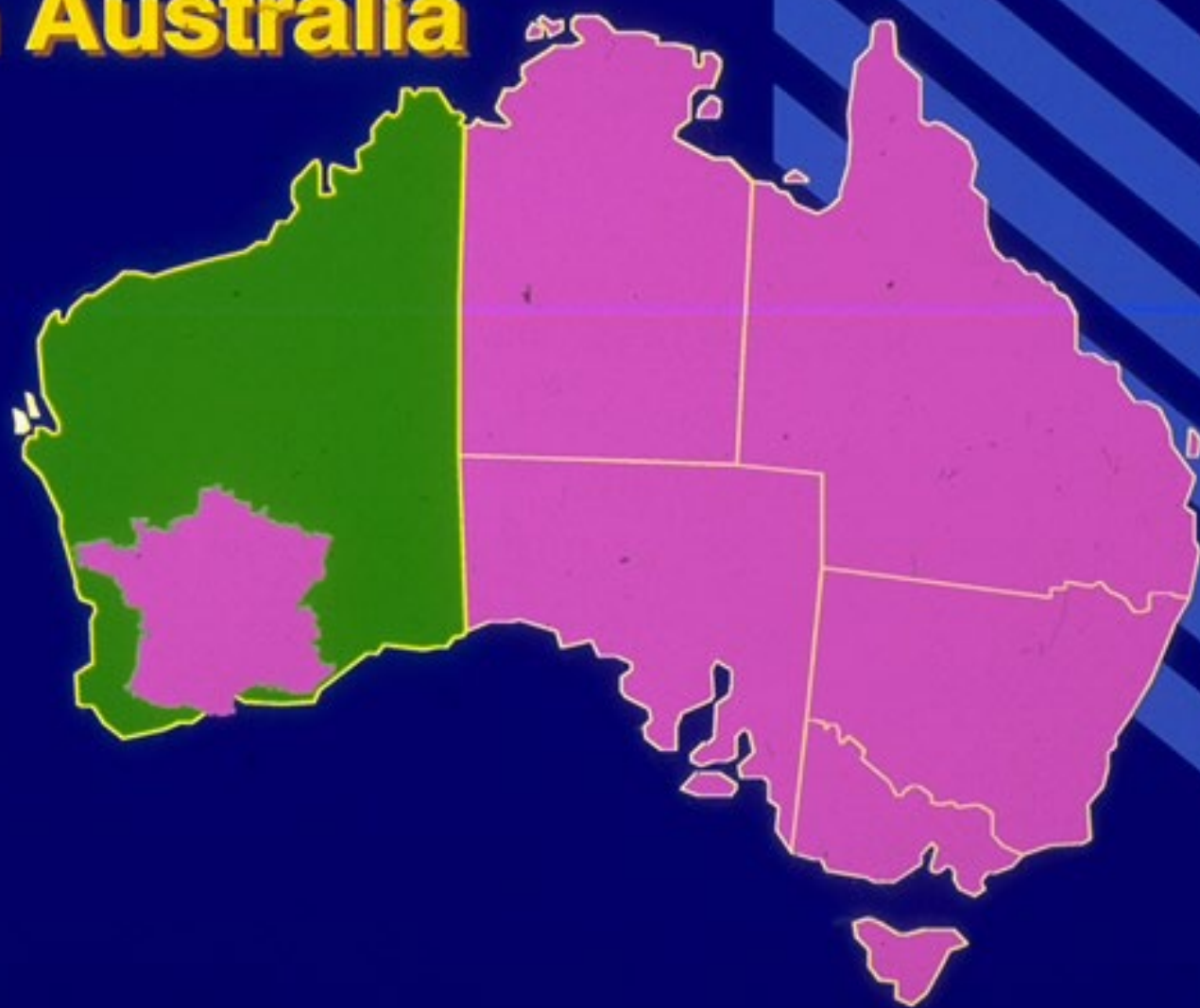


**France occupies a land area  
about a quarter the size of  
Western Australia**



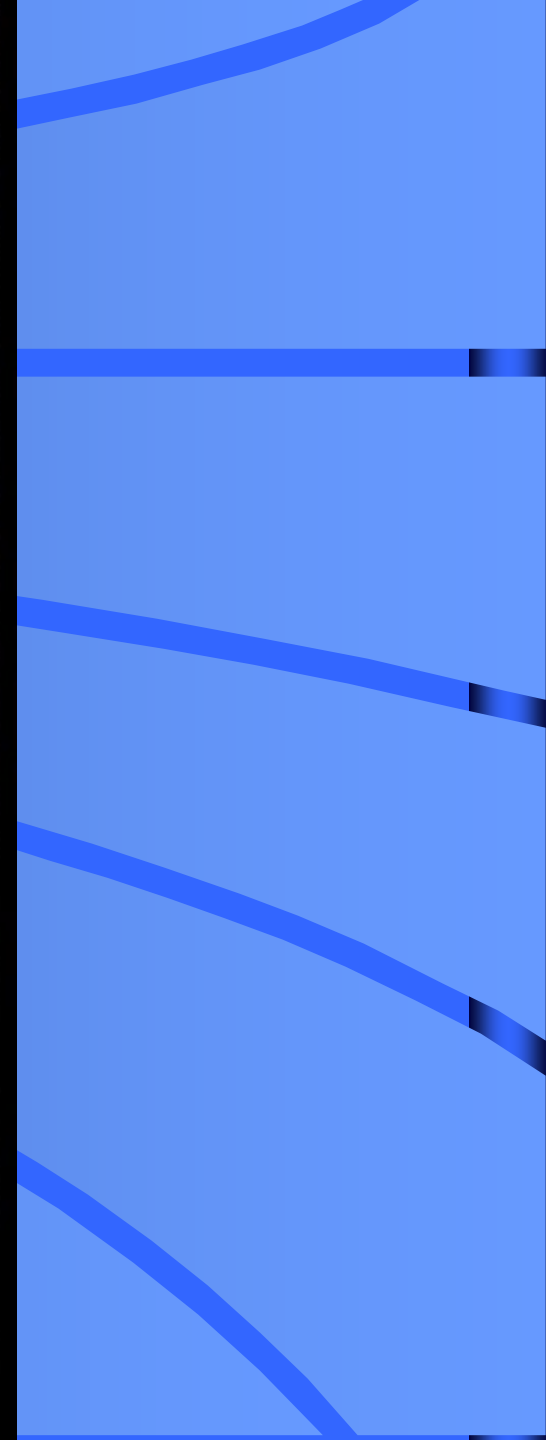
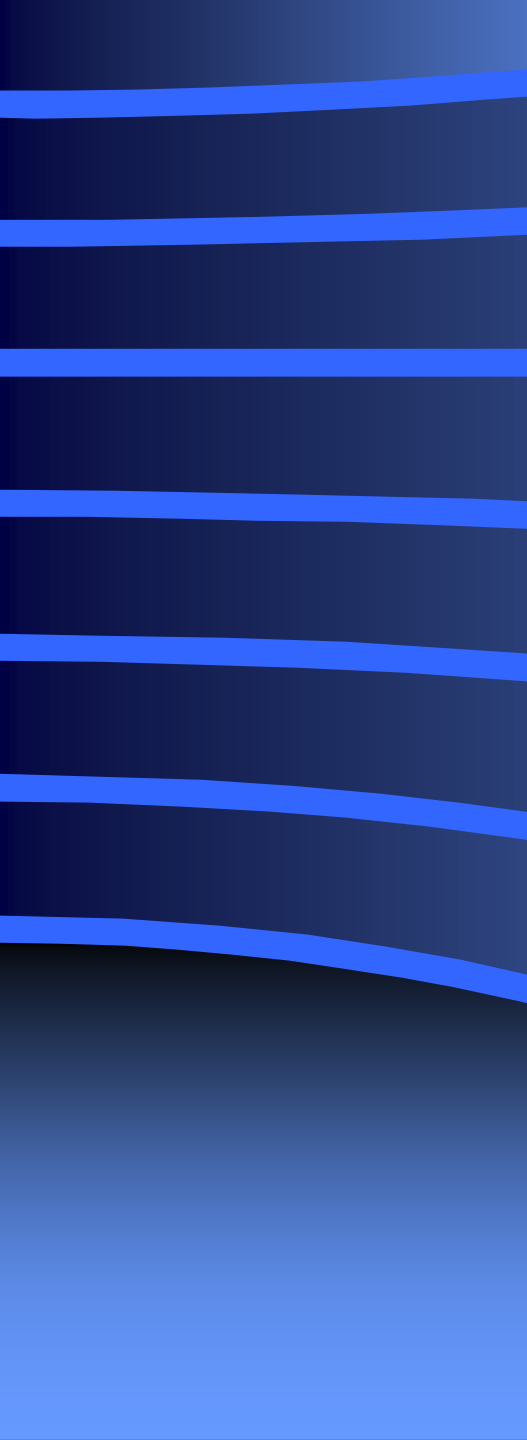
The background of the slide features a series of horizontal, wavy lines in various shades of blue, creating a dynamic, ocean-like or layered effect. The lines vary in thickness and color, ranging from a deep navy blue to a lighter sky blue.

# **The Western Australian Environment and its Natural Resources**









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

**51%**



The background of the slide features several thick, wavy blue lines that sweep across the frame from the top left towards the bottom right, creating a sense of movement and depth. The lines vary in thickness and curvature, set against a lighter blue gradient background.

