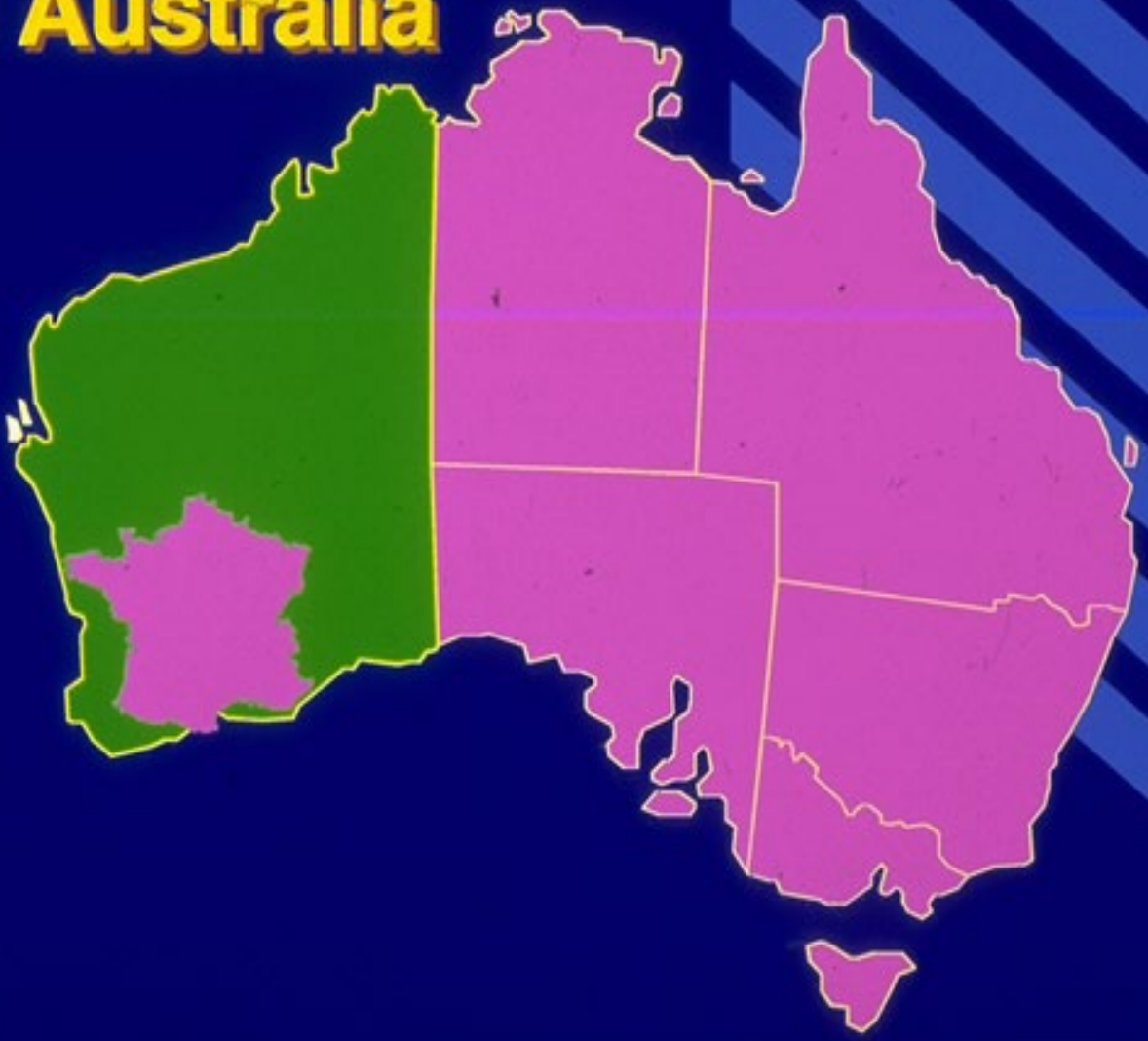
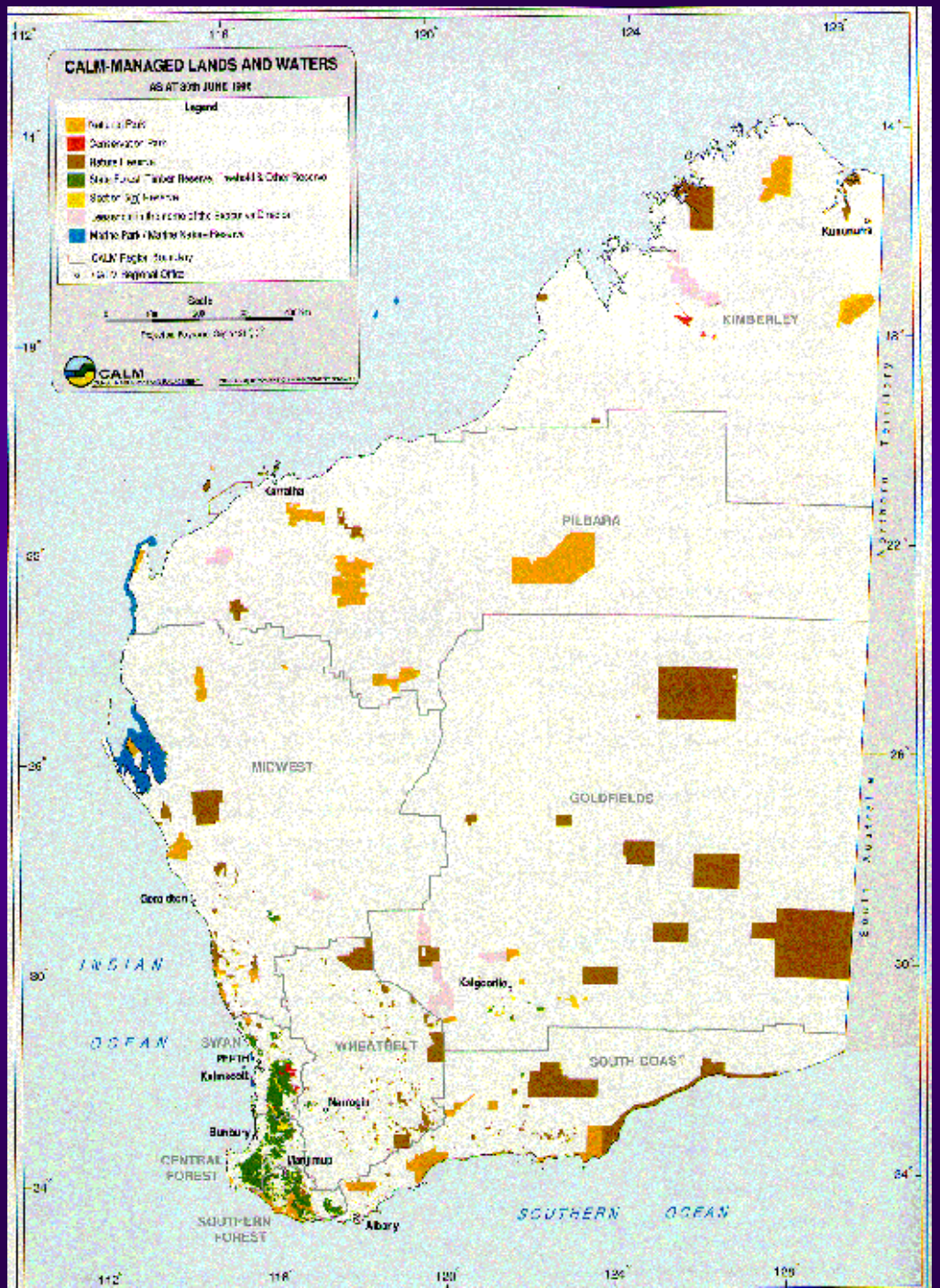
France occupies a land area about a quarter the size of Western Australia

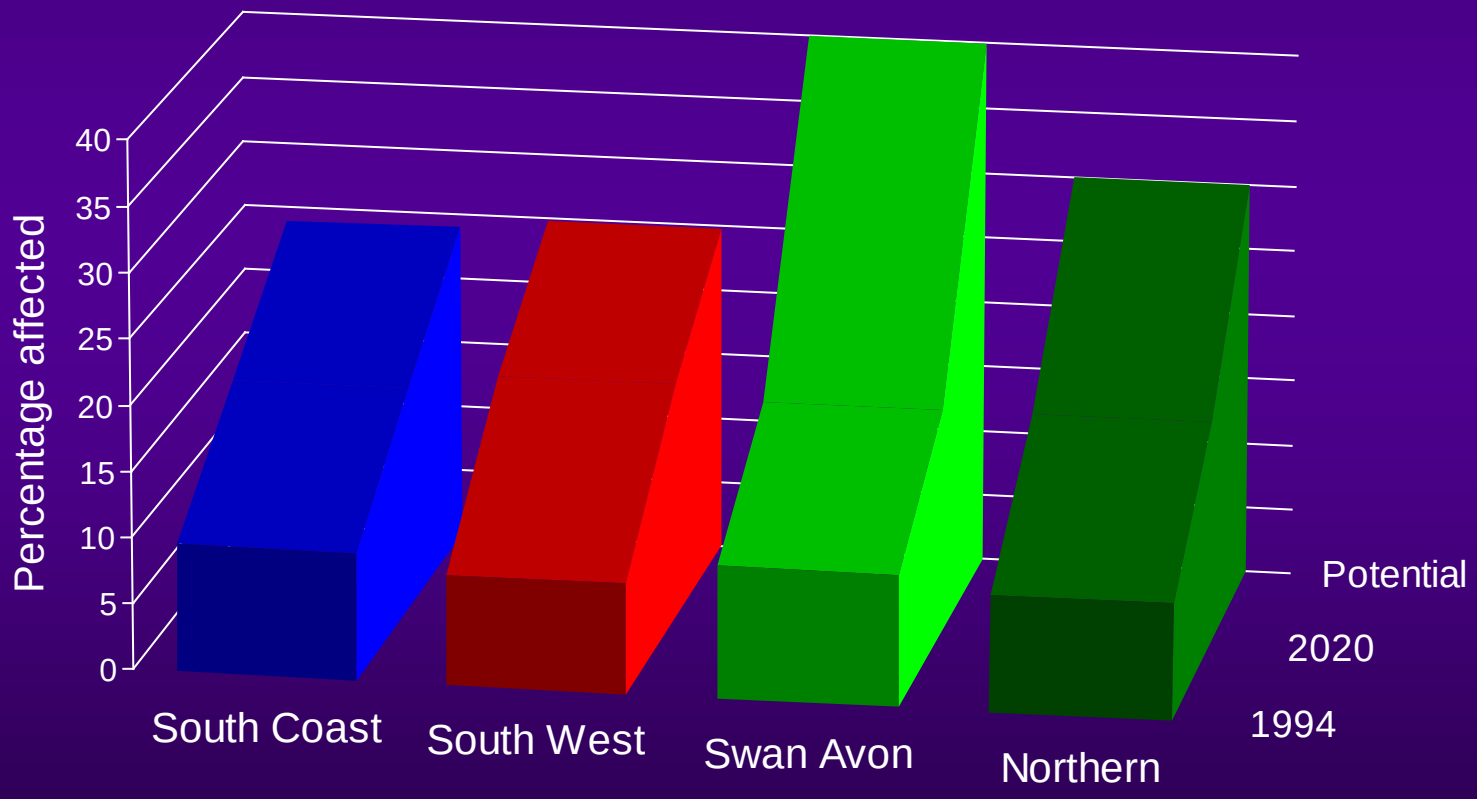


CALM managed lands and waters




CALM manages a land area
51% the size of Japan
51%

Estimated areas affected by salinity by region



Groundwater level response at Lemon Catchment (annual rainfall 750mm)

