The Development and Future Potential of Tree Crop Industries on Farmlands in Western Australia

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The History of Plantation Development in Western Australia

“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 Land Degradation Problem

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

(after Agriculture WA et al, 1996)

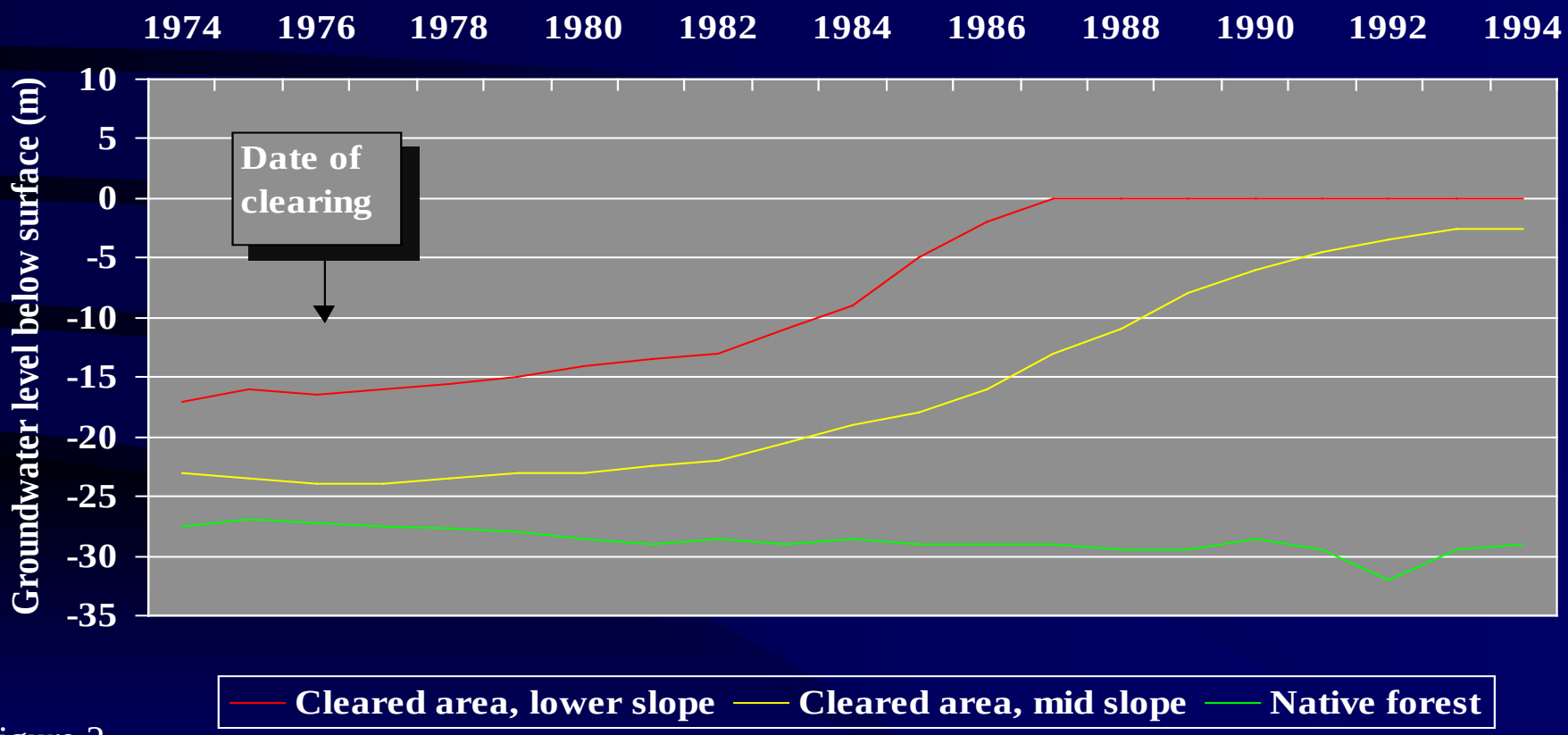


Figure 2

Hydrograph showing groundwater response to alley farming system

(after Short and Skinner, 1996)