# **The Principles on which the Concept of an Integrated Agency is Based**







# CALM Organisation Chart

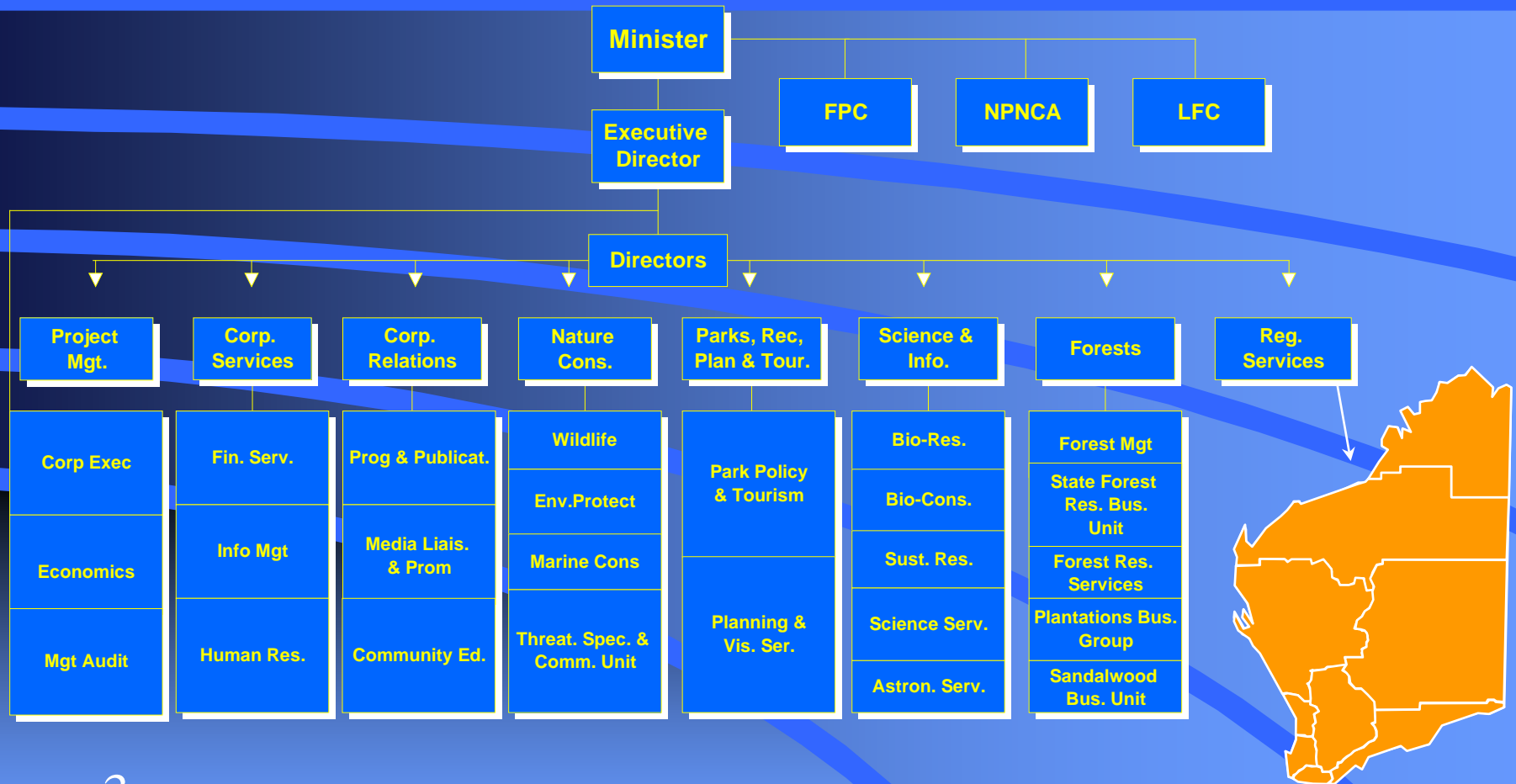


Figure 3

# The increase in revenue collection following the introduction of a local retention policy Nambung National Park

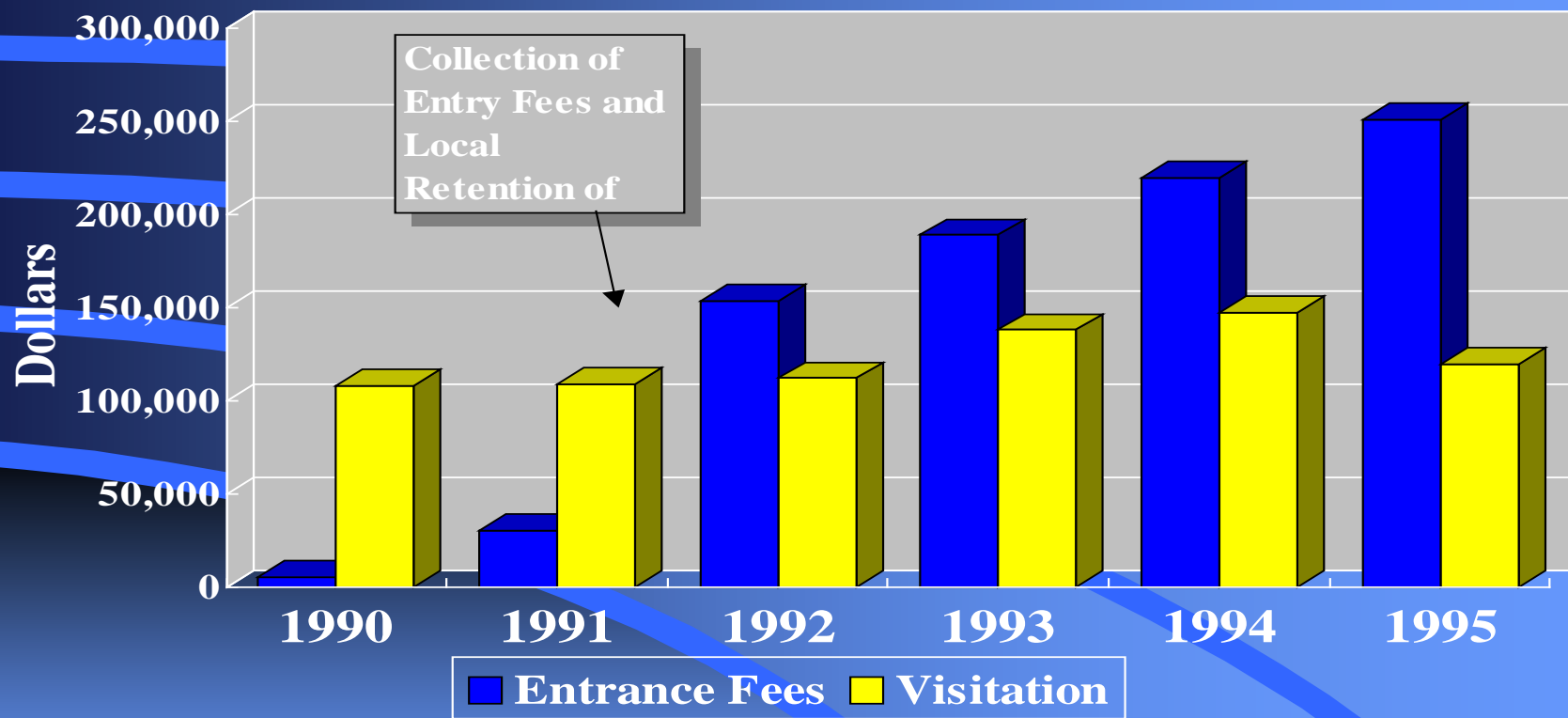


Figure 4

# Expenditure and revenue on conservation and land management

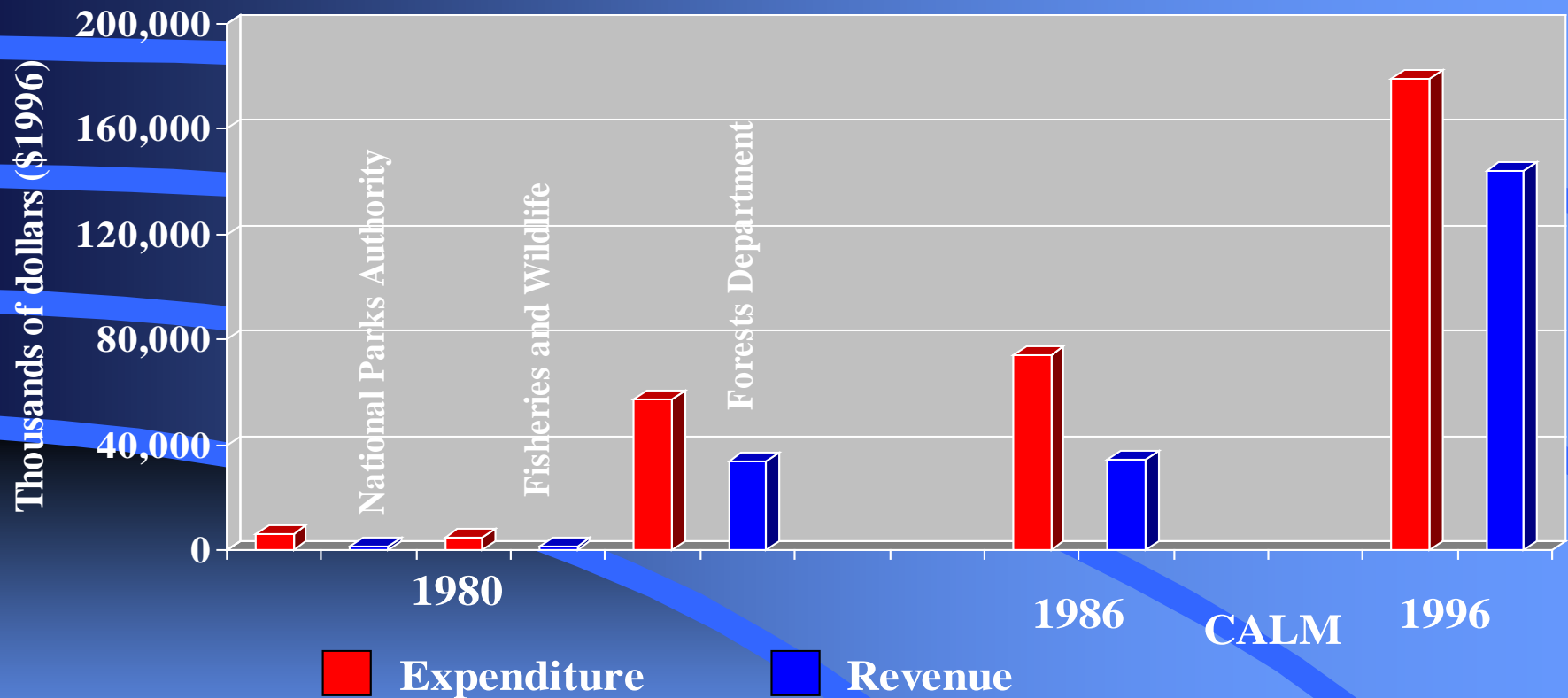


Figure 5



# CALM Organisation Chart

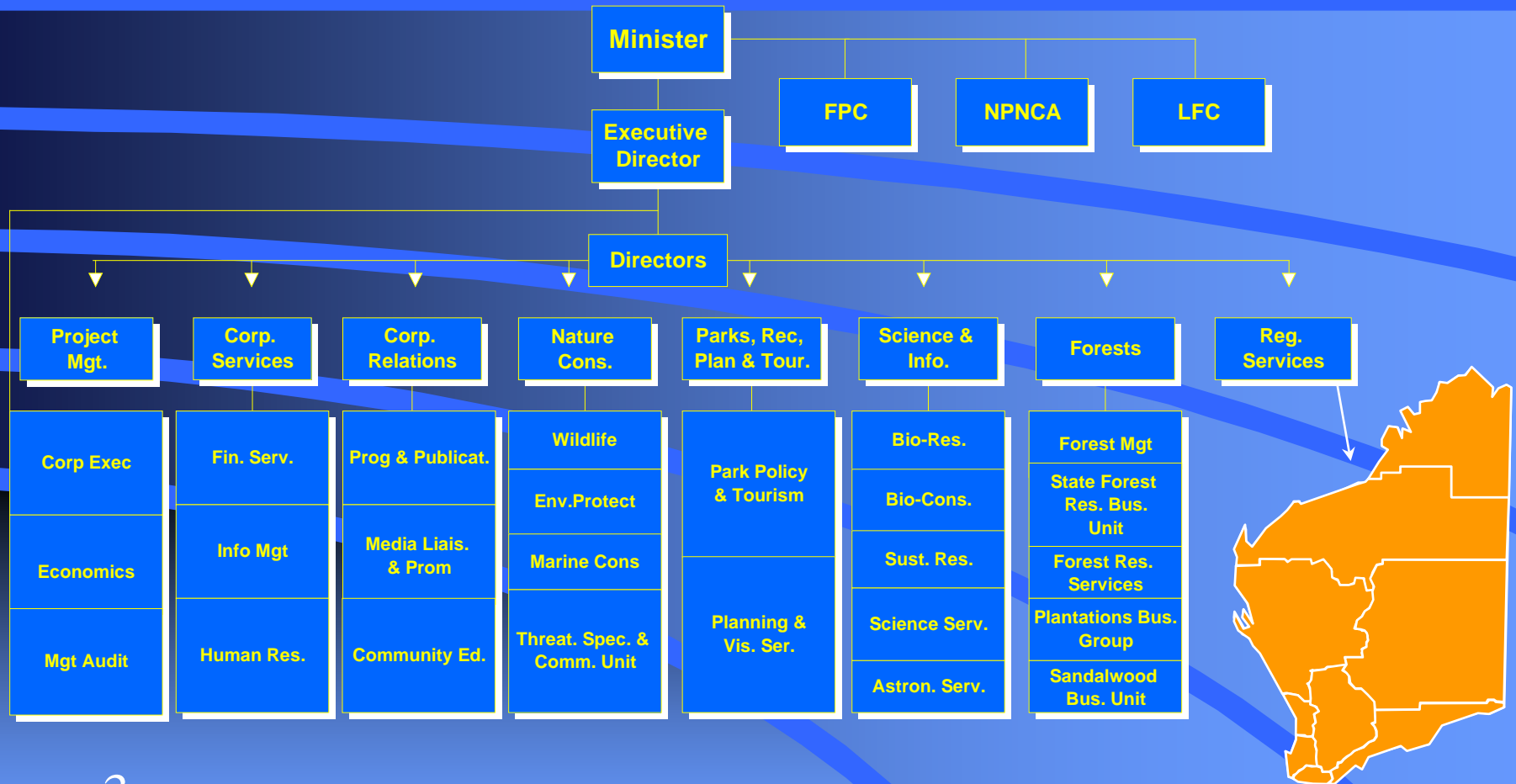


Figure 3

# Hardwood Plantation Business Unit (Establishment, Tending, Harvesting and Sales)

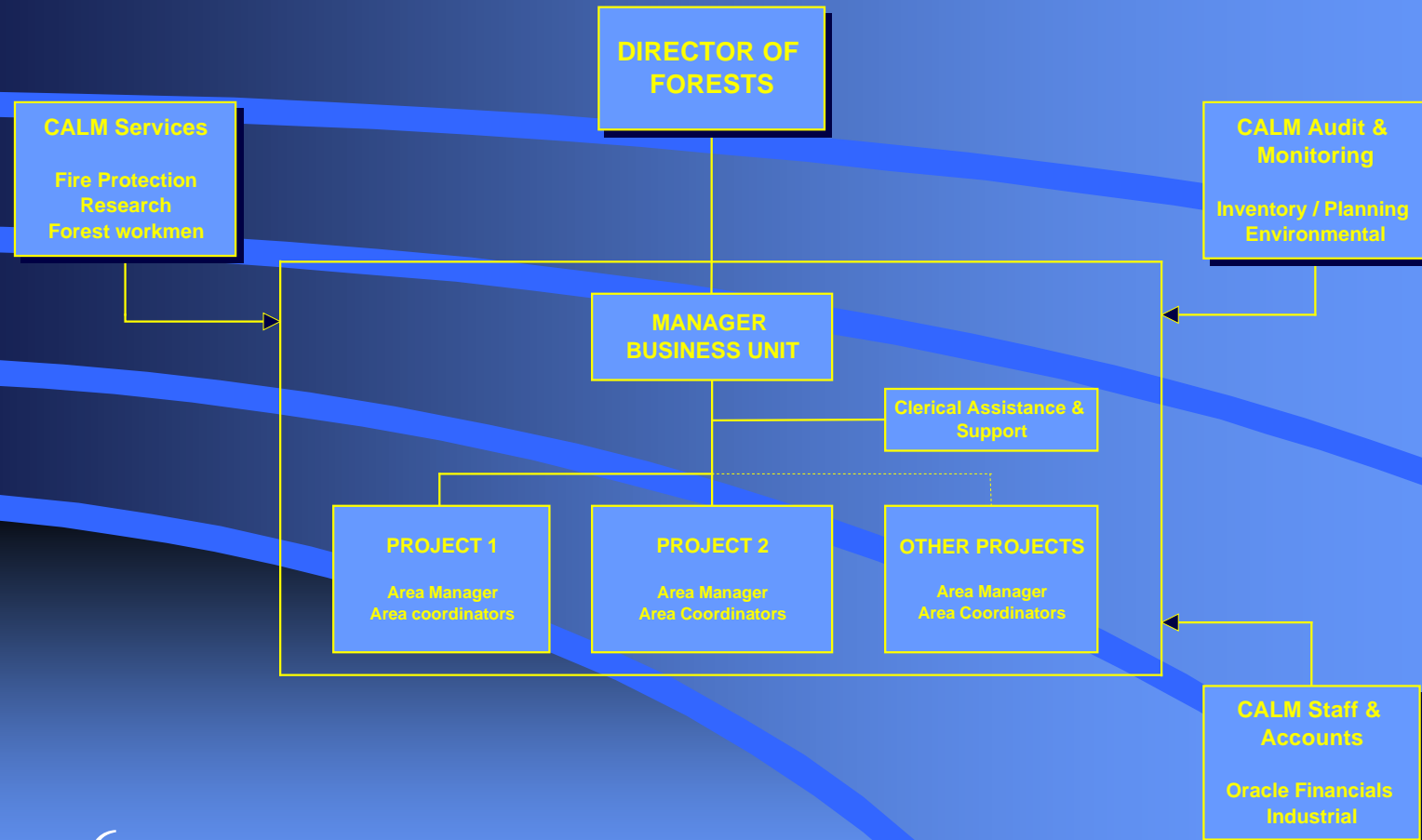