(after Agriculture WA et al, 1996)

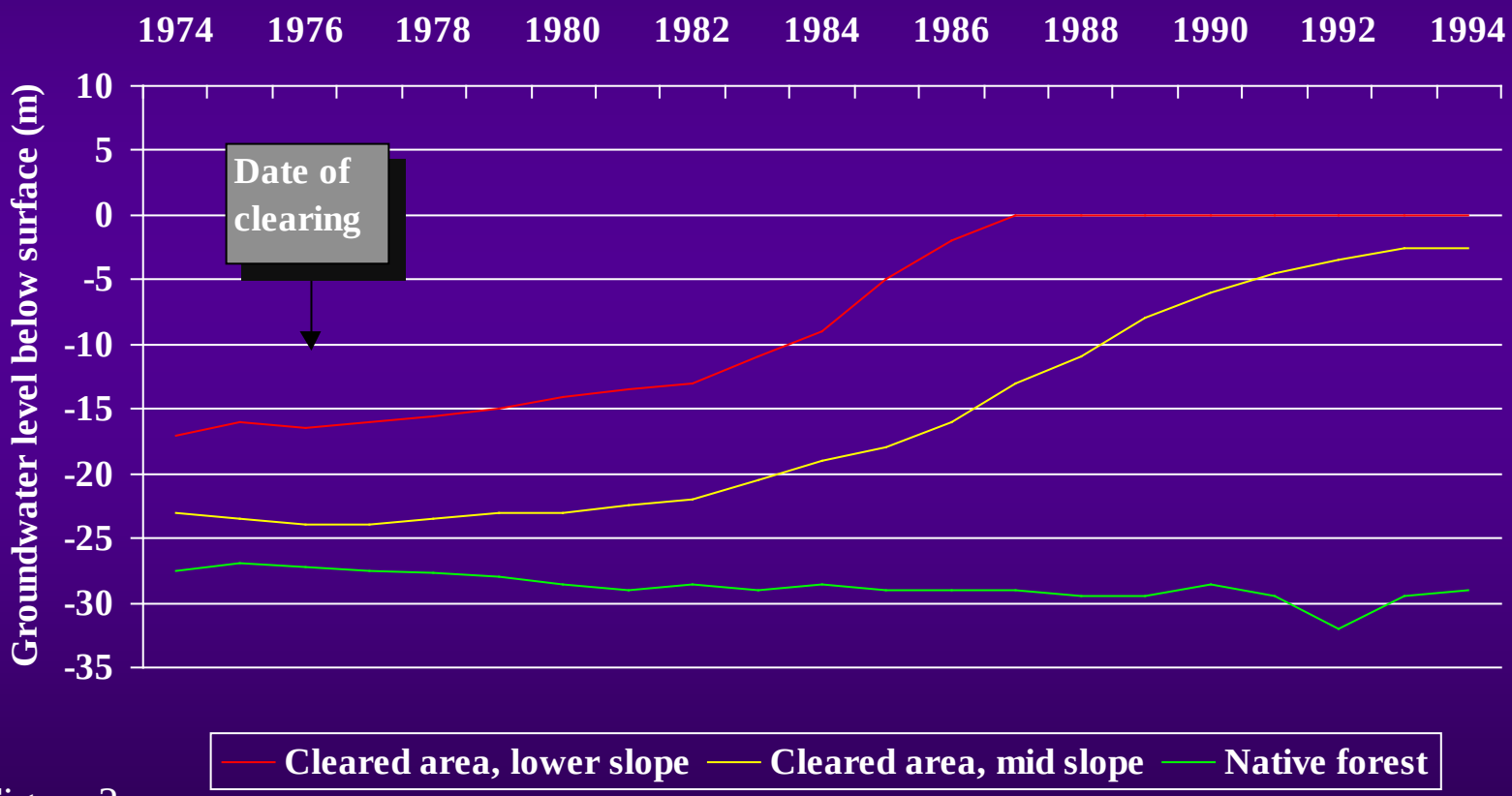
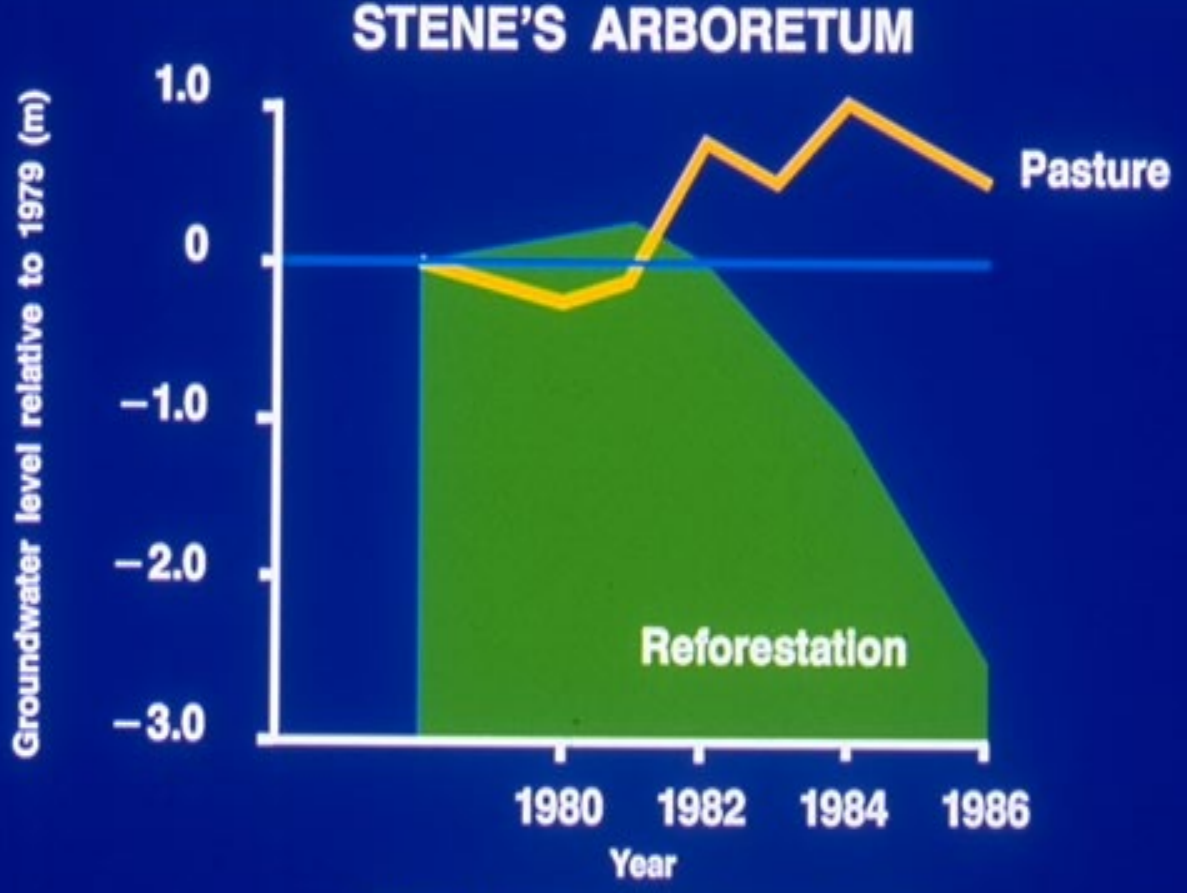