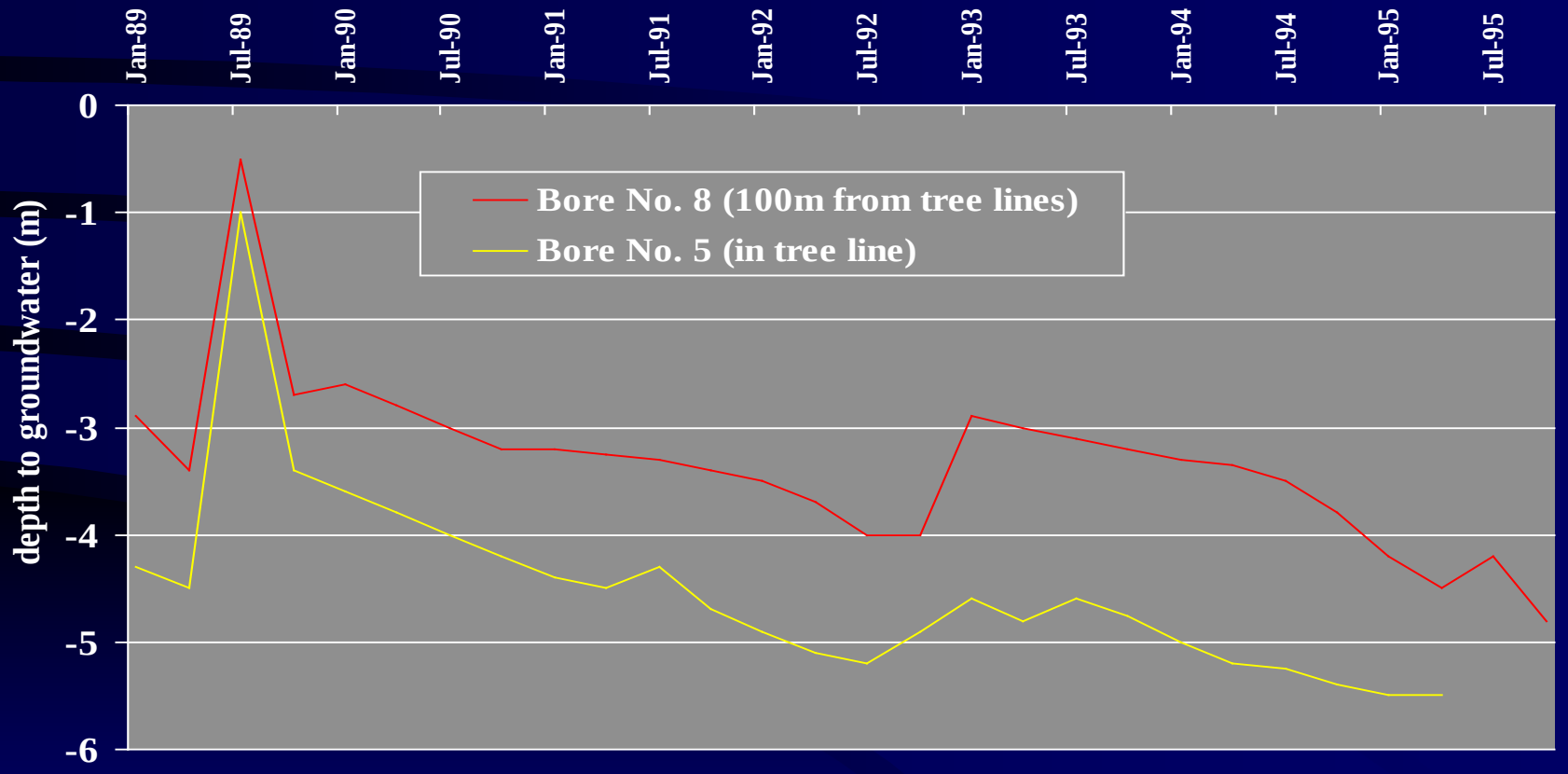


Figure 4

Land Acquisition

The Tree Crop Species for Farmland

Tree Breeding

Site Selection for Tree Crops