Figure 6

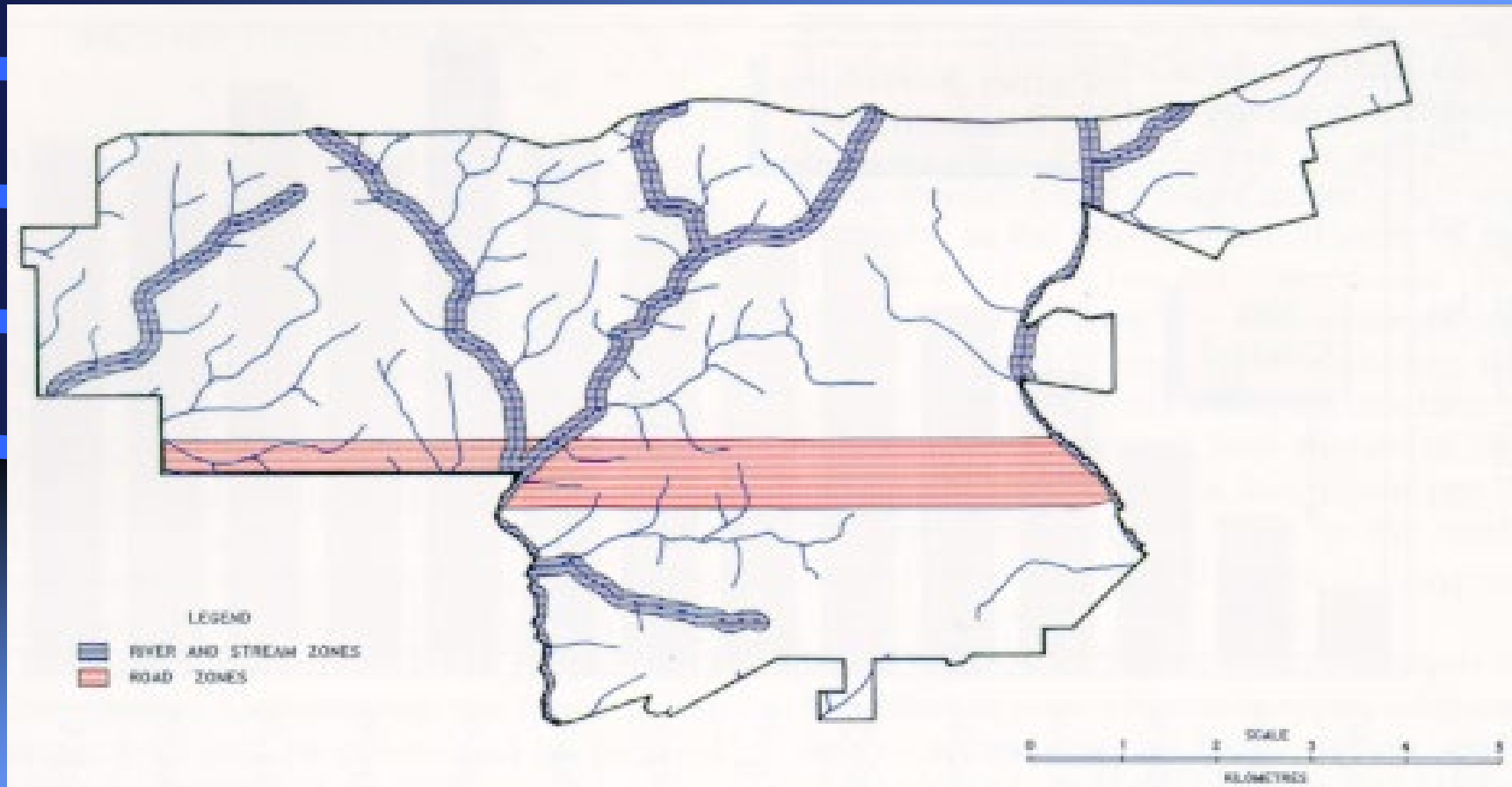
# Examples of the Integrated Approach



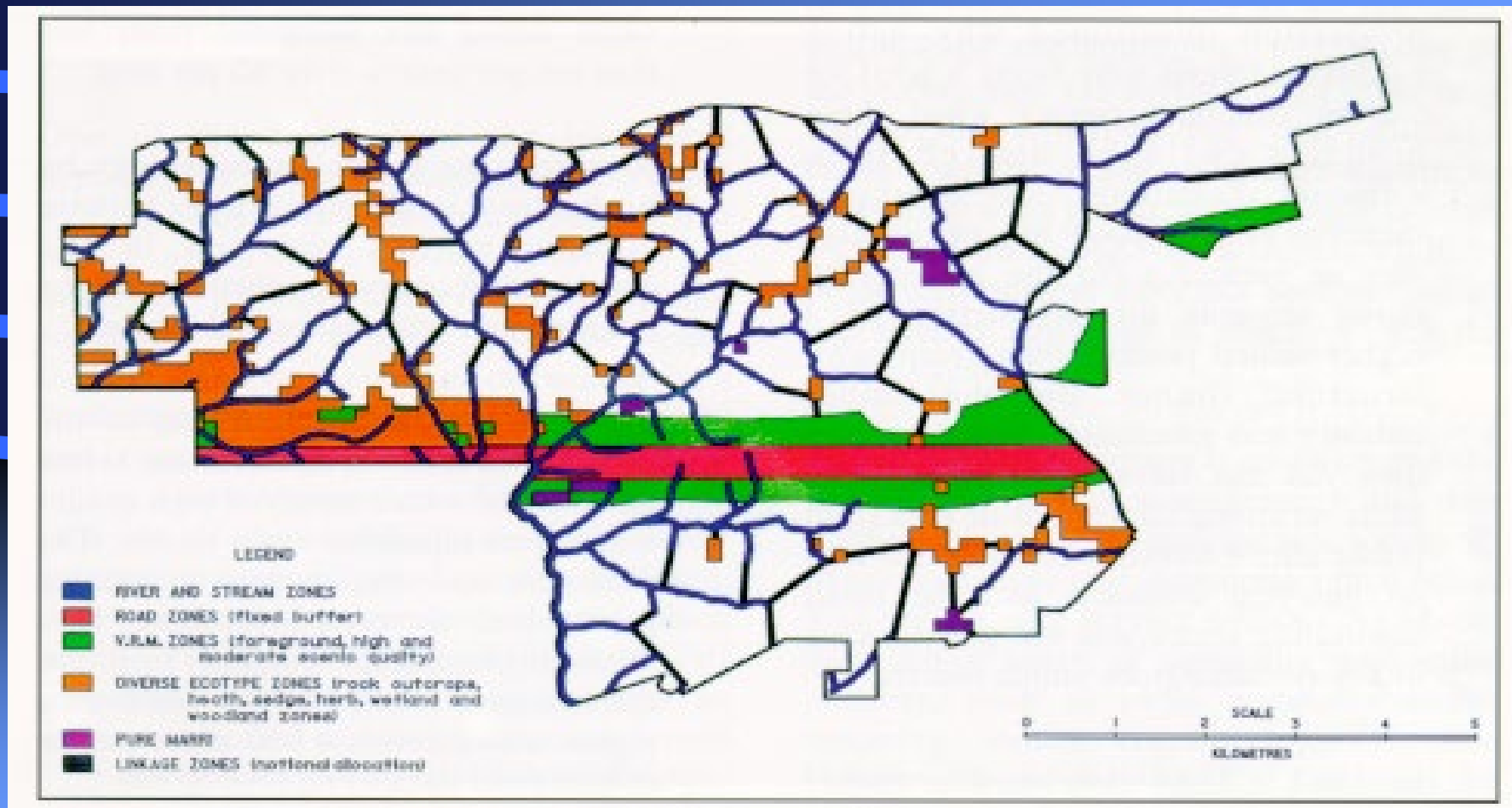
# Native forests in the South West

- 80 per cent of the original karri forest and 71 per cent of the original jarrah forest remain today
- 512,000 hectares of jarrah and 81,000 hectares of karri are in reserves protected from logging
- 46 per cent of the karri forest and 33 per cent of the jarrah forest are set aside in conservation reserves
- A minimum of 40% of the karri forest will retained in the old growth stage