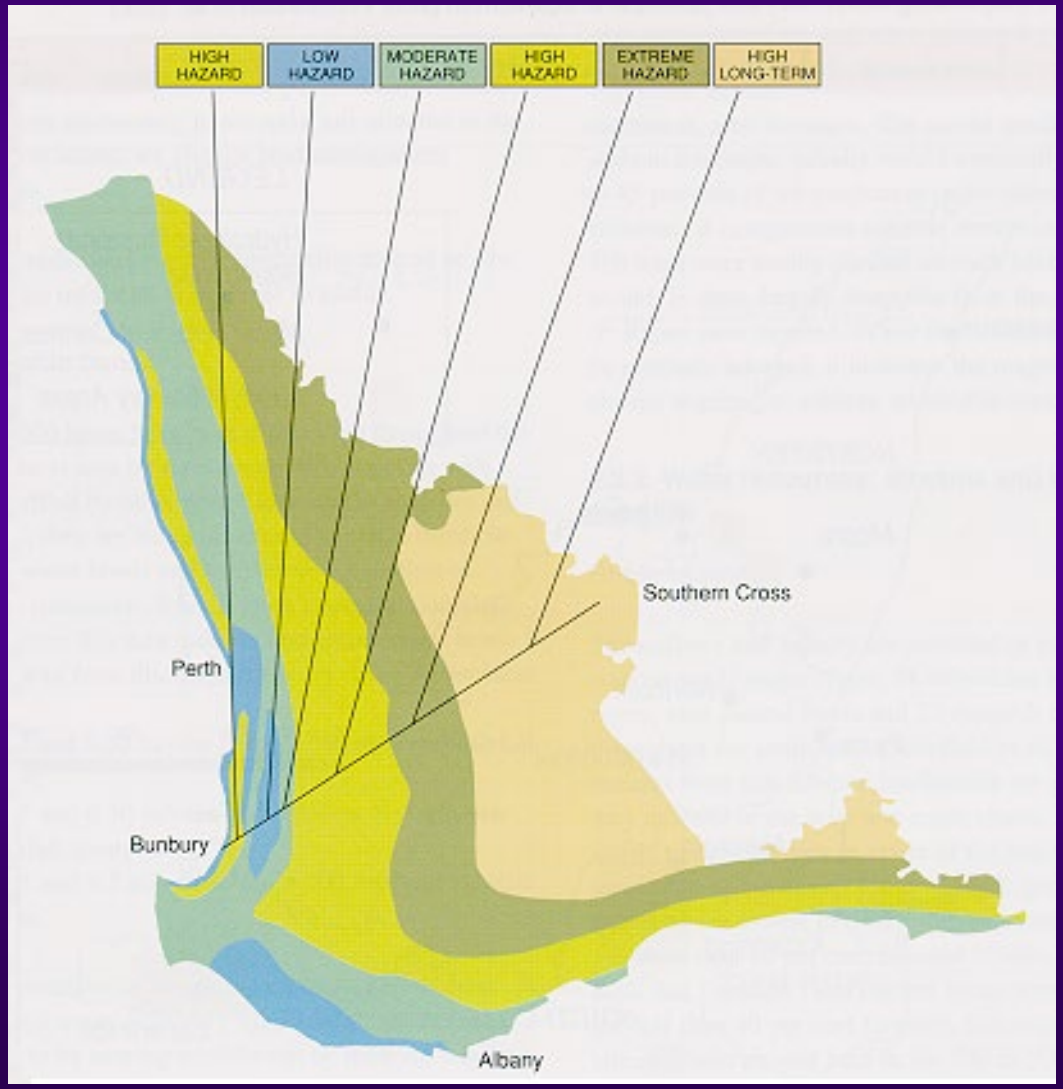
Figure 2

THE EFFECT OF TREE CROPS ON WATER TABLE LEVELS

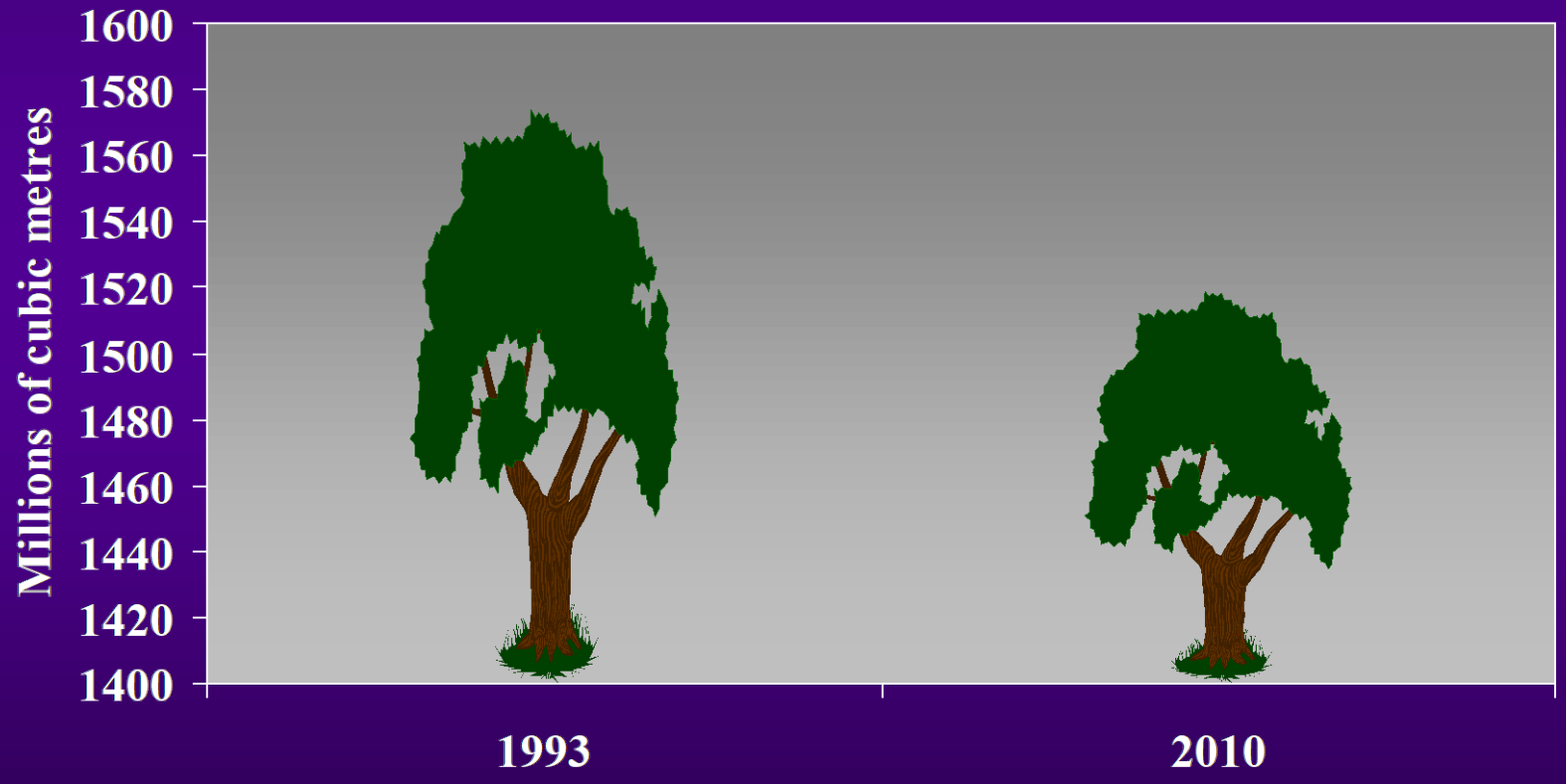


Water Authority of Western Australia
July 1989
Report No. WS 33

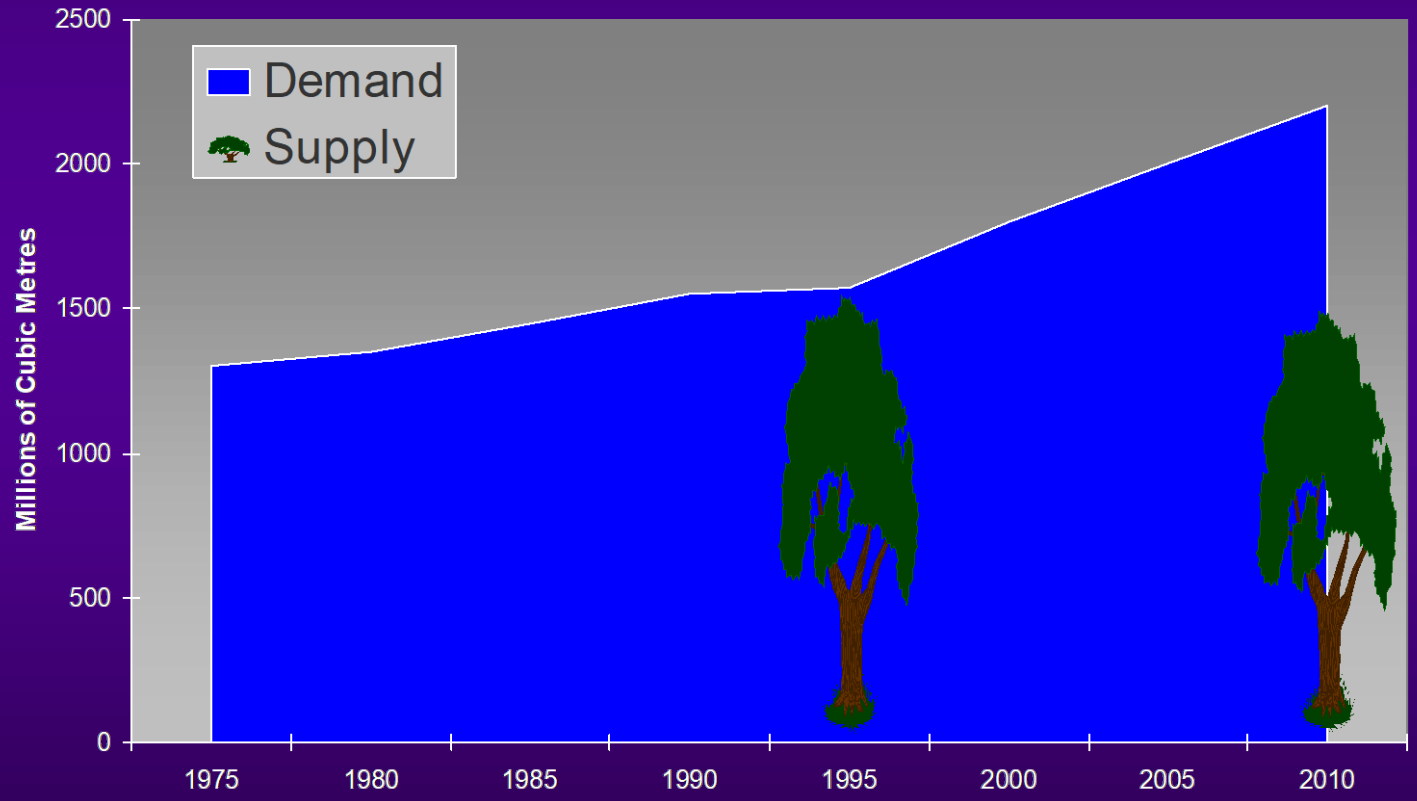
Salinity hazard zones in the South-west



Declining global wood harvests

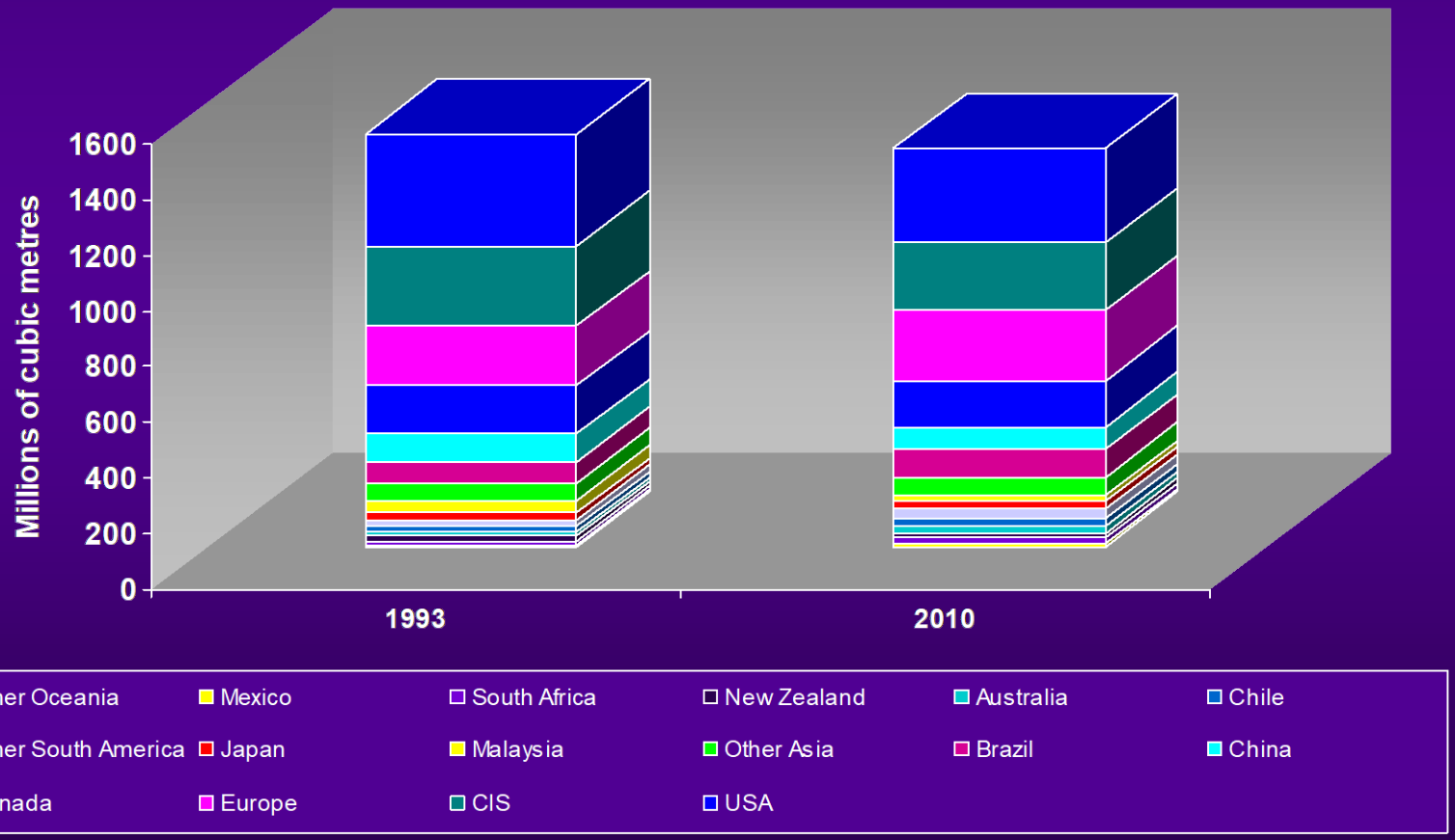