E. globulus site productivity assessment for a typical farm

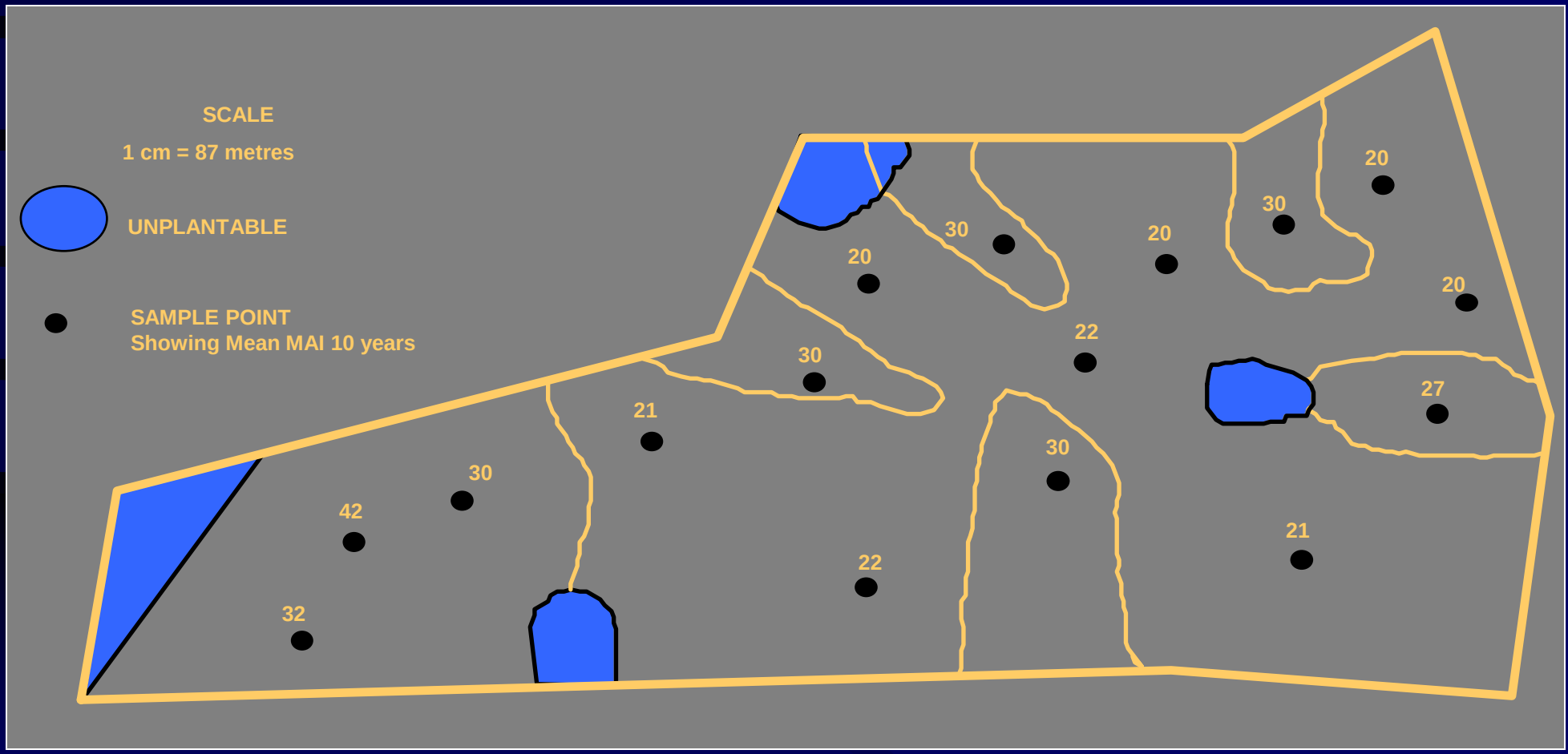


Figure 5

Tree Crop Establishment

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

