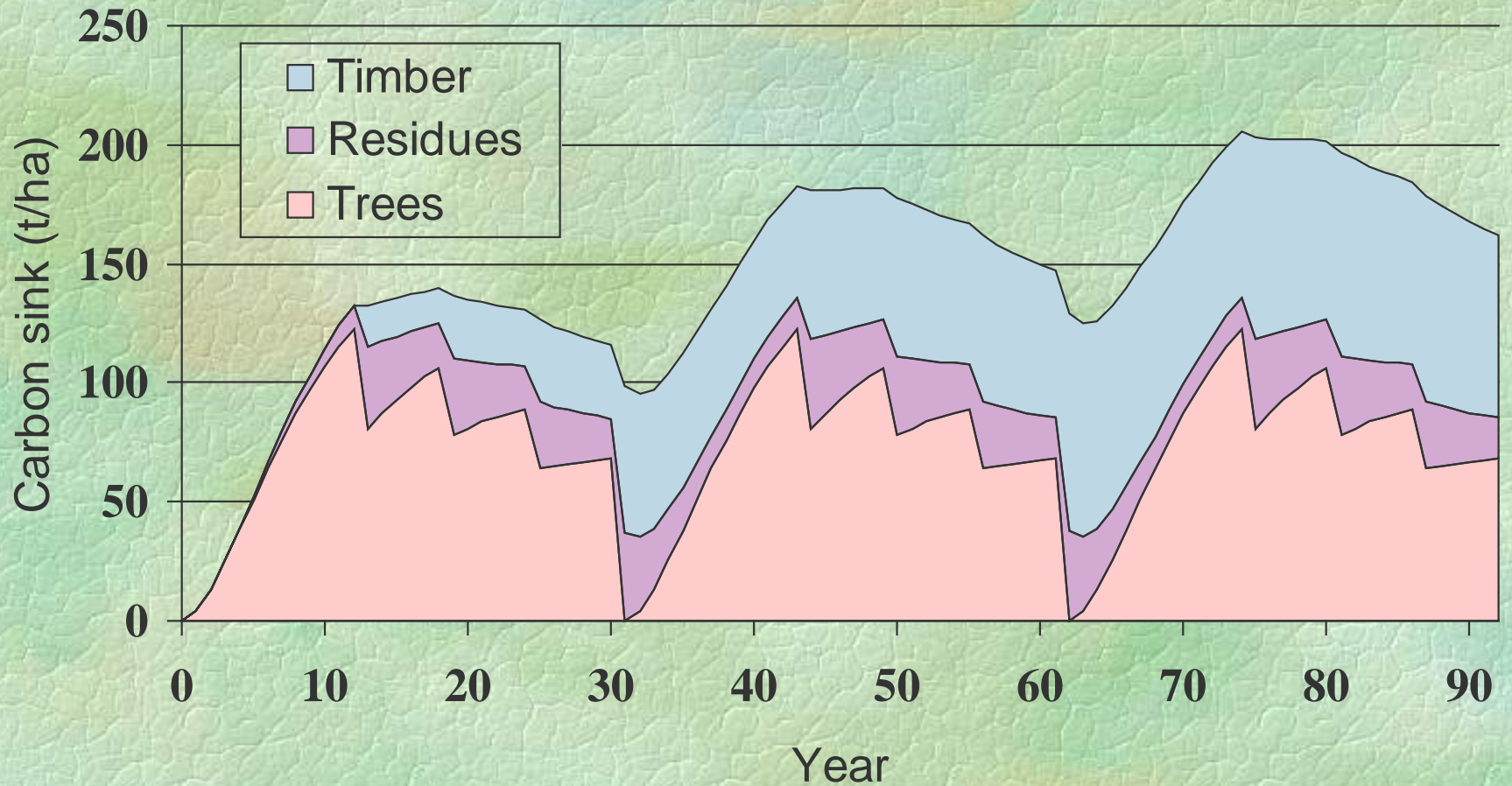


# Total carbon per kilometre of hedge for *Eucalyptus plenissima* for different ages and tree components with standard deviation