Global wood demand rises as supply falls



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

Declining Global Wood Harvests



Water Drawdown under Bluegum Plantations compared to Pasture

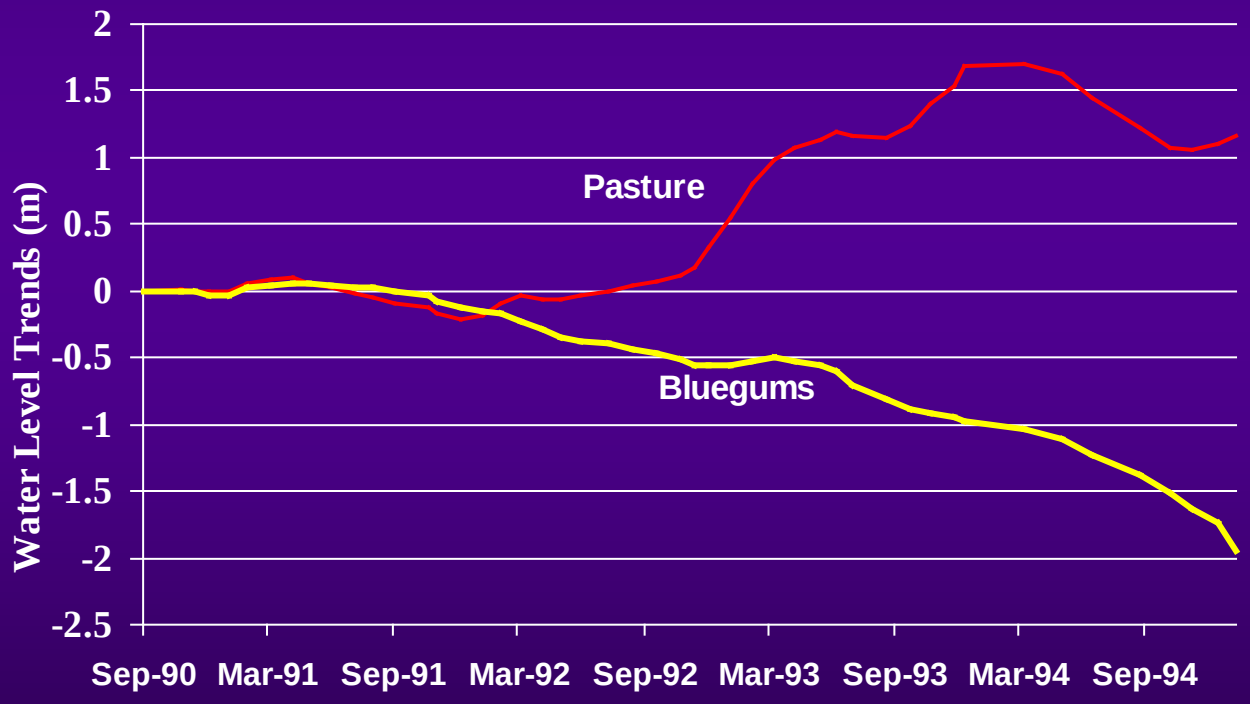


Figure 9

Hydrograph showing groundwater response to alley farming system

(after Short and Skinner, 1996)