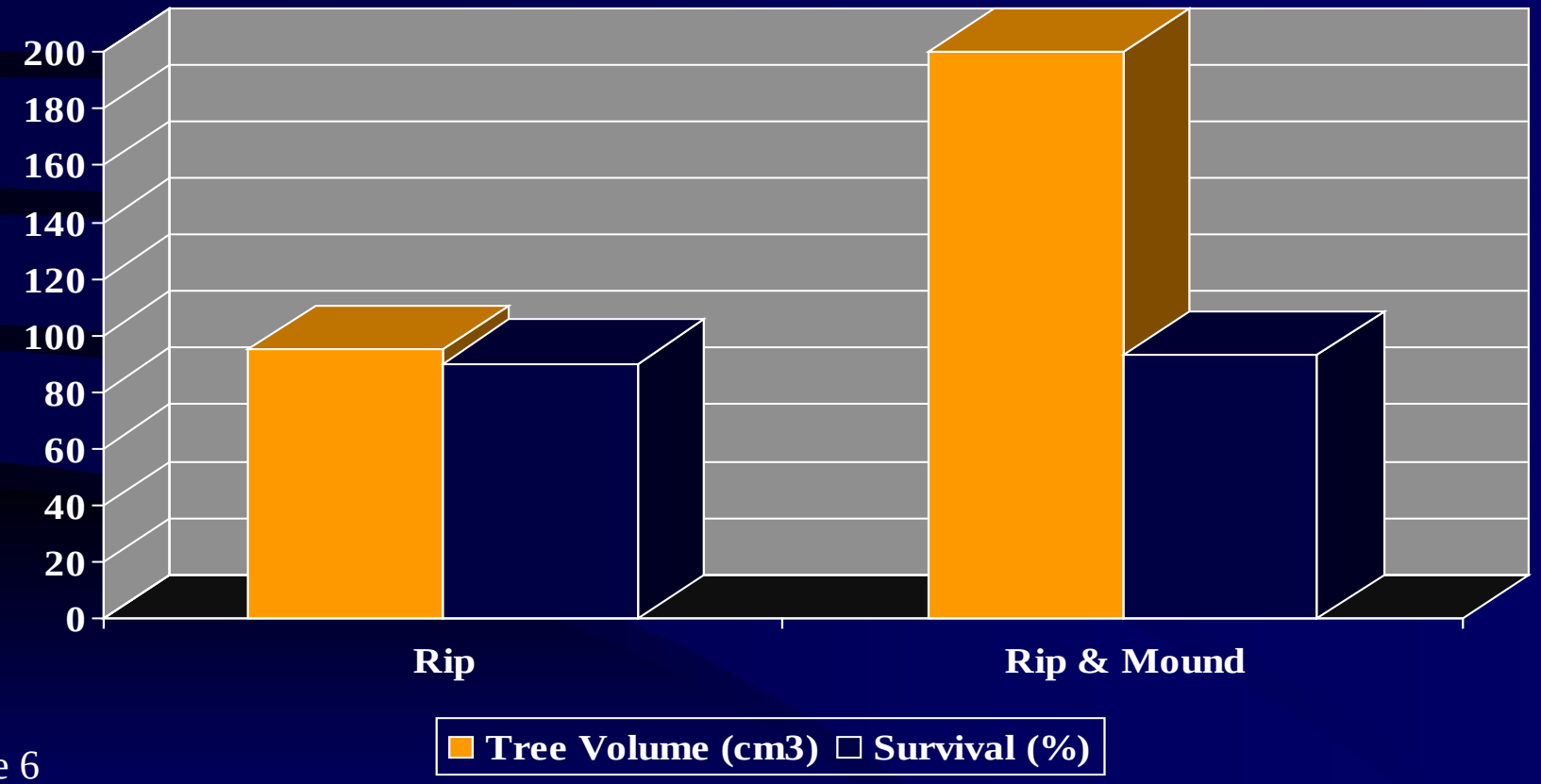


Figure 6

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

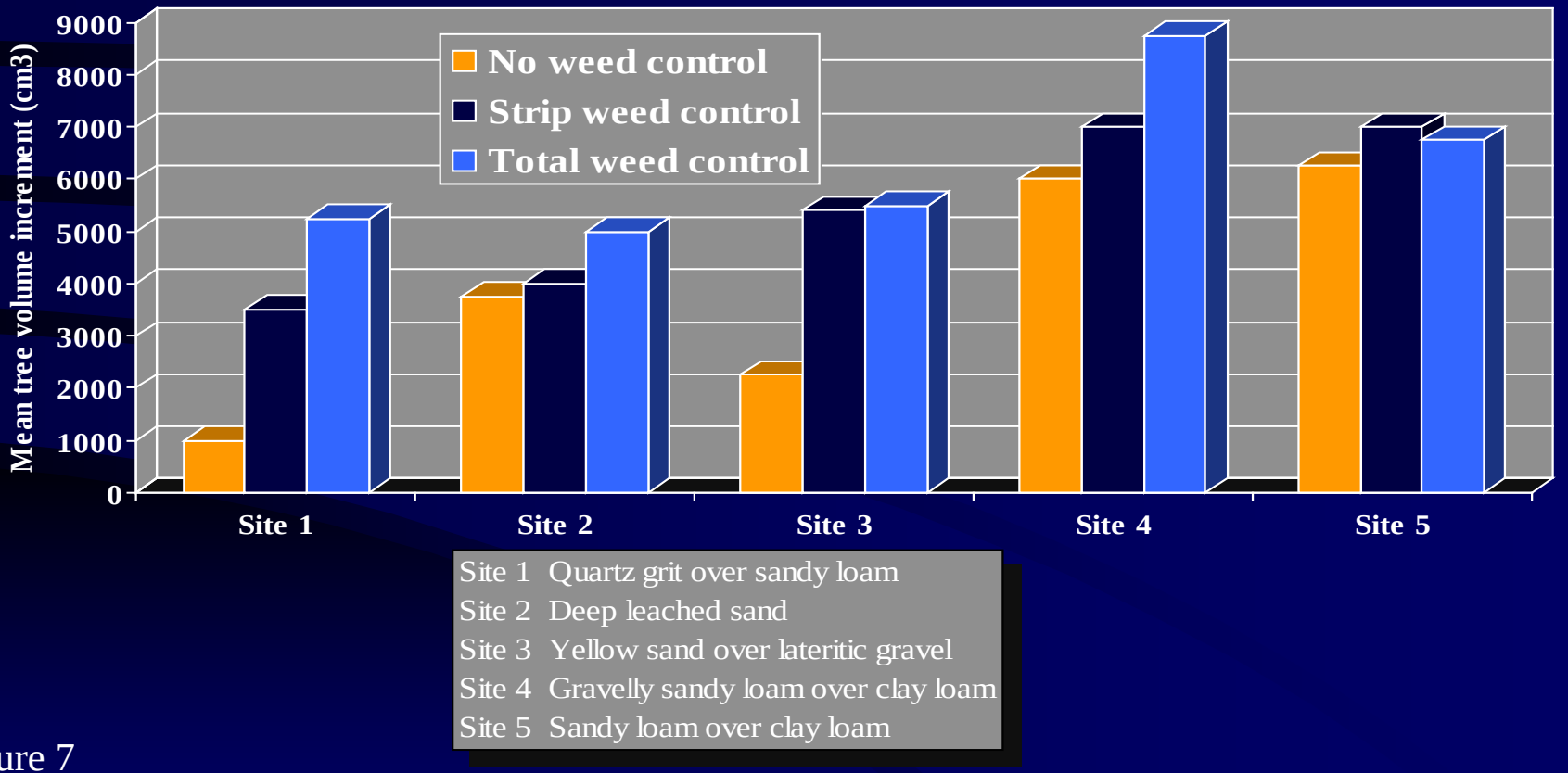