# Carbon sinks from Maritime Pine

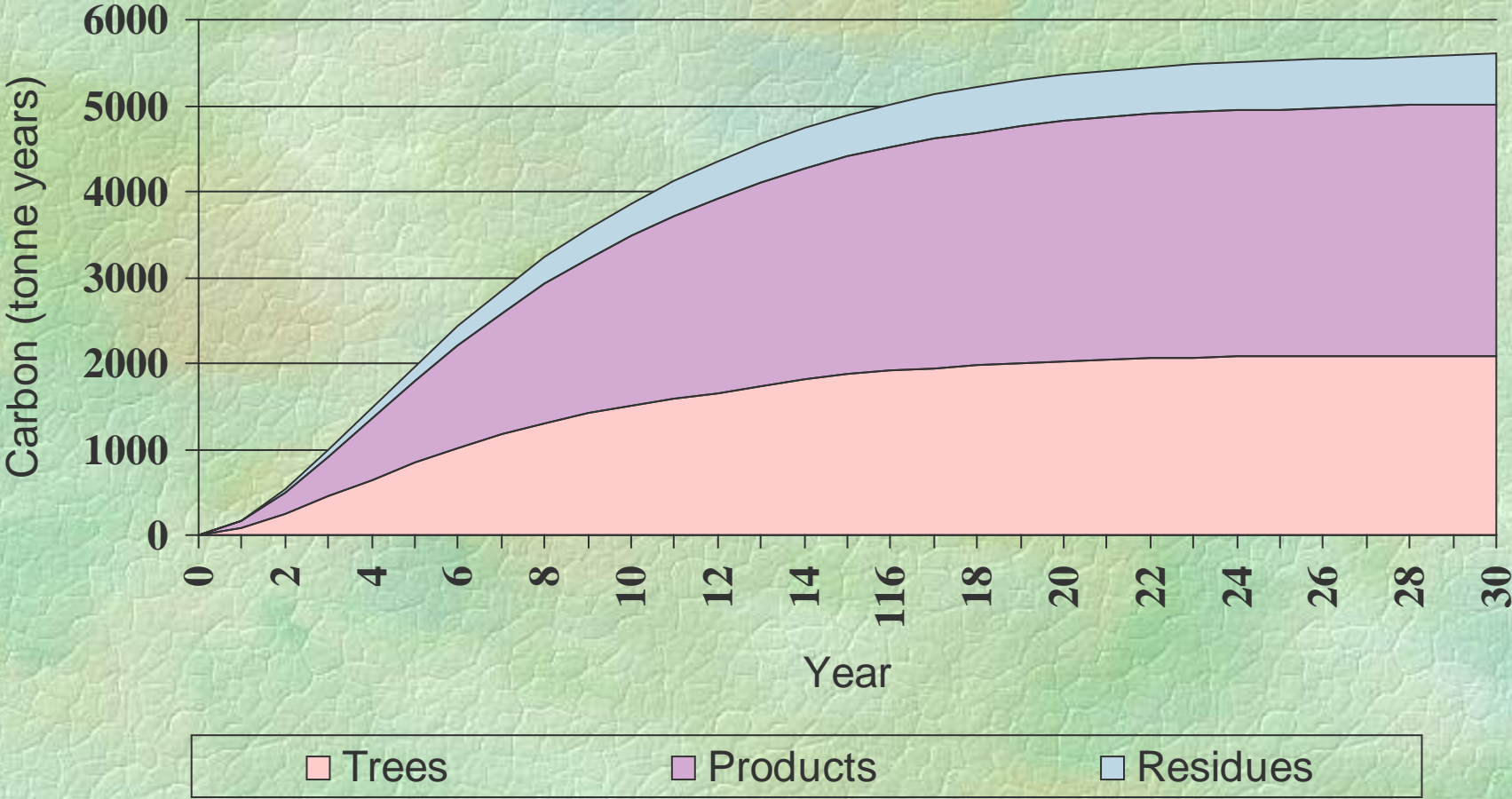




**- Carbon Sequestration  
Measured