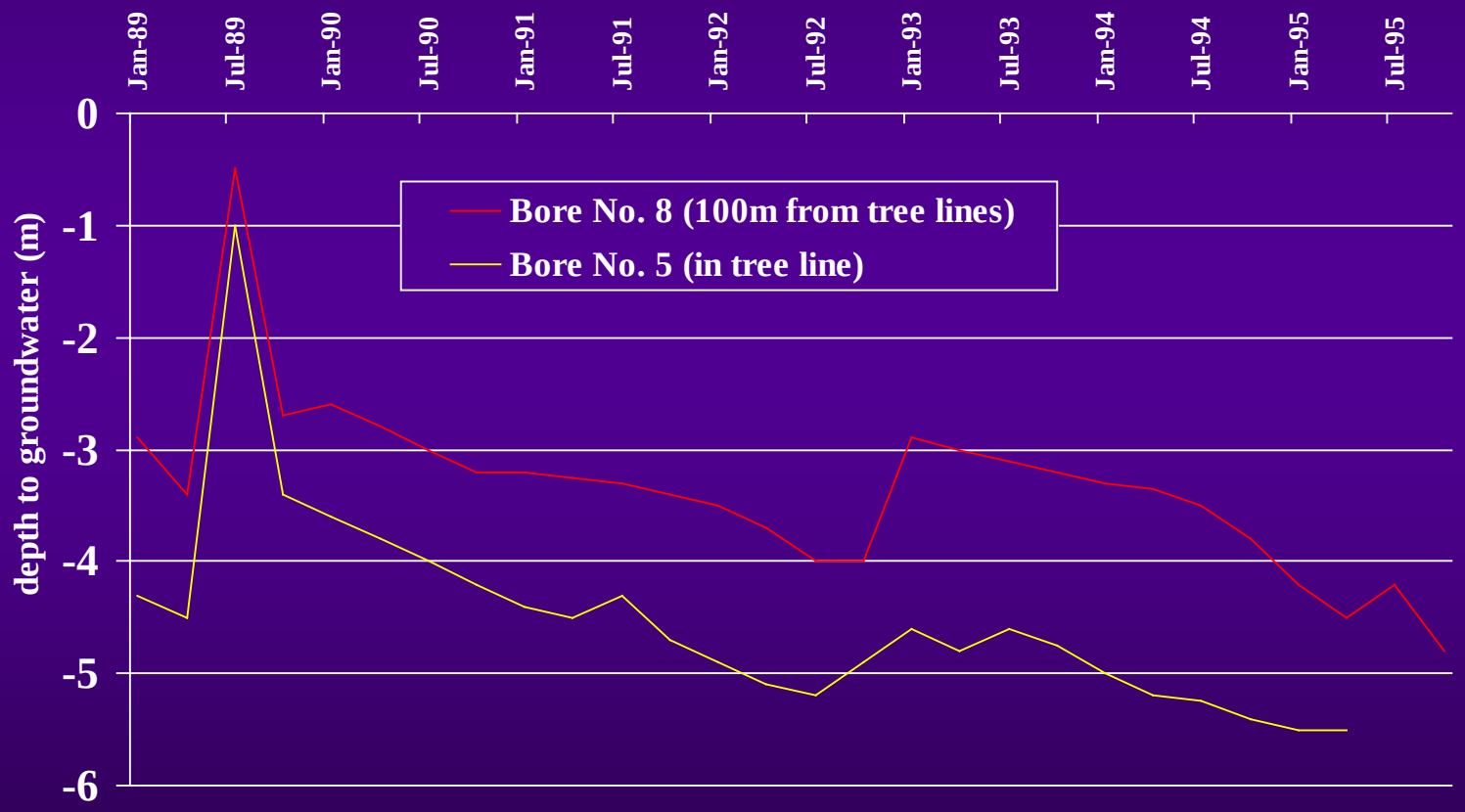


Figure 4

Land availability in the intermediate rainfall zone for maritime pine

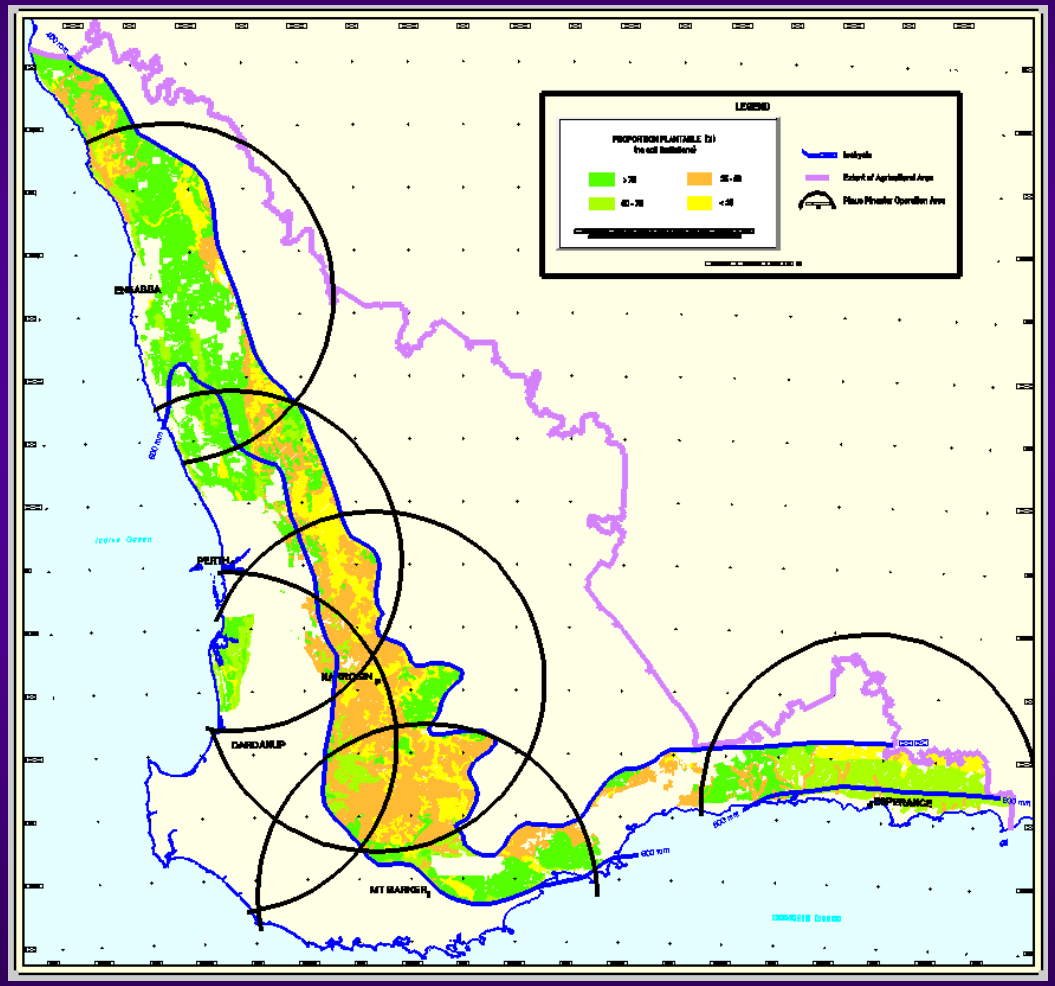


Figure 15


22 3/96


EUC
ANGUSTISSIMA
P.W3

Numbat Sightings in Dryandra Forest

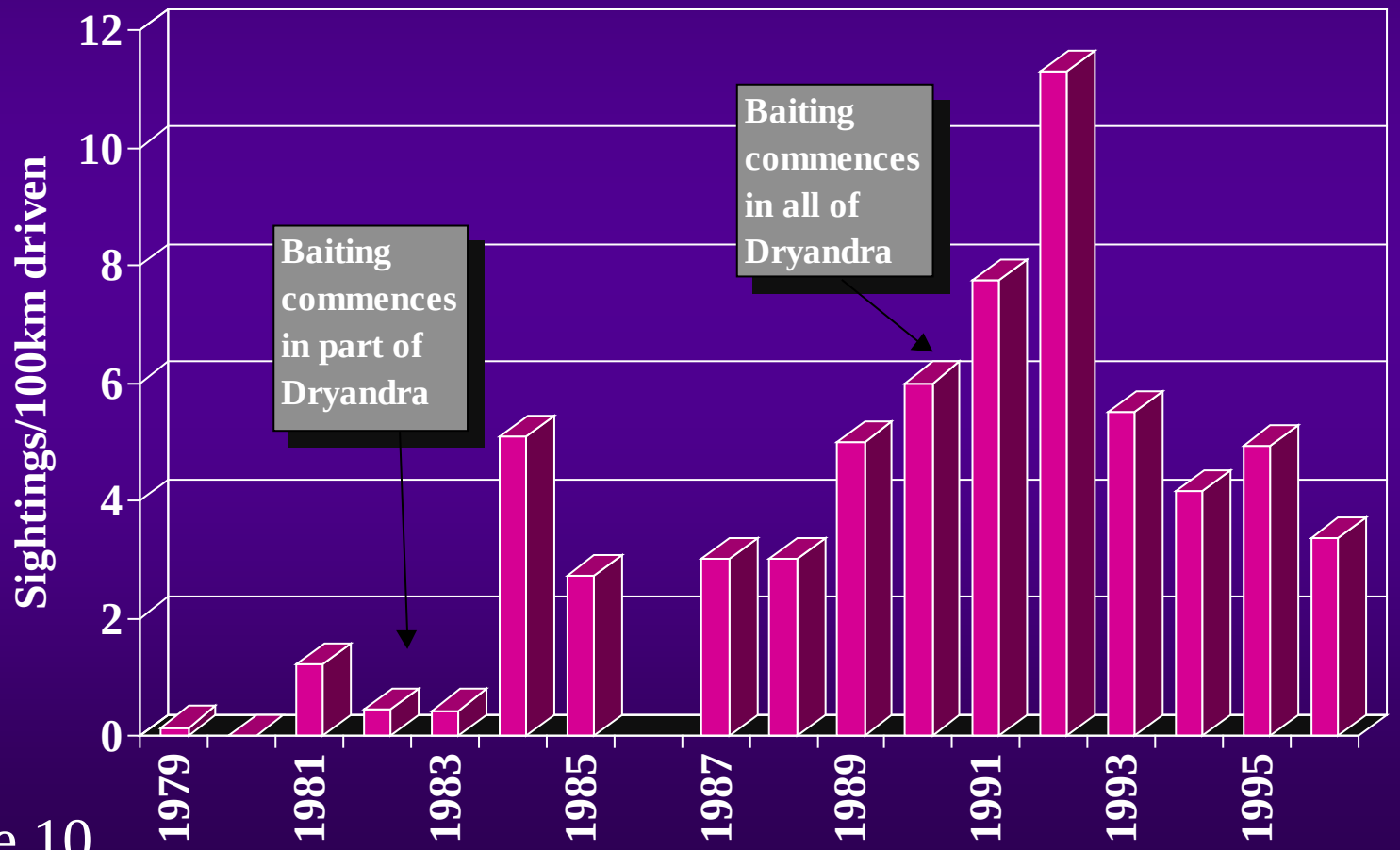
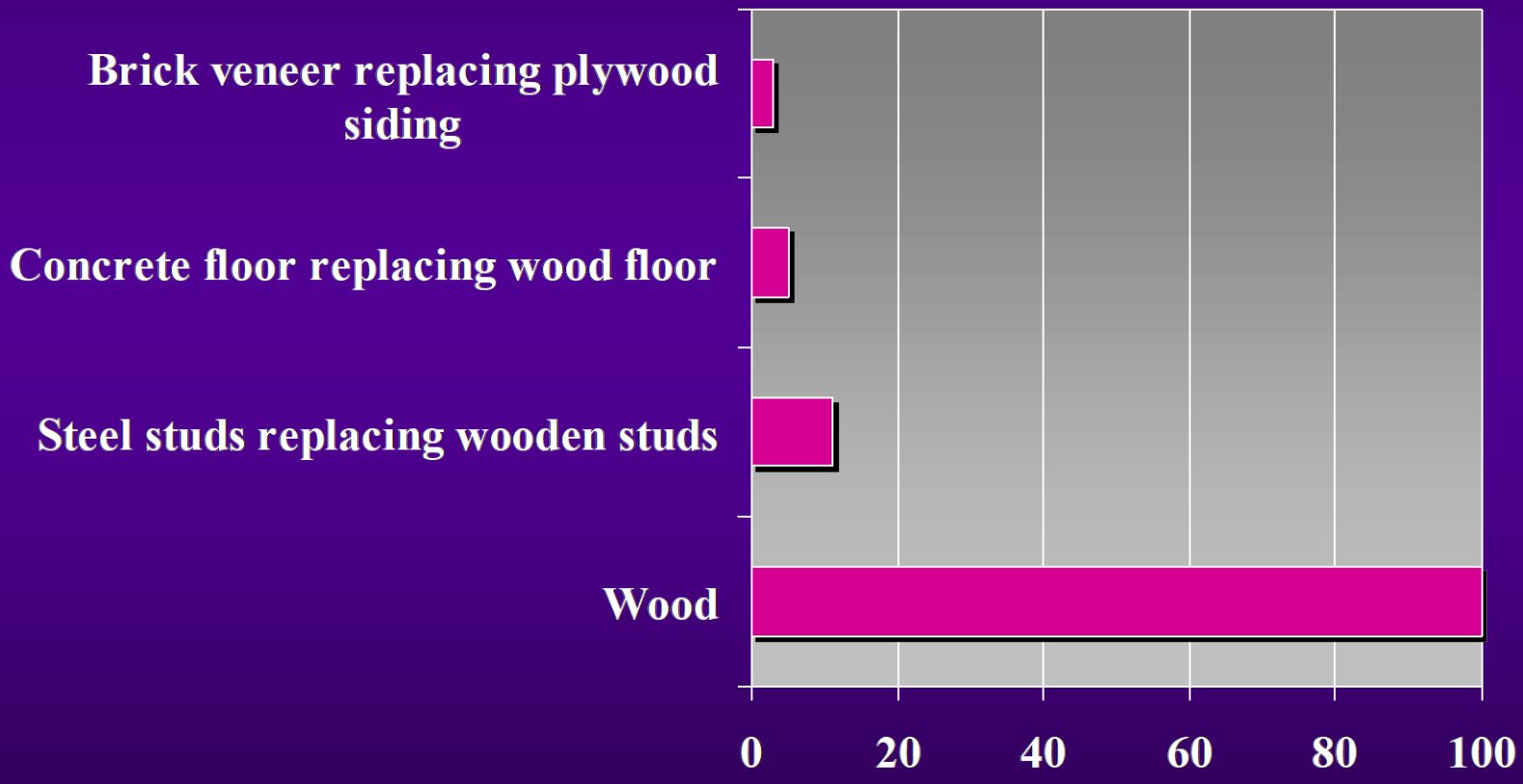


Figure 10

Relative production for a given quantity of energy



Estimated carbon content for major farm forestry zones/types at full rotation age

Rainfall zone	Type	Rotation length	Biomass (dry tonnes/ha)				Total carbon	Average long term carbon
			Wood	Leaf	Roots	Total		
> 600 mm	Pine	25 years	150	90	60	300	150	75
	Bluegum	10 years	100	60		160	80	40
	- roots	30 years			72	72	36	18
	General revegetan	Perpetual	180	108	72	360	180	180
400-600 mm	Maritime pine	35 years	140	84	56	280	140	70
	General revegetatn	Perpetual	150	90	60	300	150	150
< 400	Oil mallee	2 years	2.5	2.5		5	2.5	1.3
	- roots	50 years			50	50	25	25
	General revegetatn	Perpetual	120	80	40	240	120	120

Notes: Total carbon is 50% total biomass
Bluegum and oil mallee roots have different life length to above ground parts due to coppicing
Average long term carbon = 50% of full rotation carbon for harvested crops

Land use by area in the South West of Western Australia

Land use	Area (million ha)	% area within the Agricultural region
Agricultural region	25.25	100.0
Area of private land	20.71	82.0
Area of cleared land	17.98	71.2
Private remnant vegetation	2.75	11.1
Public land	4.52	17.9