# Distribution of road, river, stream and other zones, Jane Forest Block, Pemberton District, prior to 1994



# Distribution of road, river, stream and other zones, Jane Forest Block, Pemberton District in the 1994 Management Plan







# The effect of timber harvesting on mammal populations in the jarrah forest

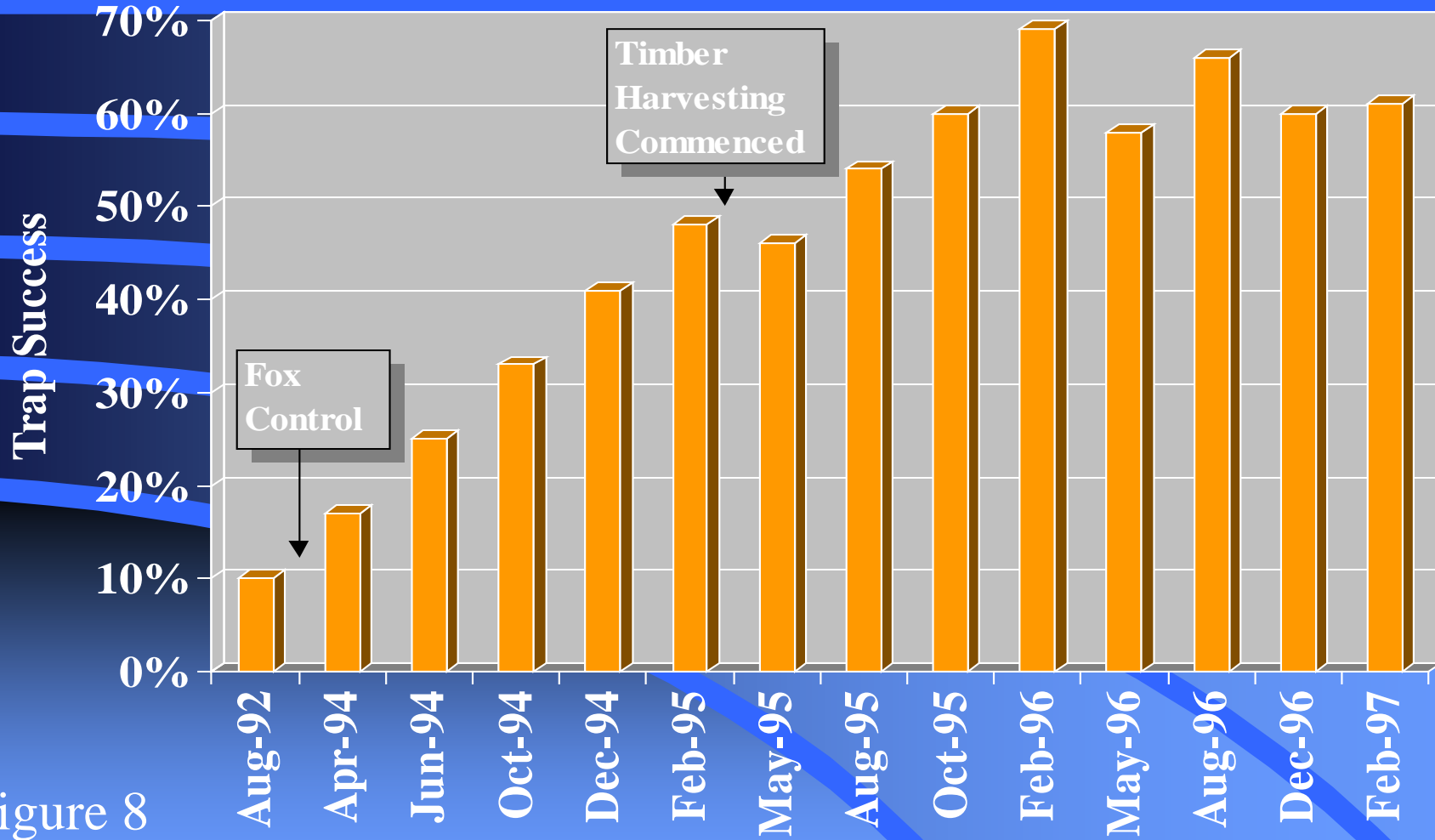


Figure 8

# Management of Damaging Agencies





# Nature-Based Tourism

200,000 people have visited the Tree Top Walk  
since it opened in September 1996



The Tree-Top Walk covers an area  
of 409 m<sup>2</sup>

7 square metres of land were used to support the Tree Top  
Walk



# Regional Land Rehabilitation









# Water Drawdown under Bluegum Plantations compared to Pasture

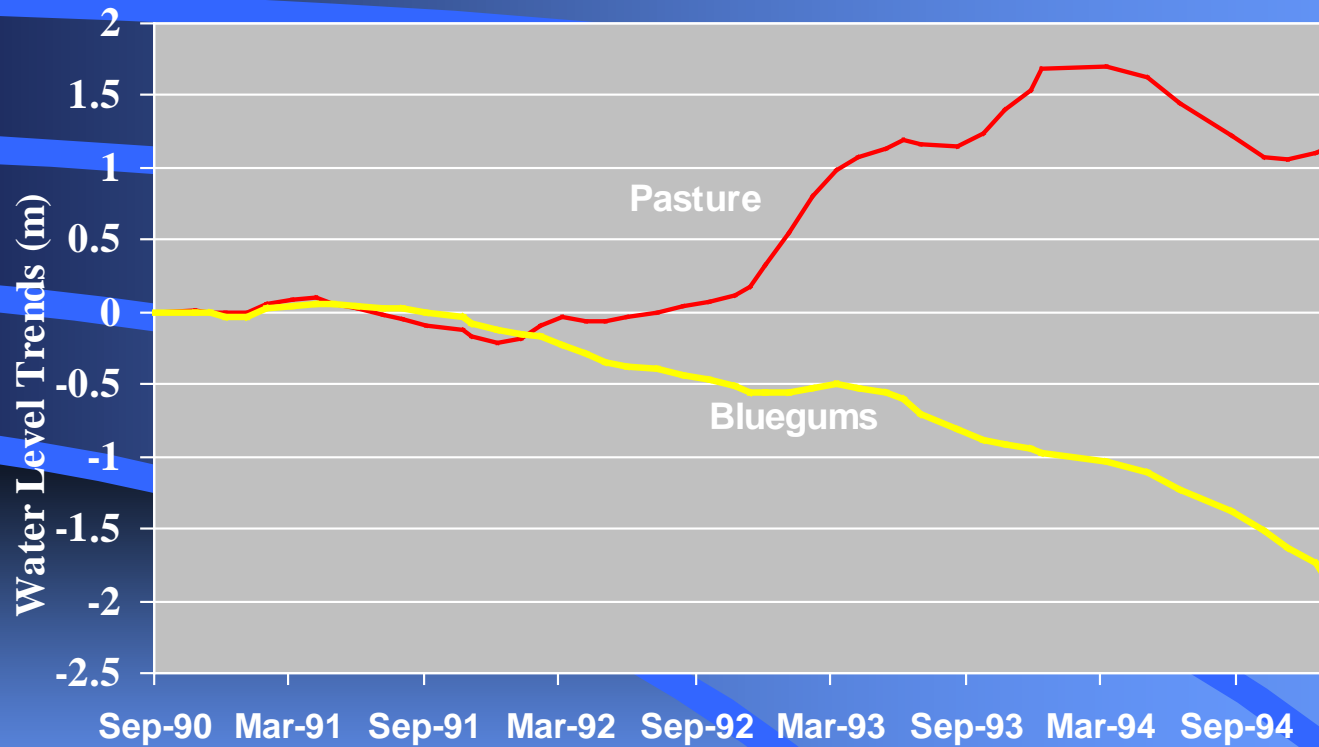


Figure 9

# Wildlife Conservation



## Numbat Sightings in Dryandra Forest

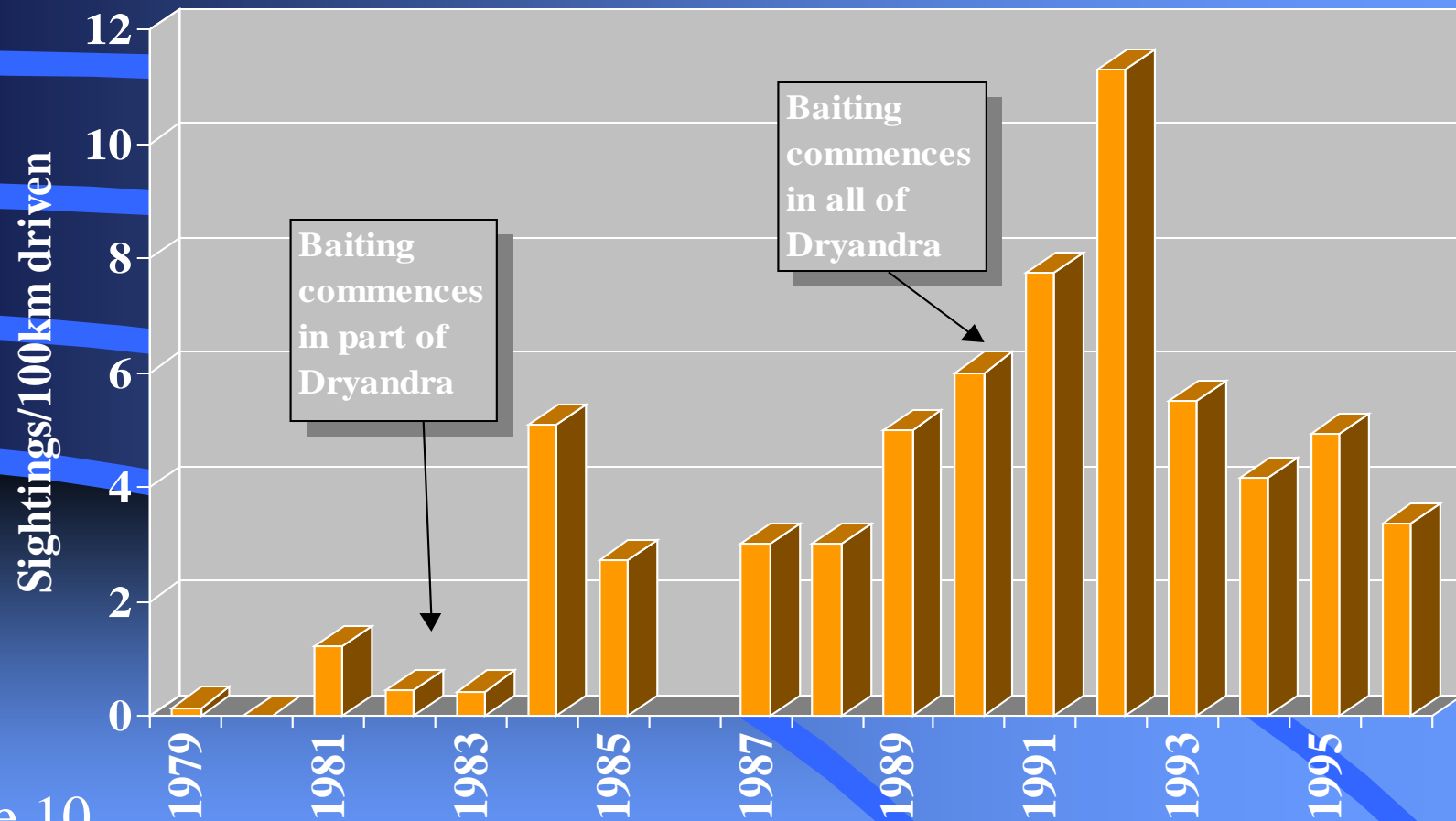


Figure 10

# The Case Against Integration



# Conclusion





“The objective became to develop a major commercial tree crop industry, on privately owned land in partnership with farmers, at a scale which would make a significant contribution to the rehabilitation of degraded agricultural land and river systems.”