in Carbon-Years -**

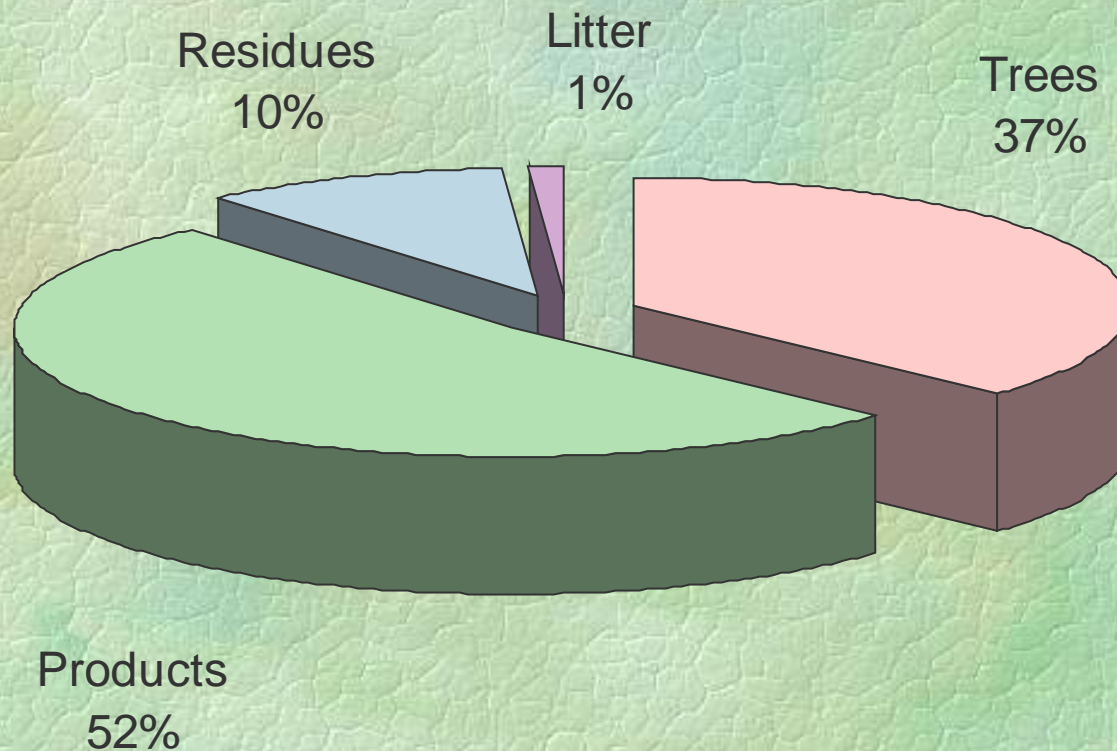


# Cumulative carbon storage for one hectare of