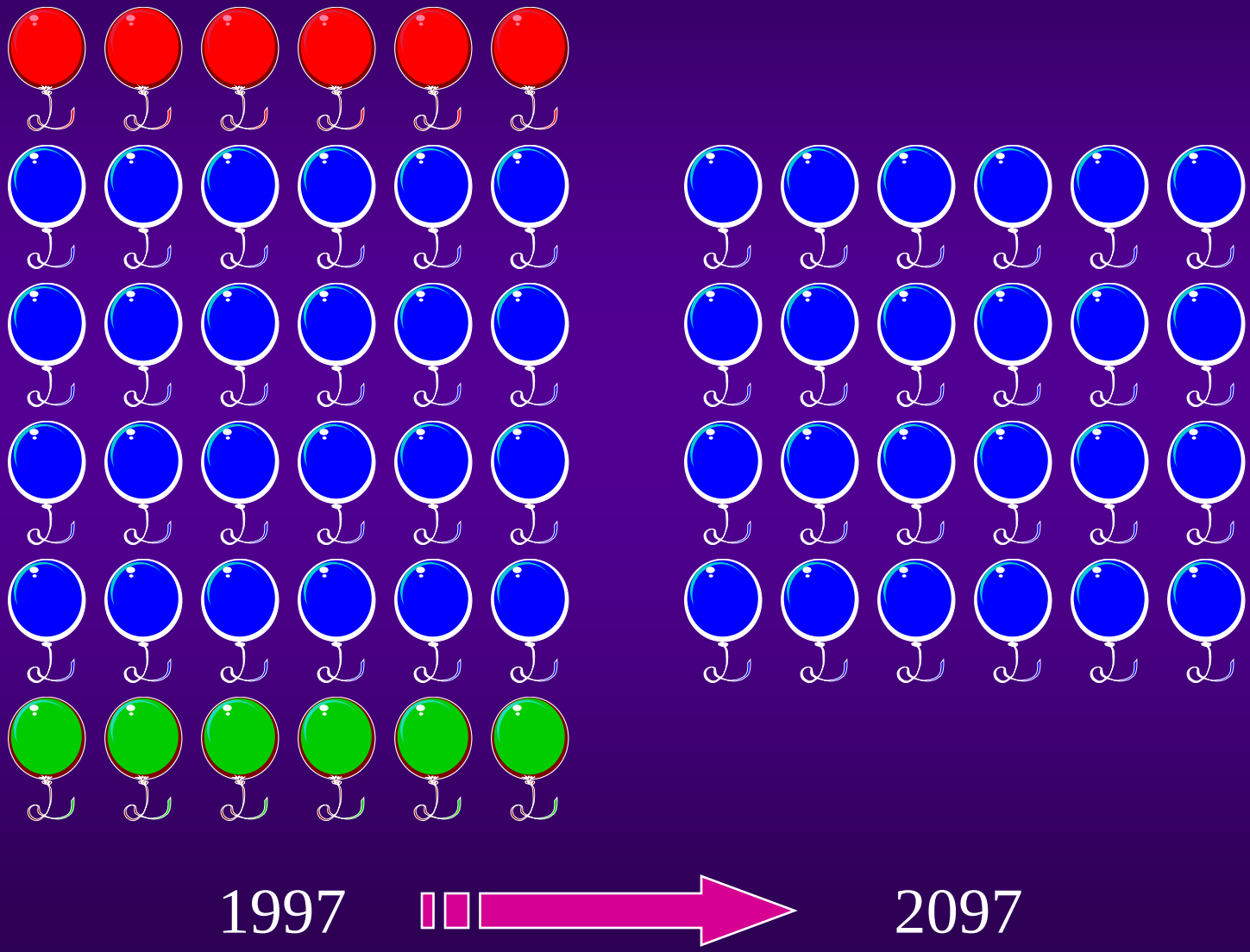

CALM SHAREFARMS
MARITIME PINE
DORMAN PLANTATION PLANTED 1996

Farm forestry zones by area and rainfall

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

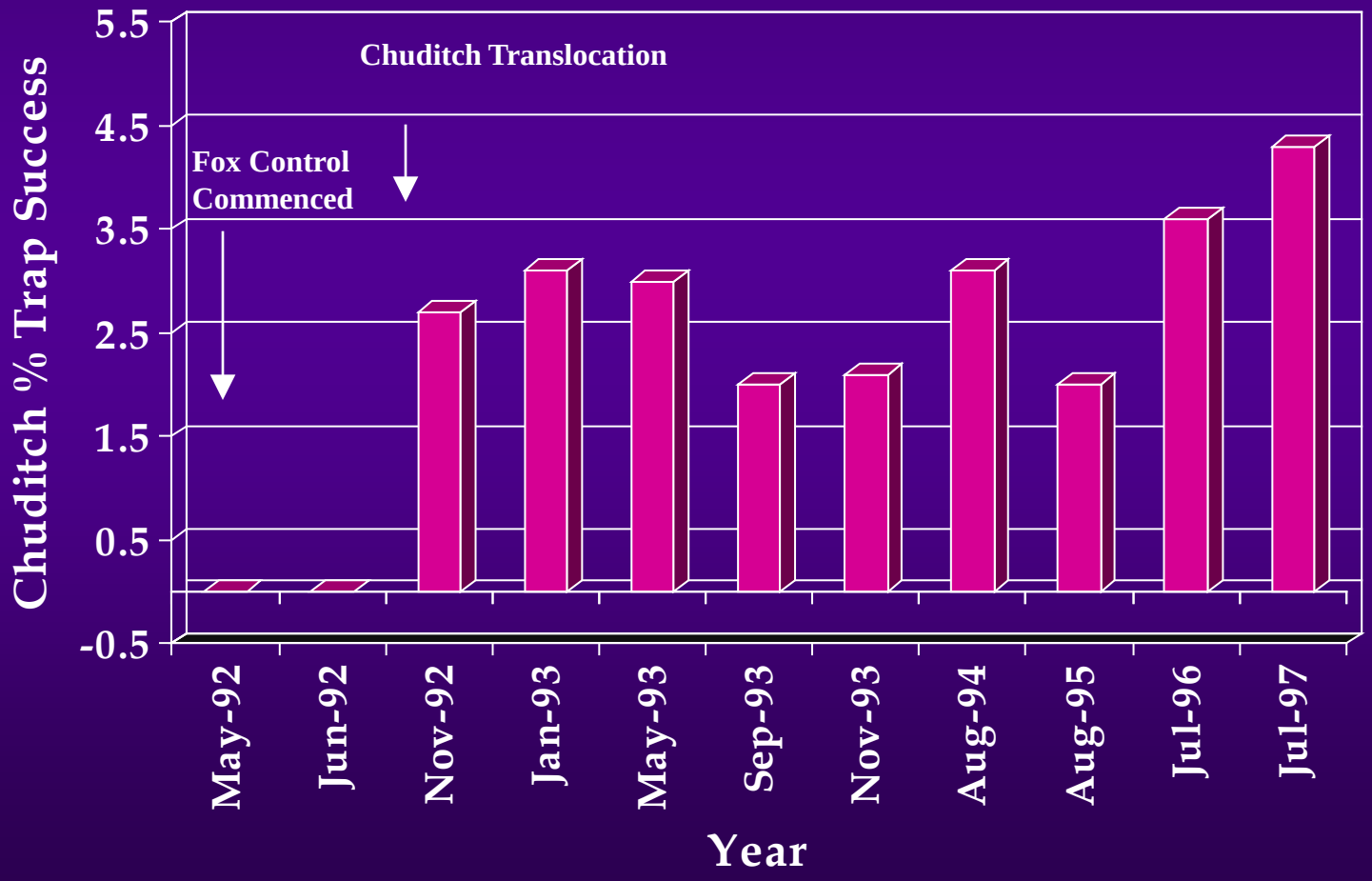
BP Refinery each year emits 270,000 tonnes of Carbon

- Have to absorb 270,000 tonnes for 100 years - ie. 27,000,000 tonne years
- 27,500 hectares of Maritime Pine absorbs 550,000 tonnes per year which lasts 50 years - ie. 27,500,000 tonne years
- Over 100 years BP emits
  270,000 x 100 x 100 = 2,700,000,000 tonne years
- 27,500 ha of Maritime Pine absorbs
  27,500 x 20 x 50 x 100 = 2,750,000,000 tonne years

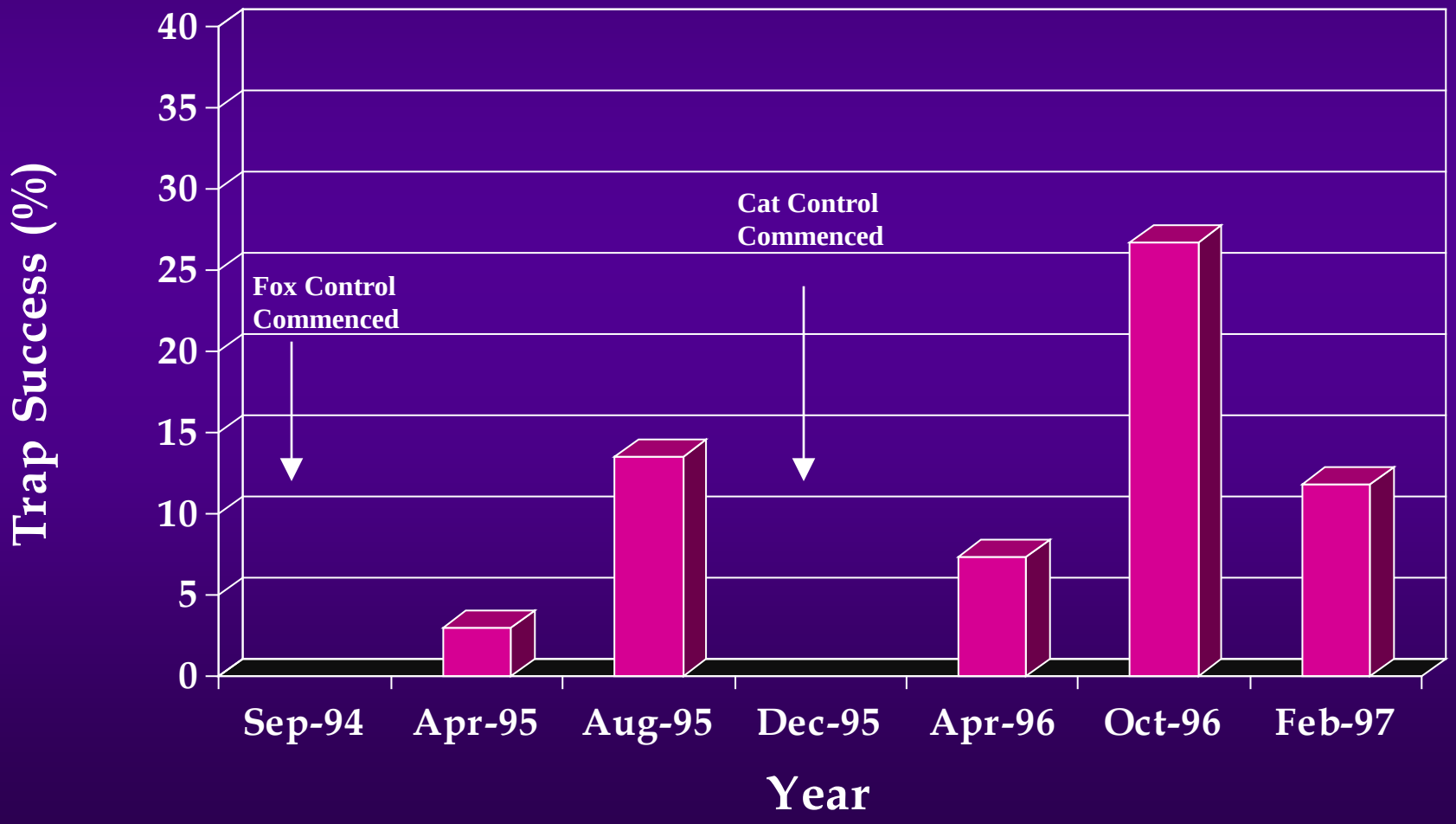

1997
2097


Bernier Island
Dorre Island
Cape Peron
Cape Inscription
Herald Bight
Shark Bay Marine Park
François Peron National Park
MONKEY MIA
Faure Island
Big Lagoon
PERON PENINSULA
DENHAM
FREYCINET
Dirk Hartog Island
NANGA PENINSULA
Eagle Bluff
Lharidon Bight
USELESS LOOP
Steep Point
Hamelin Pool
REACH
EDEL LAND
Freycinet Estuary
Exploring Cliffs
TAMALA