# **The Integrated Approach to Conservation, Public Land and Wildlife Management and Commercial Forestry - Case Study Western Australia**

By S R Shea

Department of Conservation and Land Management  
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983

Invited paper presented at the New Zealand Forest Research  
Institute's 50th Jubilee Forestry Celebration Day, 2 April 1997,  
Rotorua Convention Centre, Rotorua, New Zealand

# The History of Plantation Development in Western Australia

# The Land Degradation Problem

# Groundwater level response at Lemon Catchment (annual rainfall 750mm) (after Agriculture WA et al, 1996)

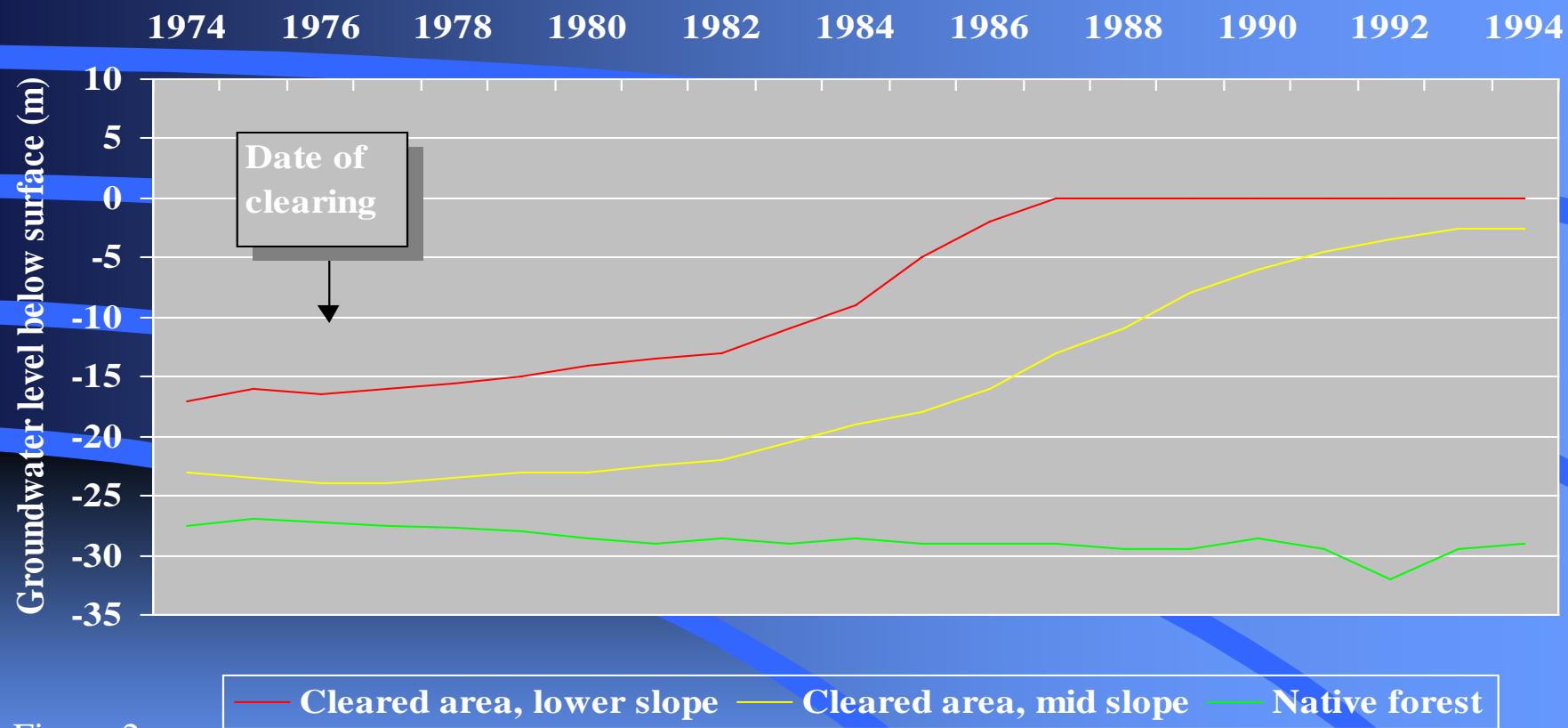


Figure 2



# Hydrograph showing groundwater response to alley farming system

(after Short and Skinner, 1996)