Maritime Pine (tonne years)



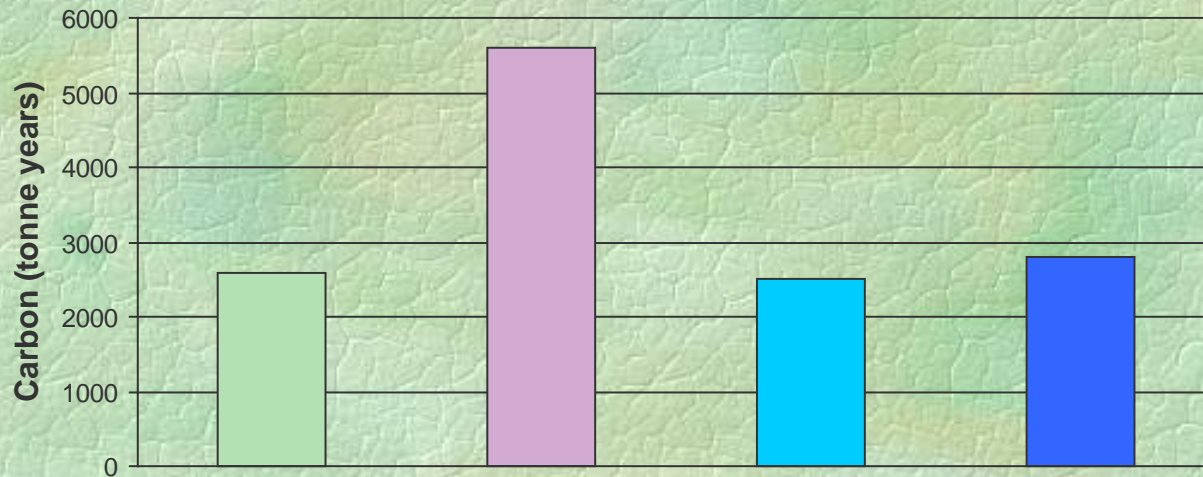
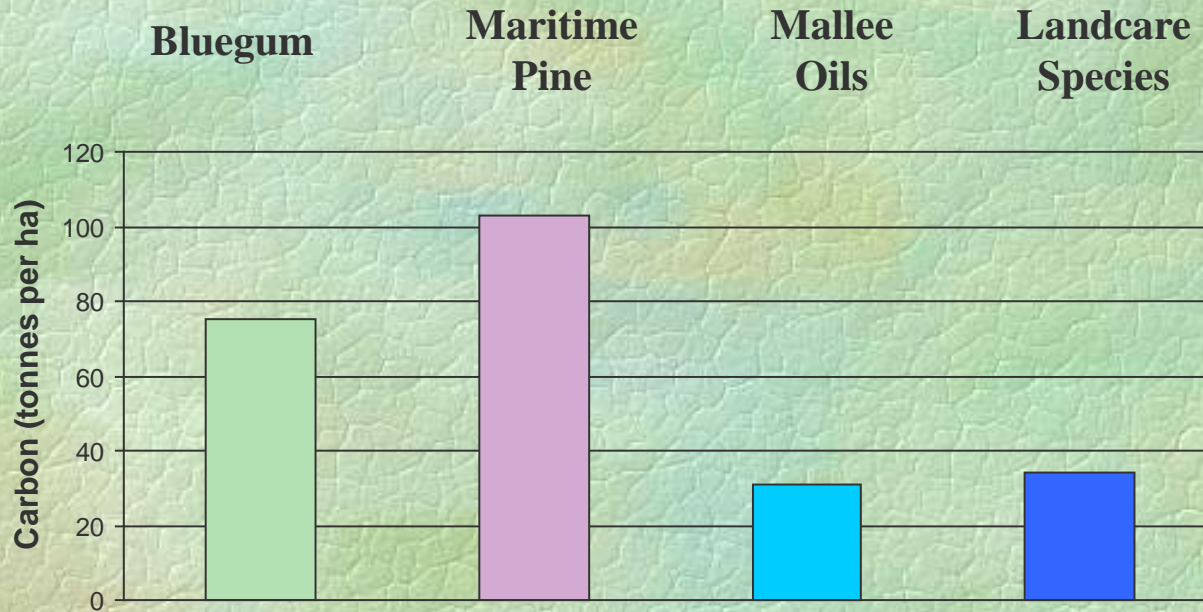