Chuditch Recovery - Translocation To Julimar Conservation Park



Project Eden- Small Mammal Trap Success On Peron Peninsula



Factors influencing global wood supply and demand

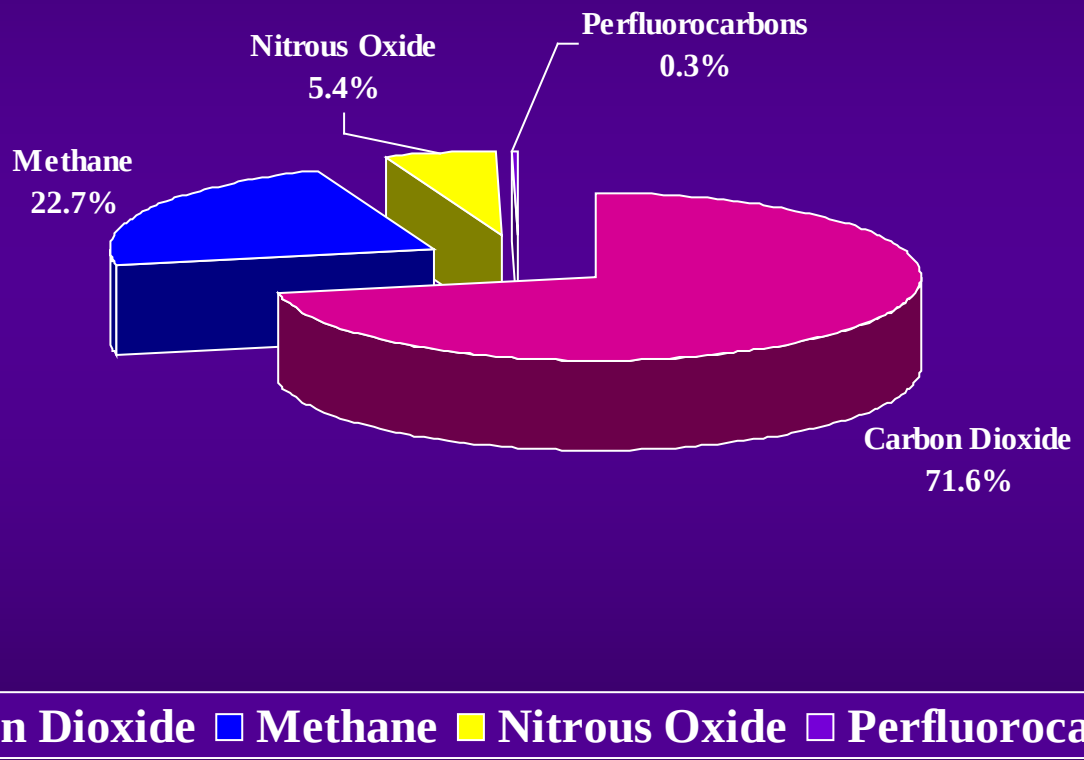
- Demand
  - Global population growth
  - Modest increases in per capita consumption
- Supply
  - Historical overharvesting in tropical regions has reduced available wood supply
  - Legislative and environmental pressure, changes in tax laws and forest inaccessibility are also reducing potential global harvests

Source: Xylem Investments Inc.

Carbon inventory over 3 million ha across various farm forestry zones

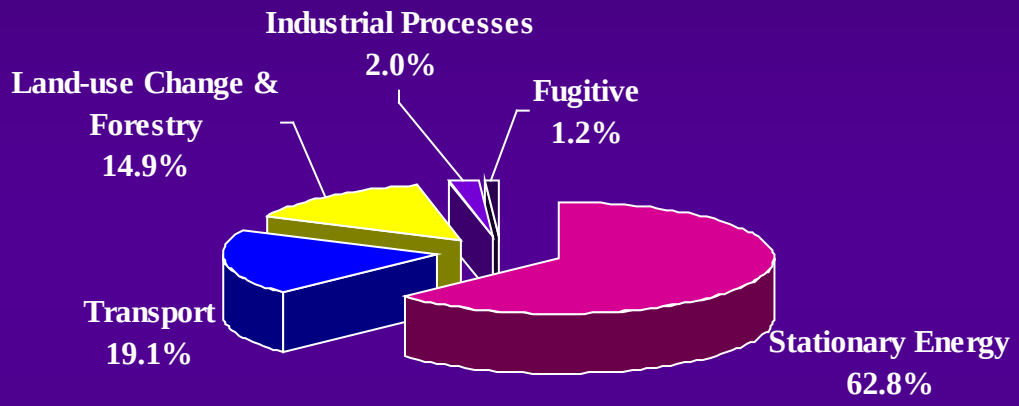
Rainfall zone	Zone area	Type	Area planted	Average carbon tonnes/ha	Total carbon tonnes 10^6
> 600 mm	2 million ha	Pine	100 000 ha	75	8
		Bluegum	250 000 ha	58	15
		General reveg	250 000 ha	180	45
400-600 mm	6 million ha	Maritime pine	400 000 ha	70	28
		General reveg	1 000 000 ha	150	150
< 400 mm	10 million ha	Oil mallee	500 000 ha	26	13
		General reveg	500 000 ha	120	60

Australian Greenhouse Gases 1995



Source: NGGI 1997

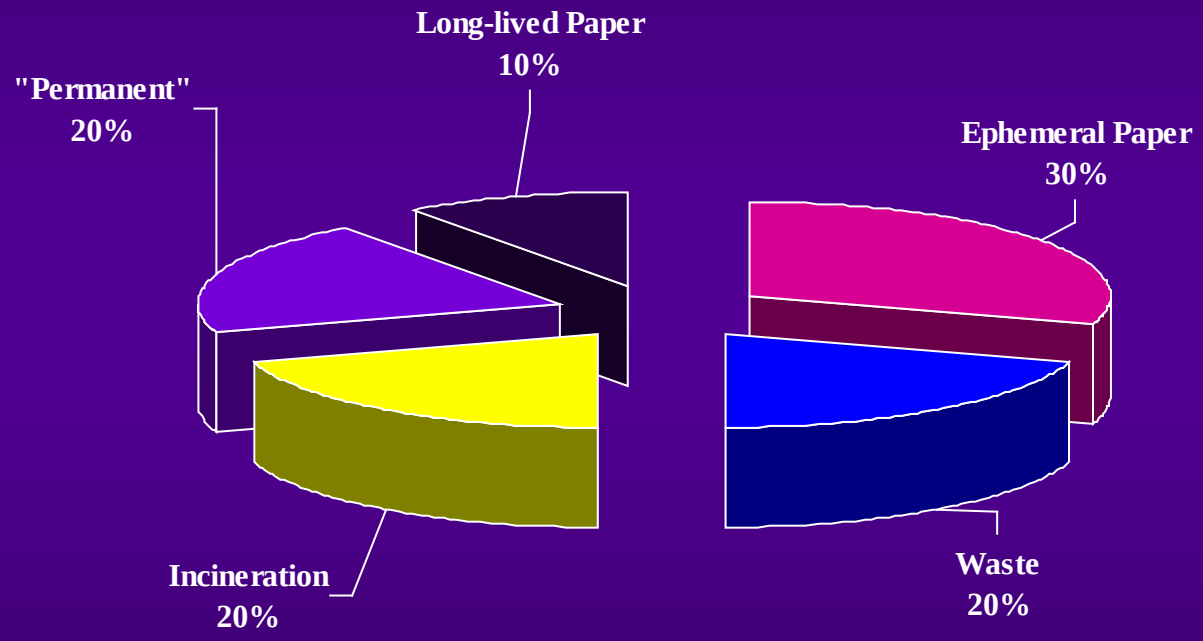
Sources of Australian CO_2 - 1995



Source: NGGI 1997

End-use of Forest Carbon

(Indicative only not accurate)



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

Region	Total Area 000ha	Salt affected 1994 000ha	%	Salt affected 2020 000ha	%	Potential area 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
Total	**19 231**	**1 805**	**9.4**	**3 296**	**17.1**	**6 111**	**31.8**