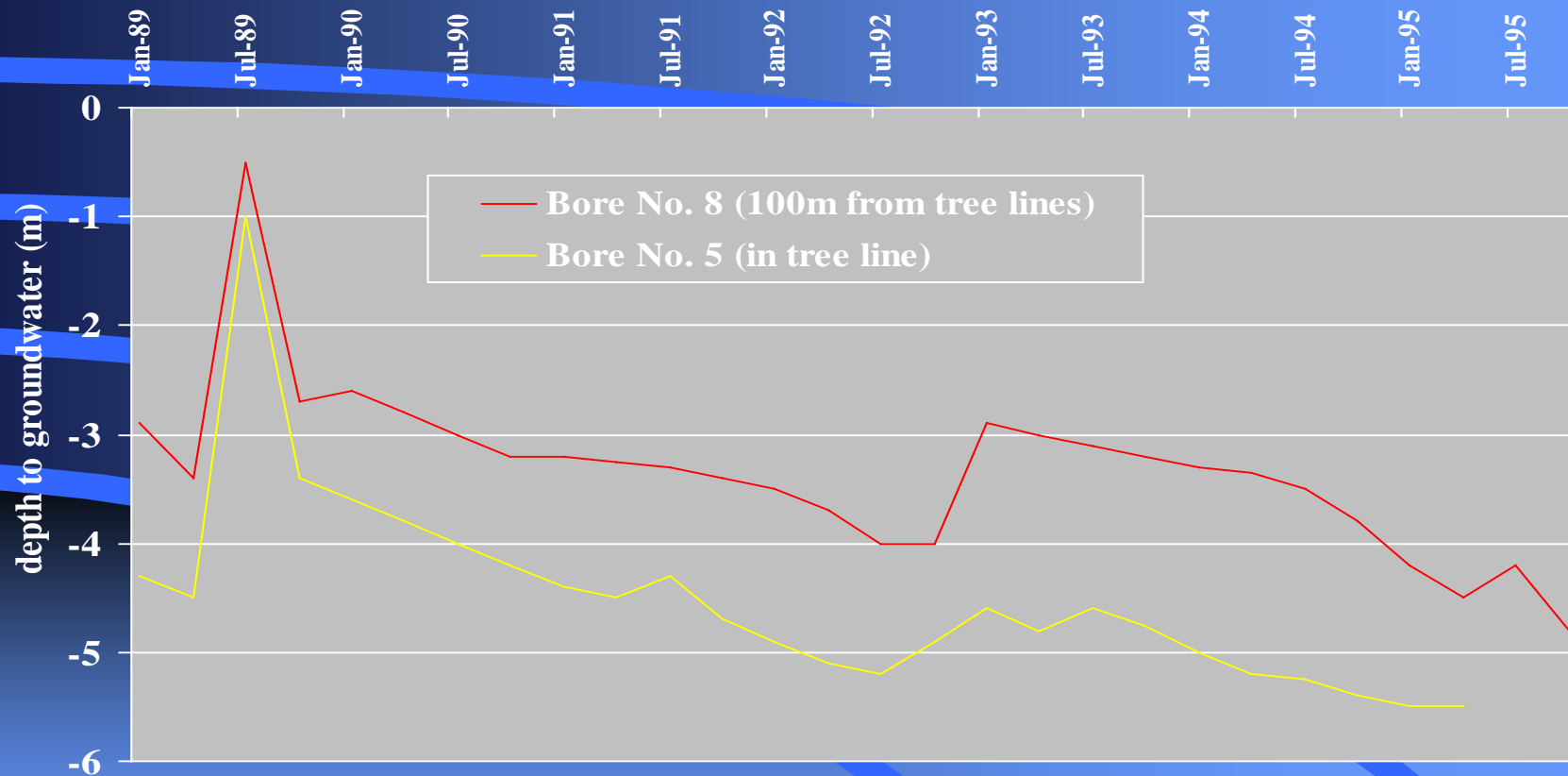


Figure 4

# Land Acquisition

# The Tree Crop Species for Farmland

# Tree Breeding

# Site Selection for Tree Crops



# *E. globulus* site productivity assessment for a typical farm

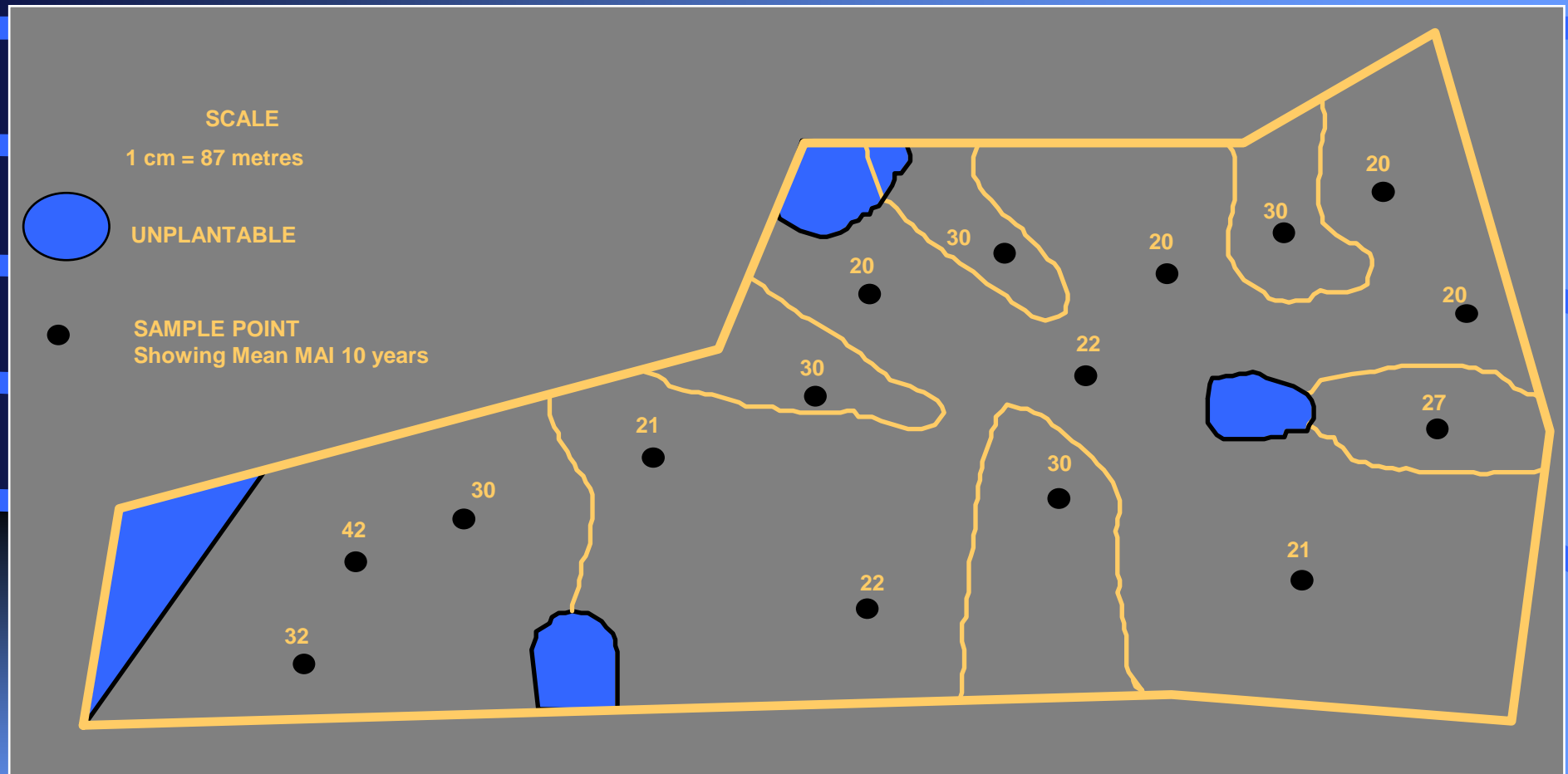


Figure 5

# Tree Crop Establishment

## Effect of site preparation on tree volume and survival of *E. globulus* after 9 months growth on a grey sand soil

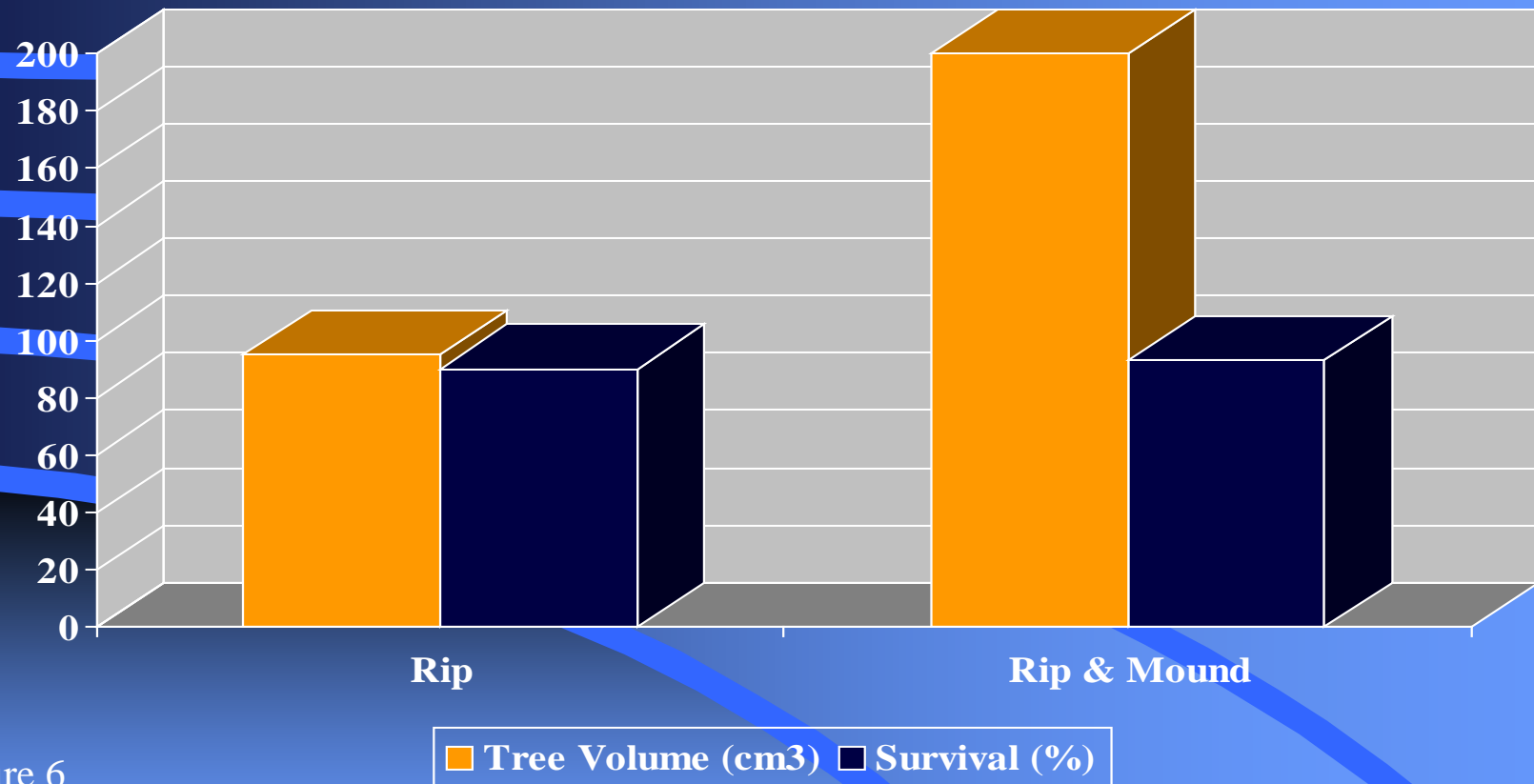


Figure 6

# Response to second year weed control of *E. globulus* on different soils

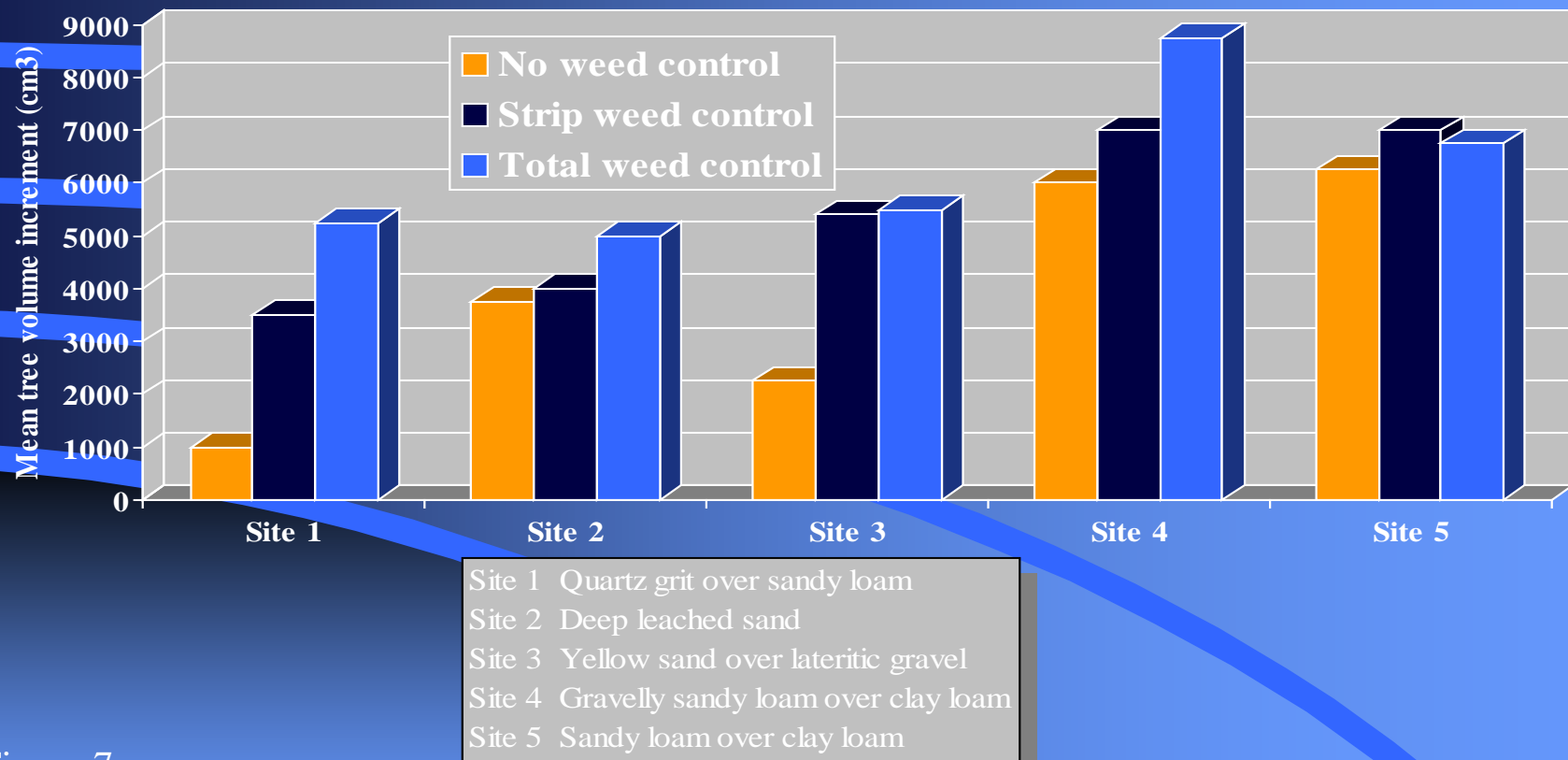


Figure 7

# Silviculture

# Fertilization



## Basal area response to Nitrogen and Phosphorus over four years after fertilization

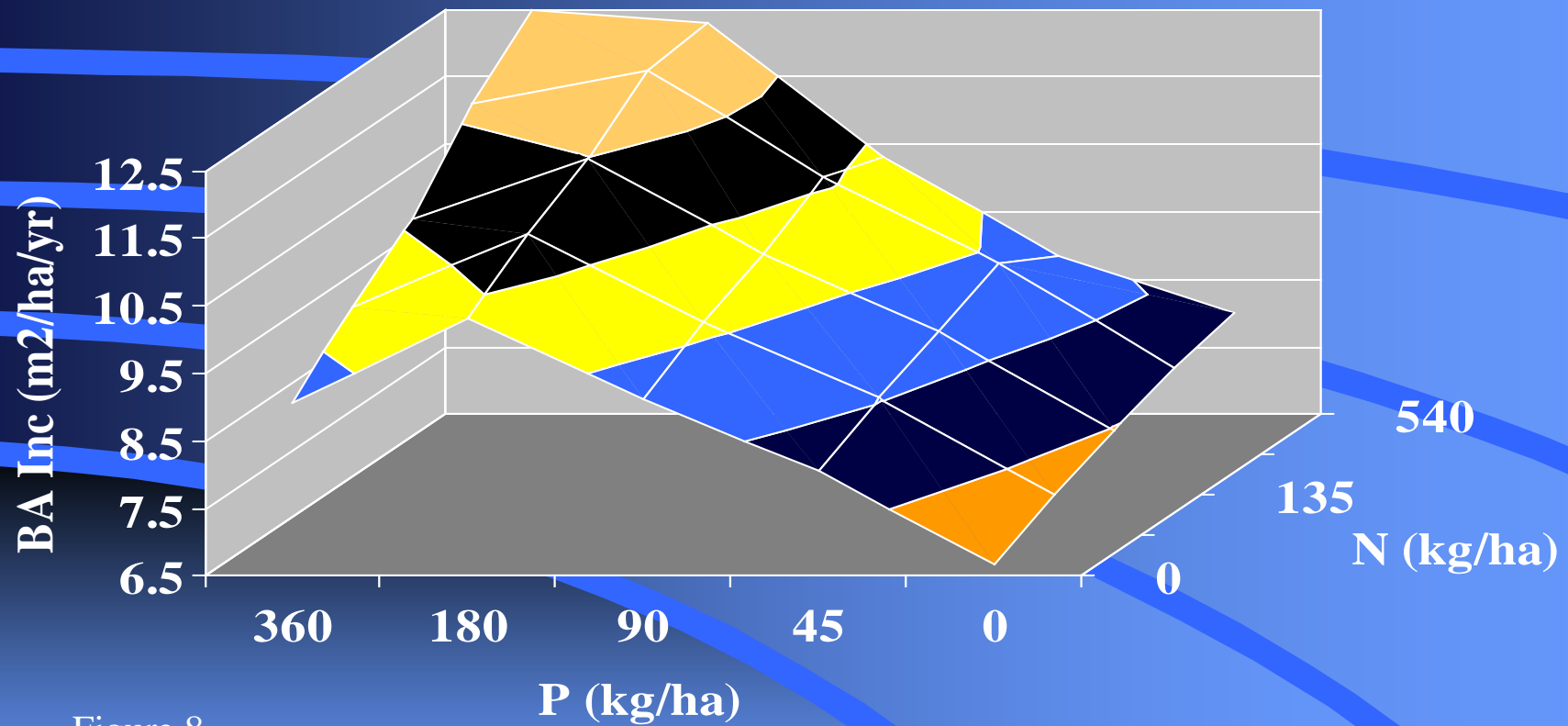