# Contribution of each pool to carbon storage (tonne years) for one hectare of *P. pinaster*





# Carbon Sinks for Different Species





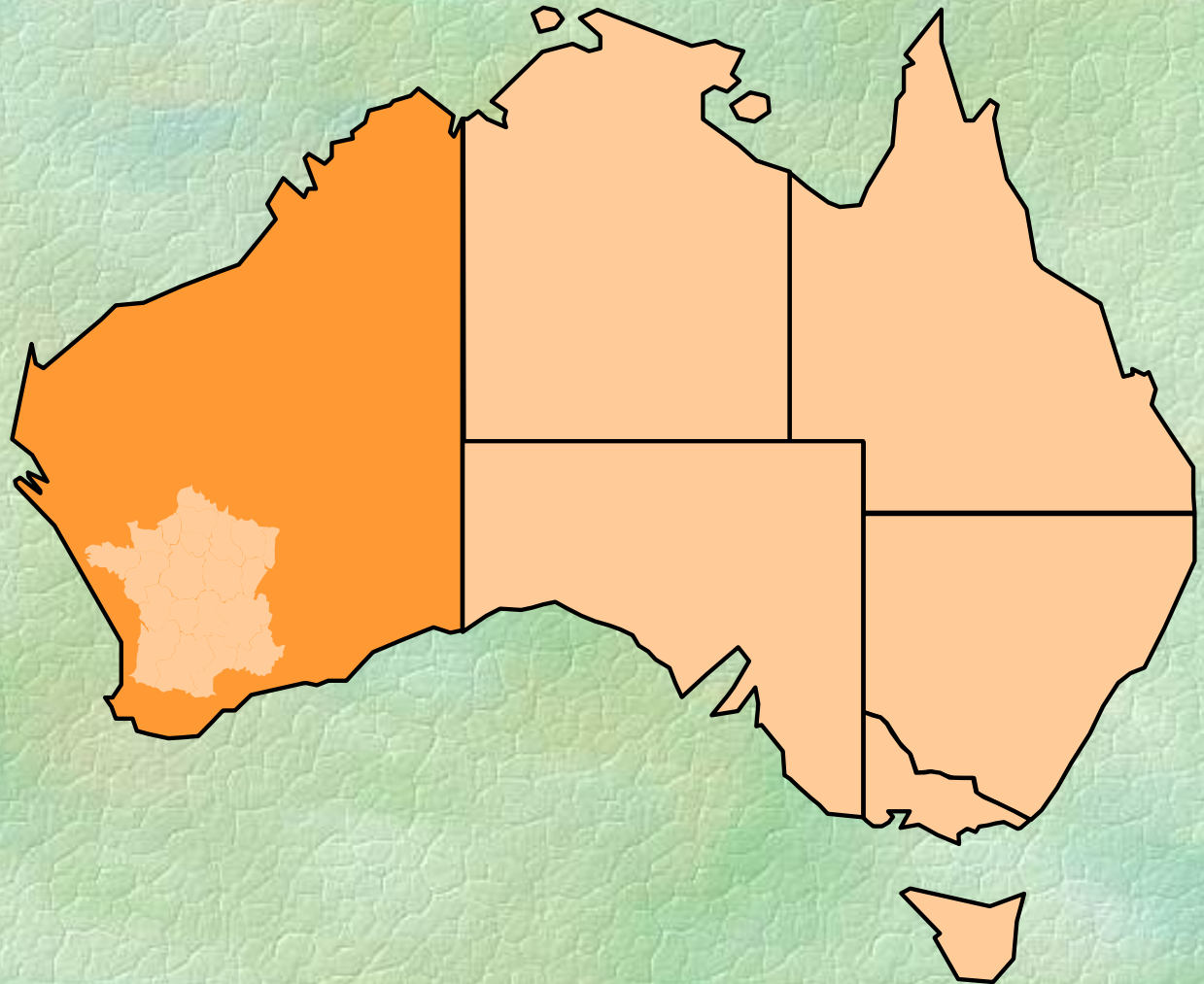
**- Critical Elements of Carbon  
Sequestration Strategies -**