Figure 7

Silviculture

Fertilization

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

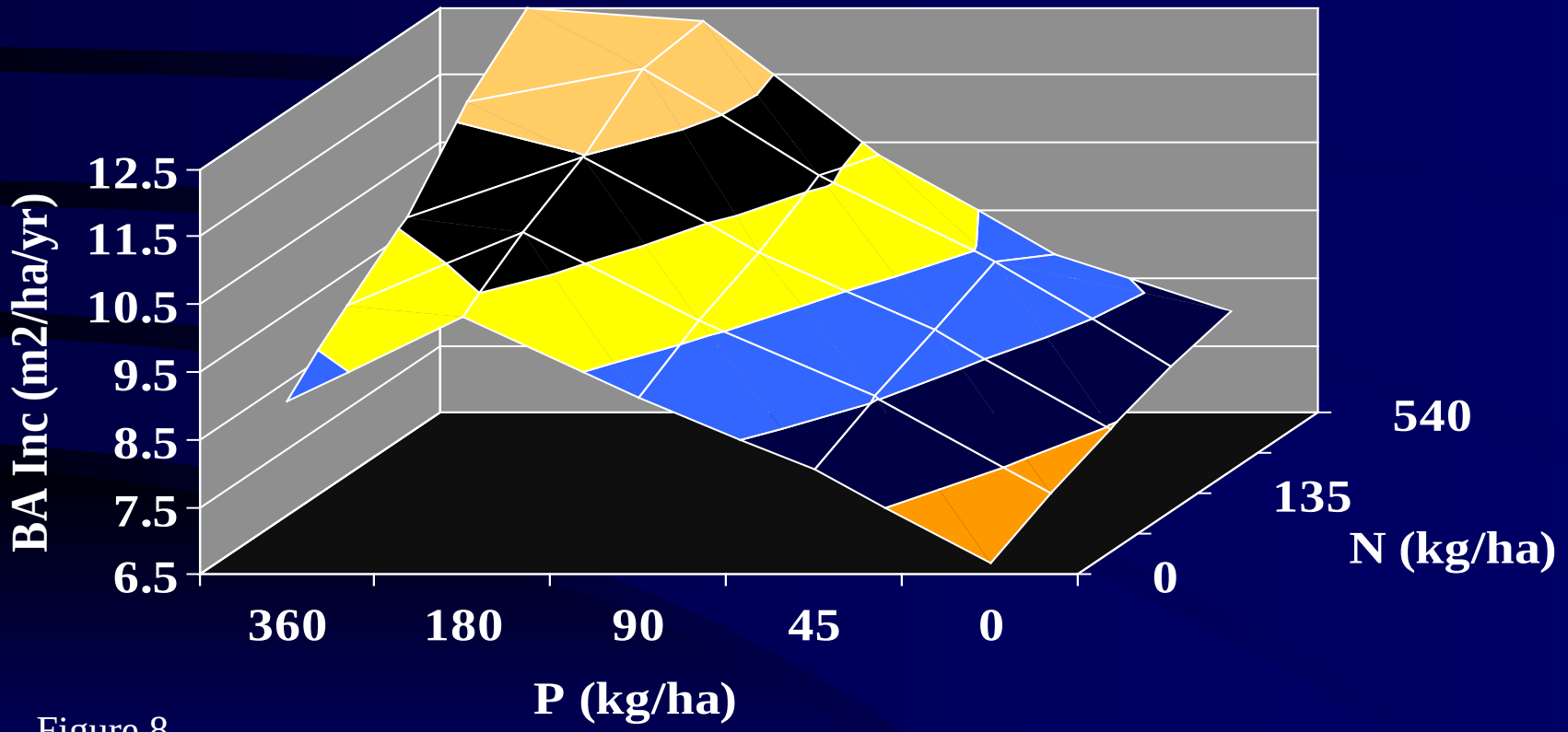


Figure 8