Figure 8

## Basal area response to Nitrogen and Phosphorus application by thinned *P. radiata*

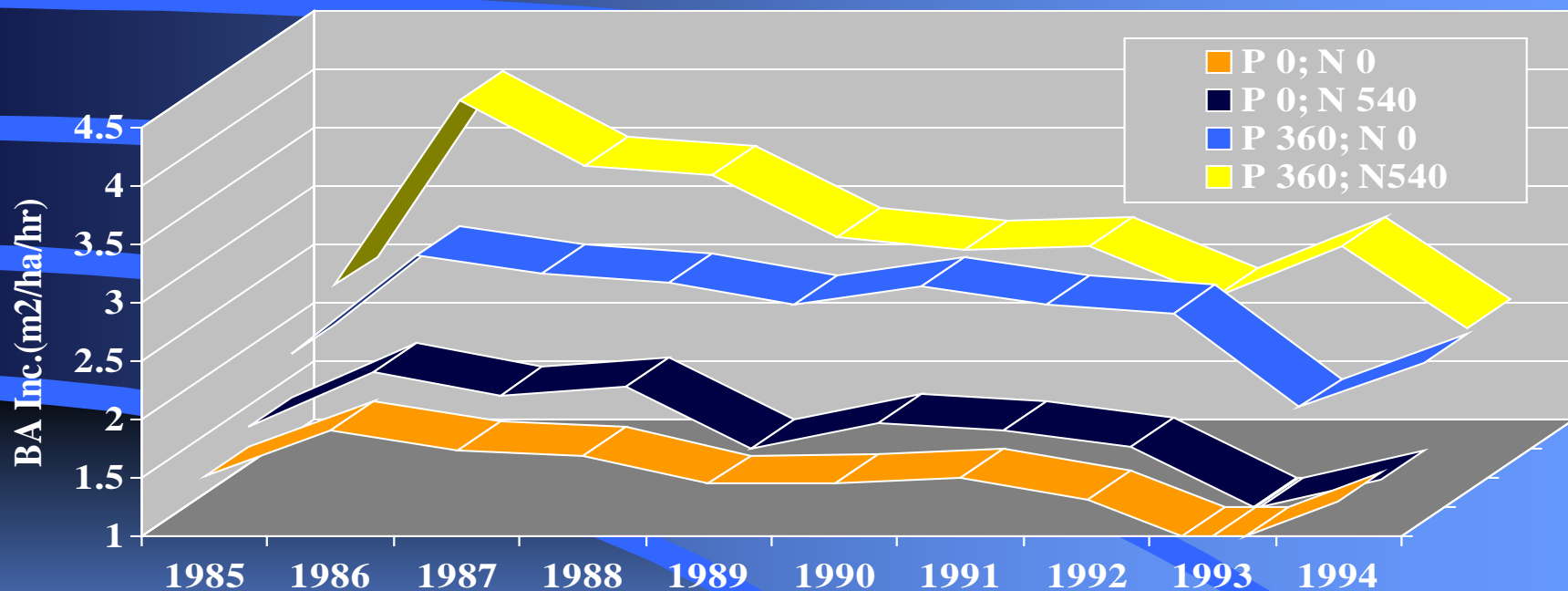


Figure 9

## 3 year *P. radiata* volume increment ( $\text{m}^3\text{ha}^{-1}$ )

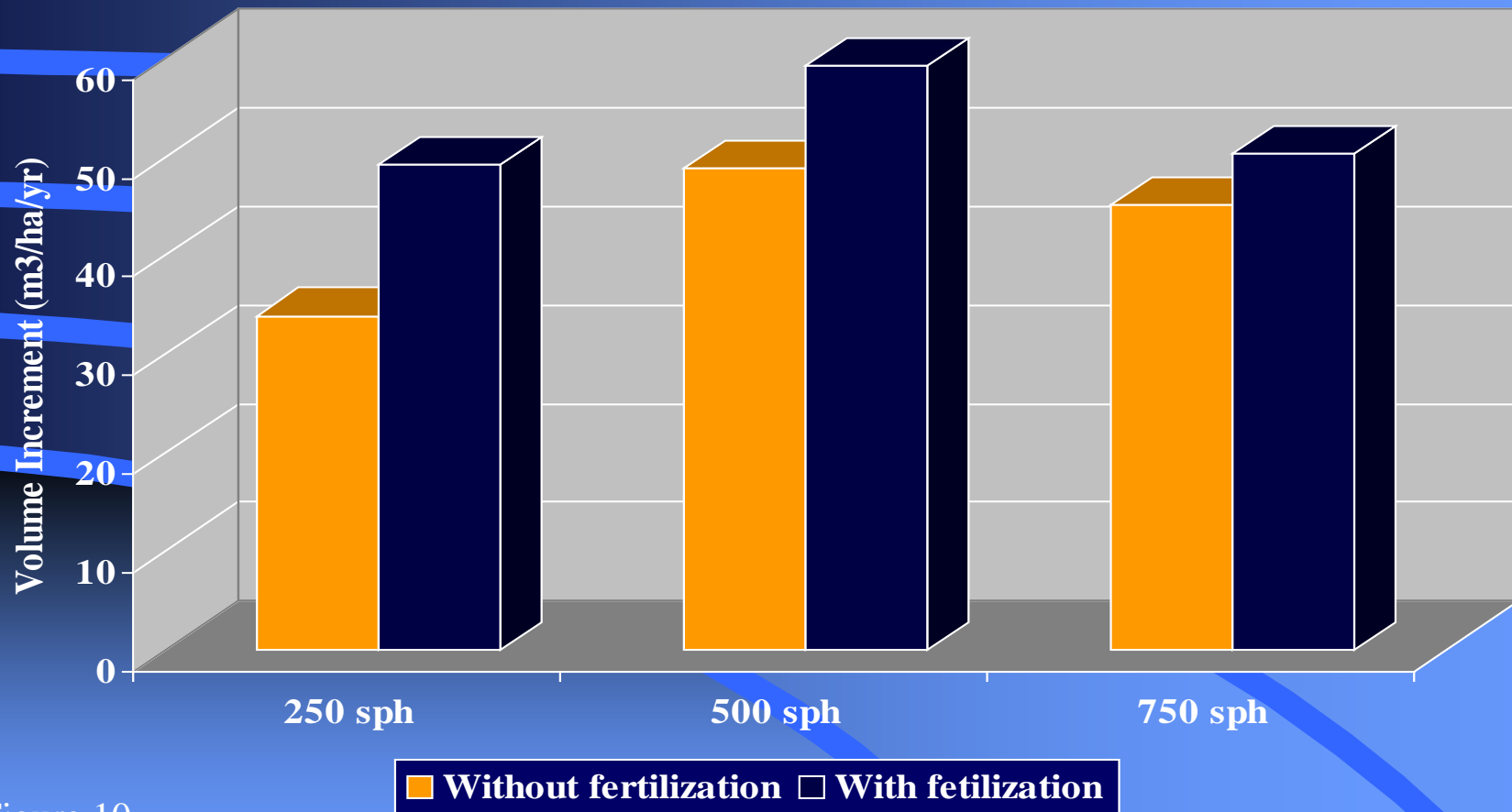


Figure 10

## 3 year *P. pinaster* volume increment ( $\text{m}^3\text{ha}^{-1}$ )

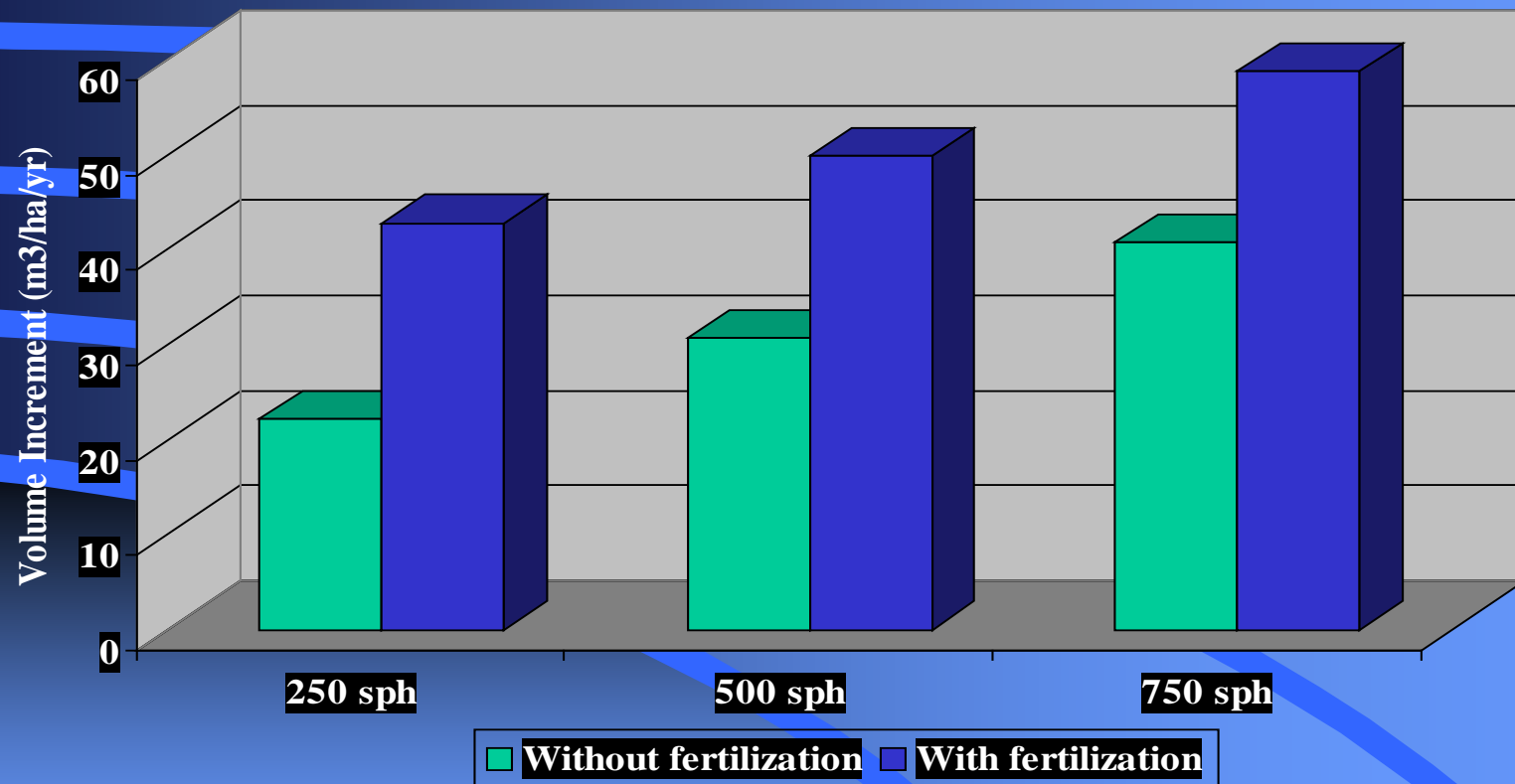


Figure 11

## Volume growth by *E. globulus* following fertilization

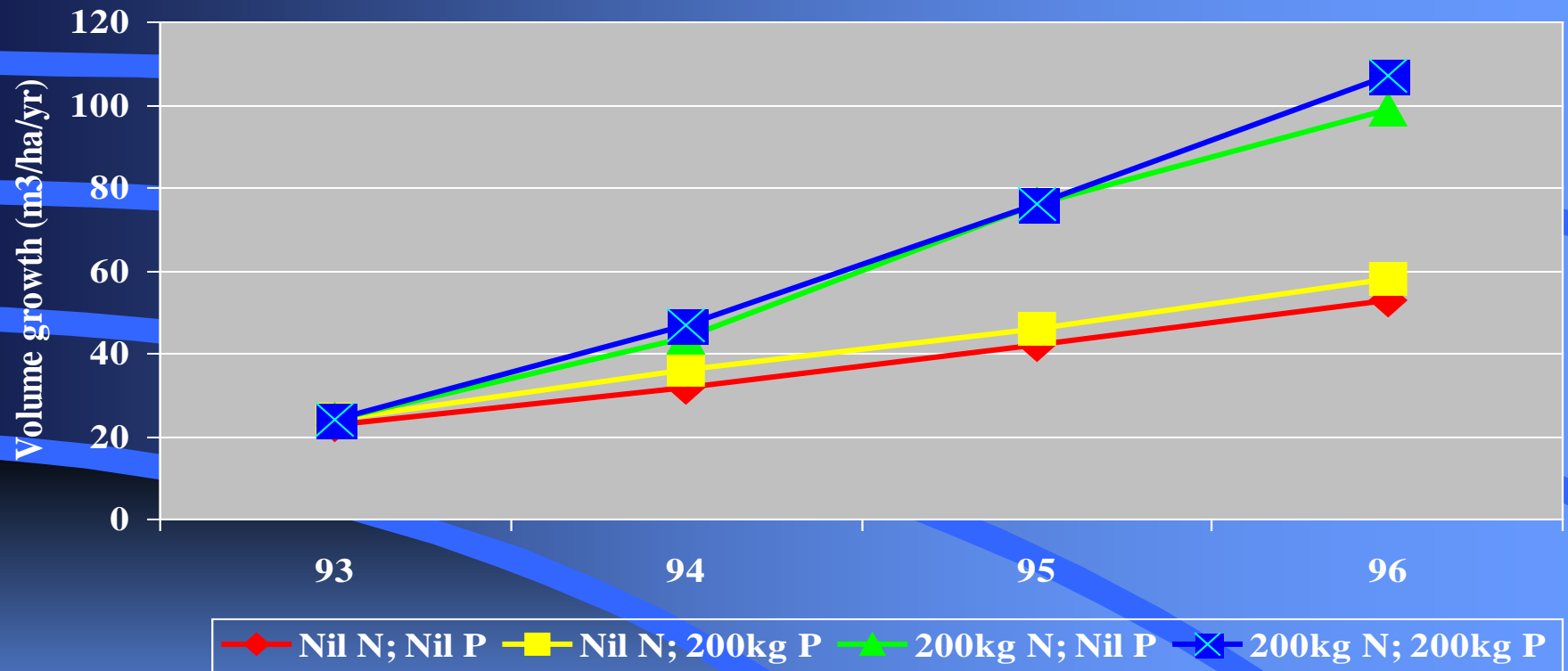


Figure 12

# The Economic Return from Tree Crops



# Sensitivity of profitability for *E. globulus*

IRR (real)