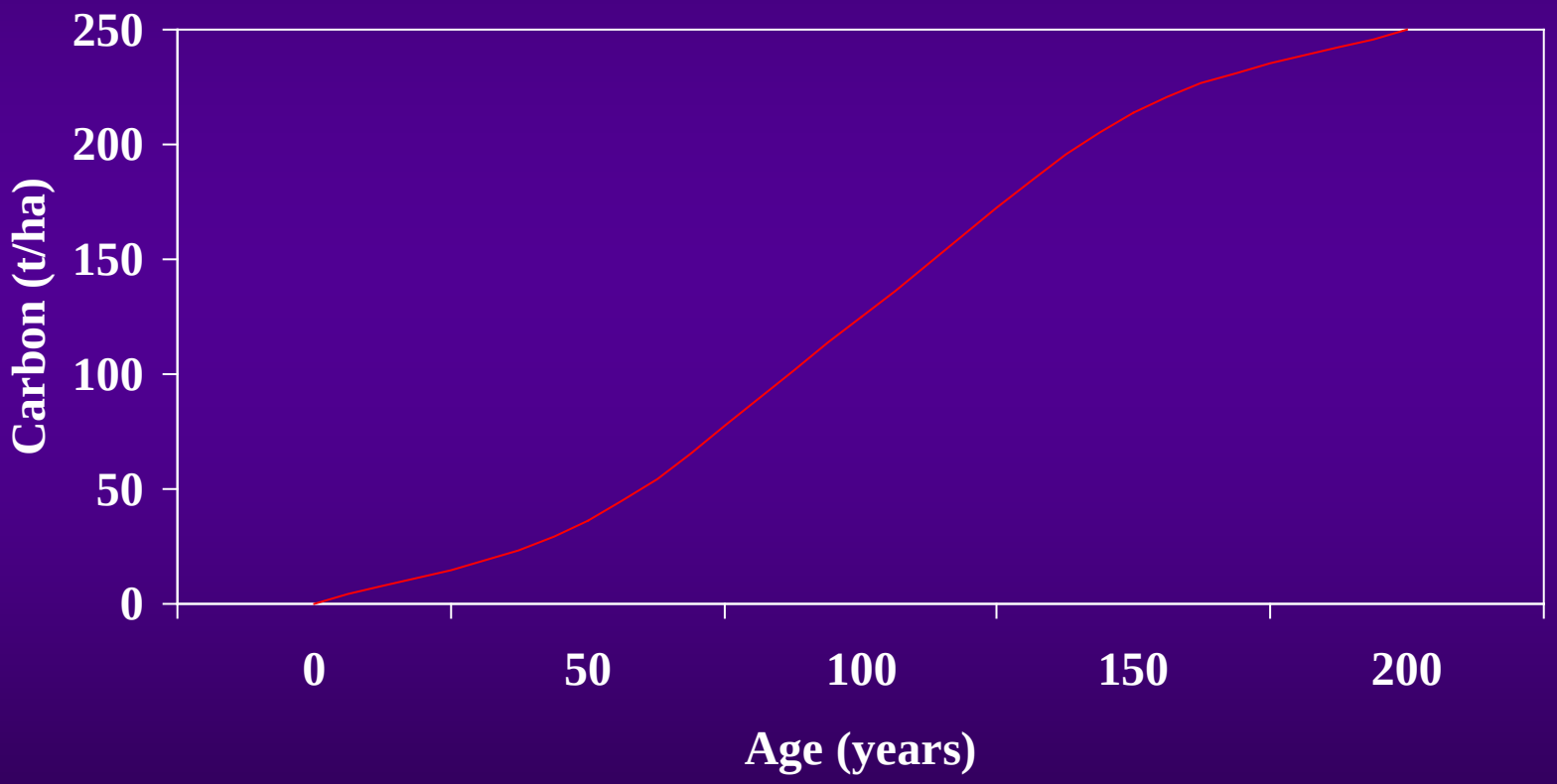
From Ferdowsian *et al*. 1996

Projected cover of woody perennials

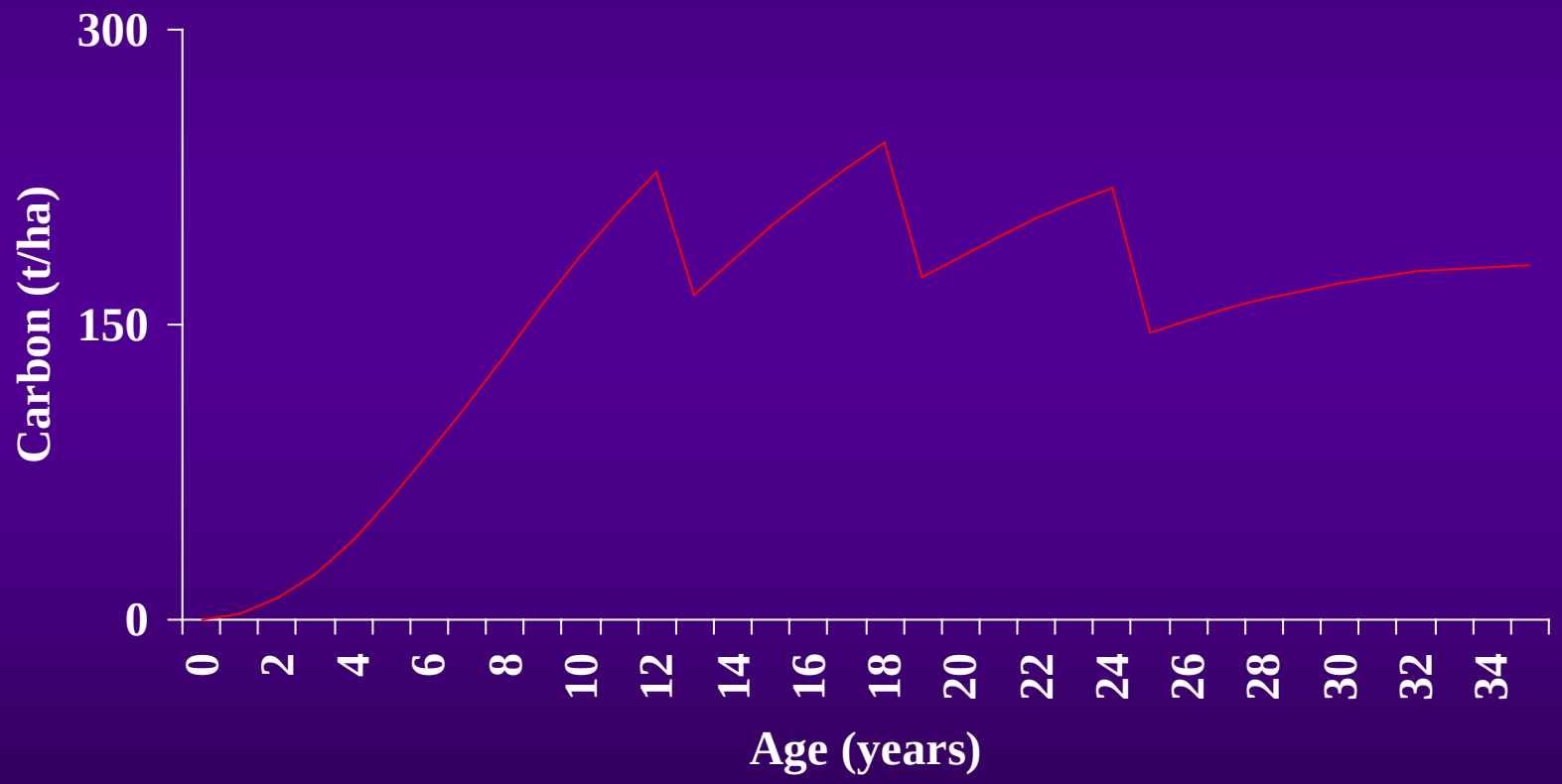
Type	Area	Funding
Commercial timber crops (bluegum, pine)	0.75 m ha	Private*
Land conservation, biodiversity (general revegetation)	1.25 m ha	Public/private
Forage crops (tagasaste)	0.50 m ha	Private
New commercial tree crops (oil mallee)	0.50 m ha	Private*

* public funds invested to establish the viability of industries

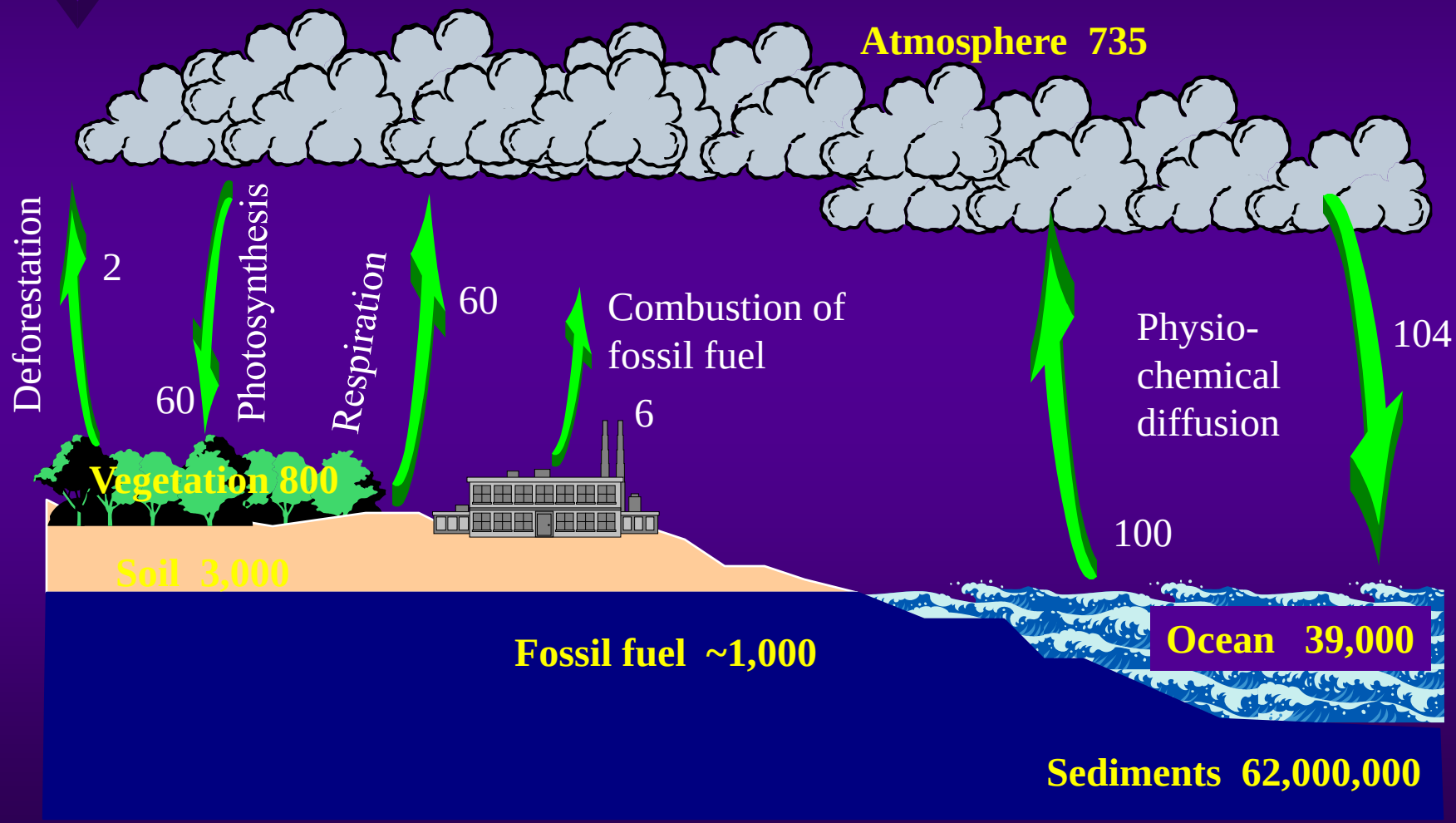
Example of a forest growth model



Carbon accumulation for Maritime pine over 34 years



The carbon cycle



Major pools of forest carbon