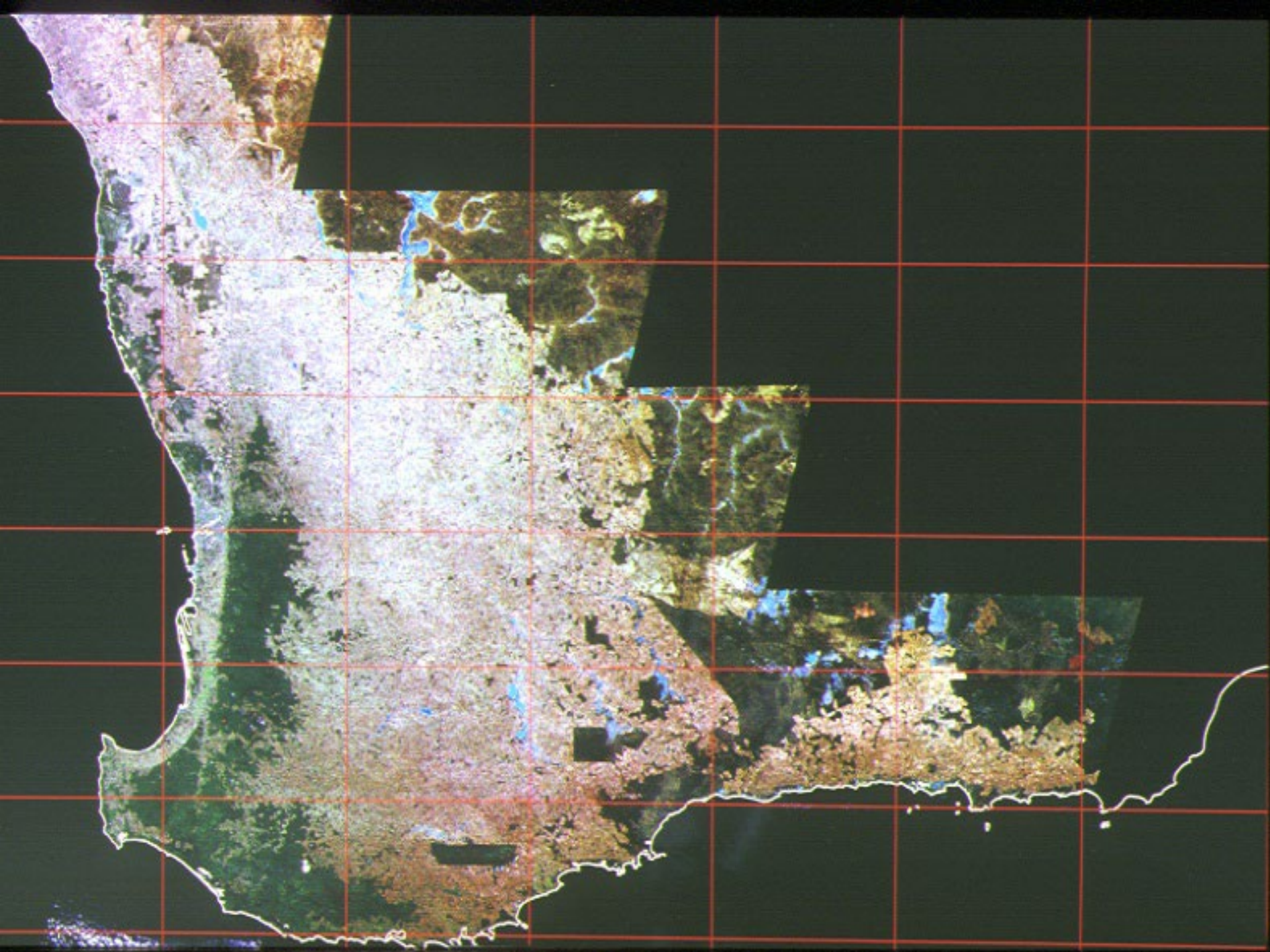
# *Land Availability*



**France  
occupies a  
land area  
about a  
quarter  
the size of  
Western  
Australia**









# Land use in the south-west of Western Australia

<b>Land use</b>	<b>Area million ha</b>	<b>% of area within the agricultural region</b>
Agricultural region (>250 mm rainfall)	5.25	100.0
Private land	20.73	82.0
Private land under agriculture	17.98	71.2
Private with original native vegetation	2.75	10.9
Public land (State forest, reserves, parks)	4.52	17.9





**CALM has joint ventures with 1500 farmers**



**CALM has contracts with 84 land management contractors**









*Integration with Environmental  
and Economic Objectives*



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