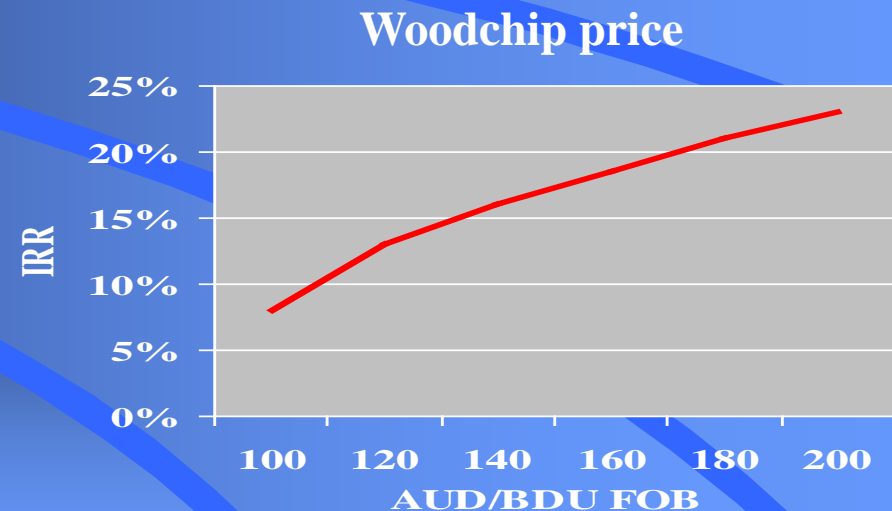
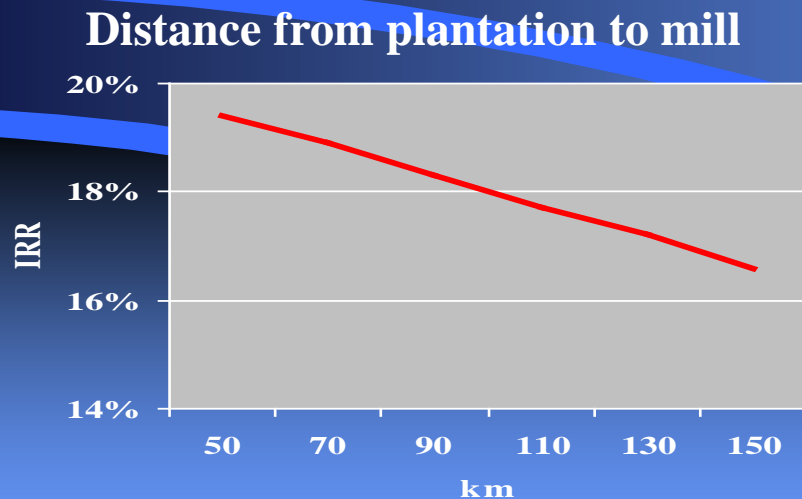
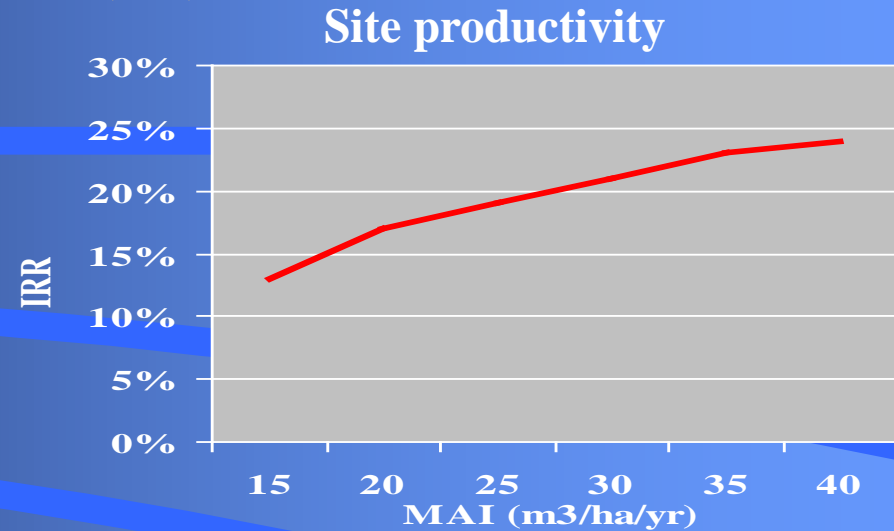


Figure 13

# *Pinus radiata* Sharefarming

# The Bluegum Project

# Maritime (*Pinus pinaster*) Pine Project

# Land availability in the intermediate rainfall zone for maritime pine

Figure 15

# Tree Crops on Irrigated Land



# Sandalwood growth and vigour with and without attachment to host

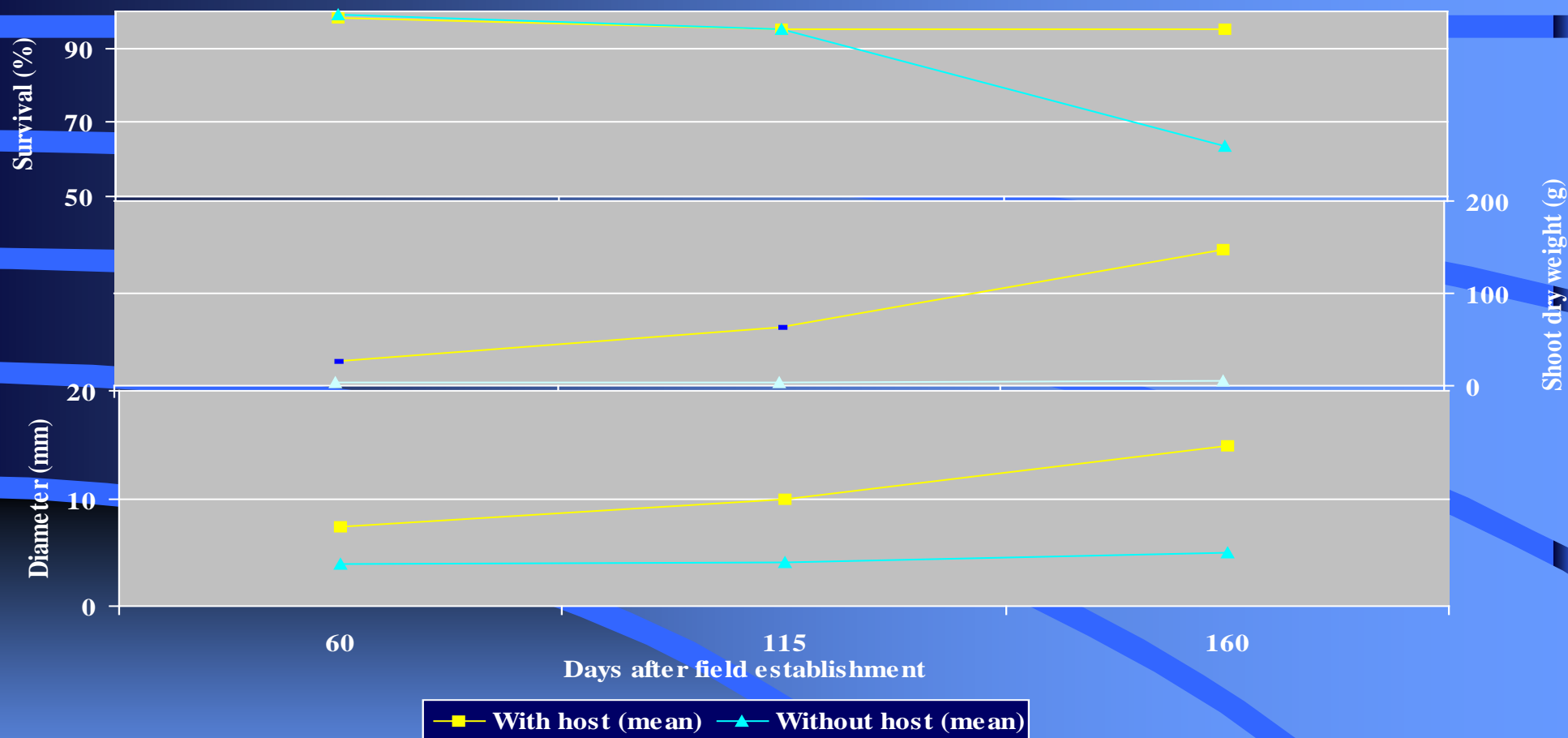


Figure 16

# Oil Mallee Project

# Conclusion

# Plantations and tree crops South-West of Western Australia

Figure 1

# Salinity hazard zones in south western Australia

(after Agriculture WA et al, 1996)

Figure 3

## Case study - map of Potters farm

Figure 14





**SUSTAINABILITY**





# Forest walks project comes under attack



THE Valley of the Giants \$2 million tourist walks project near Waipole has come under attack by conservationists.

By ANNA PASTEUR  
Conservation activist and through the most popular old tracks, Mr. Nelson said.

## Tourism industry criticises Valley of the Giants project

By GARYN COATNEY

THE Department of Conservation and Land Management has been further criticised by the local tourism industry over its Valley of the Giants forest project.

The main concern raised during a telephone survey was about CALM's possible furry into business ventures.

The survey was conducted by the Department at the suggestion of CALM. Waipole district manager, Campbell, who said the project was a "disaster" and the "most expensive" of the project.

### CALM

THE cost of creating new tourism facilities in the Valley of the Giants forest has been reviled after repeated questioning of the Department of Conservation and Land Management.

CALM

## CALM ventures condemned

By GARYN COATNEY

WALPOLE tourist operators have called on the Department of Conservation and Land Management not to pursue commercial ventures associated with its Valley of the Giants forest project.

Mr Greg Mair has not ruled out the possibility of opening a restaurant or cafe in the forest and setting a franchise in the area.

Mr Mair said the project was constantly developing.

But clients might indicate a demand for a restaurant or cafe in the future.

If an eating facility was built, it would need to comply with CALM's environmental conditions and management plans.

"There would be equity in arriving who will develop that business," Mr Mair said.

When asked if CALM was considering appointing a franchisee, Mr Mair replied "not at this stage" but if there ever is, there will be a process of advertising and public tender.

Mr Mair said the Government had a role in promoting eco-tourism.

Paul Llewellyn said the organisation should not be involved in ventures which had little to do with its charter of protecting the environment.

"If it was an urban park like Kings Park in Perth, I can understand why they would need such facilities."

"But in a wild, remote place like Waipole, it's not appropriate."

Former CALM research scientist Jim Goodsell said public servants were behaving like entrepreneurs, reminiscent of W.A.I.T.

Mr Goodsell, the owner of the caravan park, Valley of the Giants Ecopark, feared CALM would force him to change the name of his business when it registered its trademark.

"Feeling around with business names is bizarre," he said.

Mr Mair believed Mr Goodsell would stand to gain from the increasing number of tourists to the park.

CALM expected would visit the park.

Businesswoman Cheryl Whitaker, who owns a caravan 4km from the forest, fears a future CALM decision to run a restaurant will interfere with her income.

She is also concerned the area will miss out on tourism dollars if buses directly to the forest, without stopping along the way.

"Remembering the name of the area is going to be a disaster," she said. "But it's hard to pin down CALM's plans."

## Giants protest plan scrapped

ENVIRONMENTALISTS have been disappointed that the plan to open the Valley of the Giants forest to the public last month.

"It could have negative effects if we soon we're criticised all of CALM's actions," he said.

"When CALM does things well, we have to let them know."

And they do a good job in certain respects.

He was disappointed the venture had not received an invitation to attend the opening.

Mr Selby said environmentalists supported CALM's attempt to raise money from some tourism-related projects because it endorsed the project to log forests for money.

But they were concerned CALM intended to use the single forest as a model for the whole forest.

They were concerned CALM's intention of building a track and entering into tourism in the forest and entering into tourism in the forest and entering into tourism in the forest.

Mr Evans said he had seen a brochure for visitors to the Valley of the Giants.

## Forest project attacked

From page 1

Mr Selby said the project was constantly developing.

But clients might indicate a demand for a restaurant or cafe in the future.

If an eating facility was built, it would need to comply with CALM's environmental conditions and management plans.

"There would be equity in arriving who will develop that business," Mr Mair said.

When asked if CALM was considering appointing a franchisee, Mr Mair replied "not at this stage" but if there ever is, there will be a process of advertising and public tender.

Mr Mair said the Government had a role in promoting eco-tourism.

Paul Llewellyn said the organisation should not be involved in ventures which had little to do with its charter of protecting the environment.

"If it was an urban park like Kings Park in Perth, I can understand why they would need such facilities."

TREE TOP WONDER: Bill Campbell is described by a slim pylon that will carry a walkway through the forest canopy.

Mr Selby said the project was constantly developing.

But clients might indicate a demand for a restaurant or cafe in the future.

If an eating facility was built, it would need to comply with CALM's environmental conditions and management plans.

"There would be equity in arriving who will develop that business," Mr Mair said.

When asked if CALM was considering appointing a franchisee, Mr Mair replied "not at this stage" but if there ever is, there will be a process of advertising and public tender.

Mr Mair said the Government had a role in promoting eco-tourism.

Paul Llewellyn said the organisation should not be involved in ventures which had little to do with its charter of protecting the environment.

"If it was an urban park like Kings Park in Perth, I can understand why they would need such facilities."

TREE TOP WONDER: Bill Campbell is described by a slim pylon that will carry a walkway through the forest canopy.