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

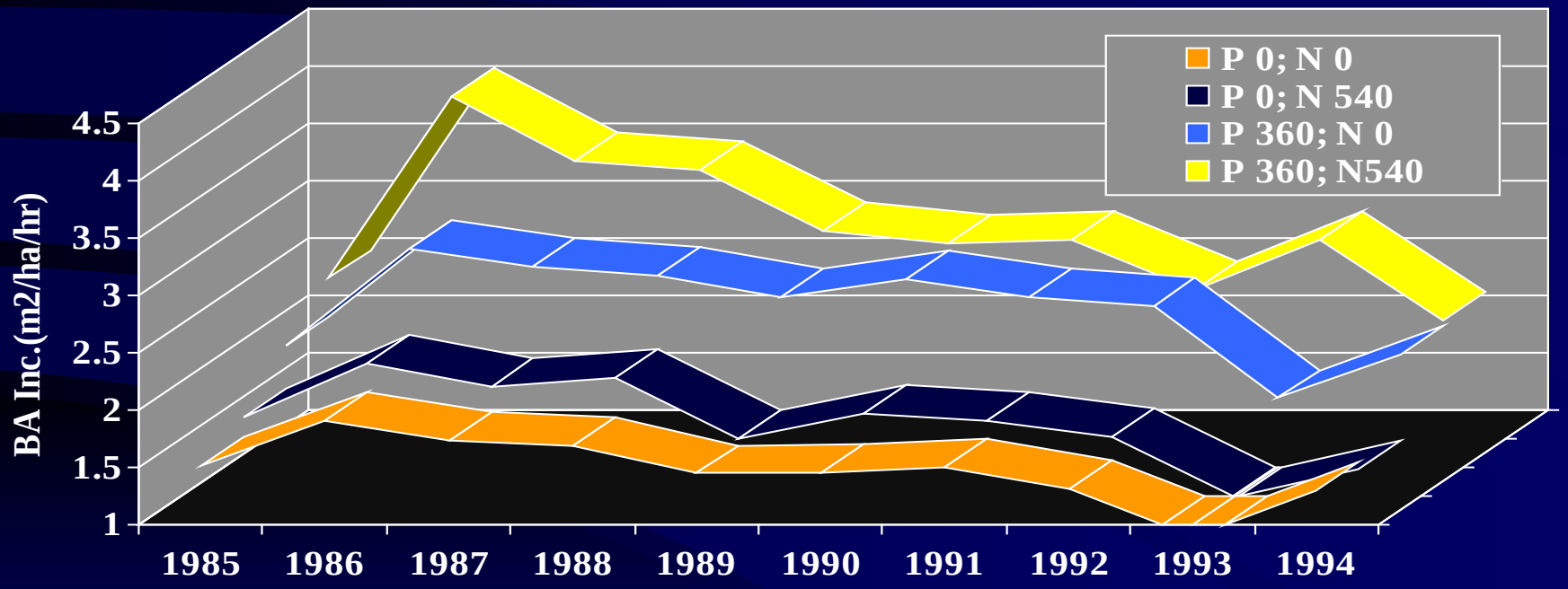


Figure 9

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

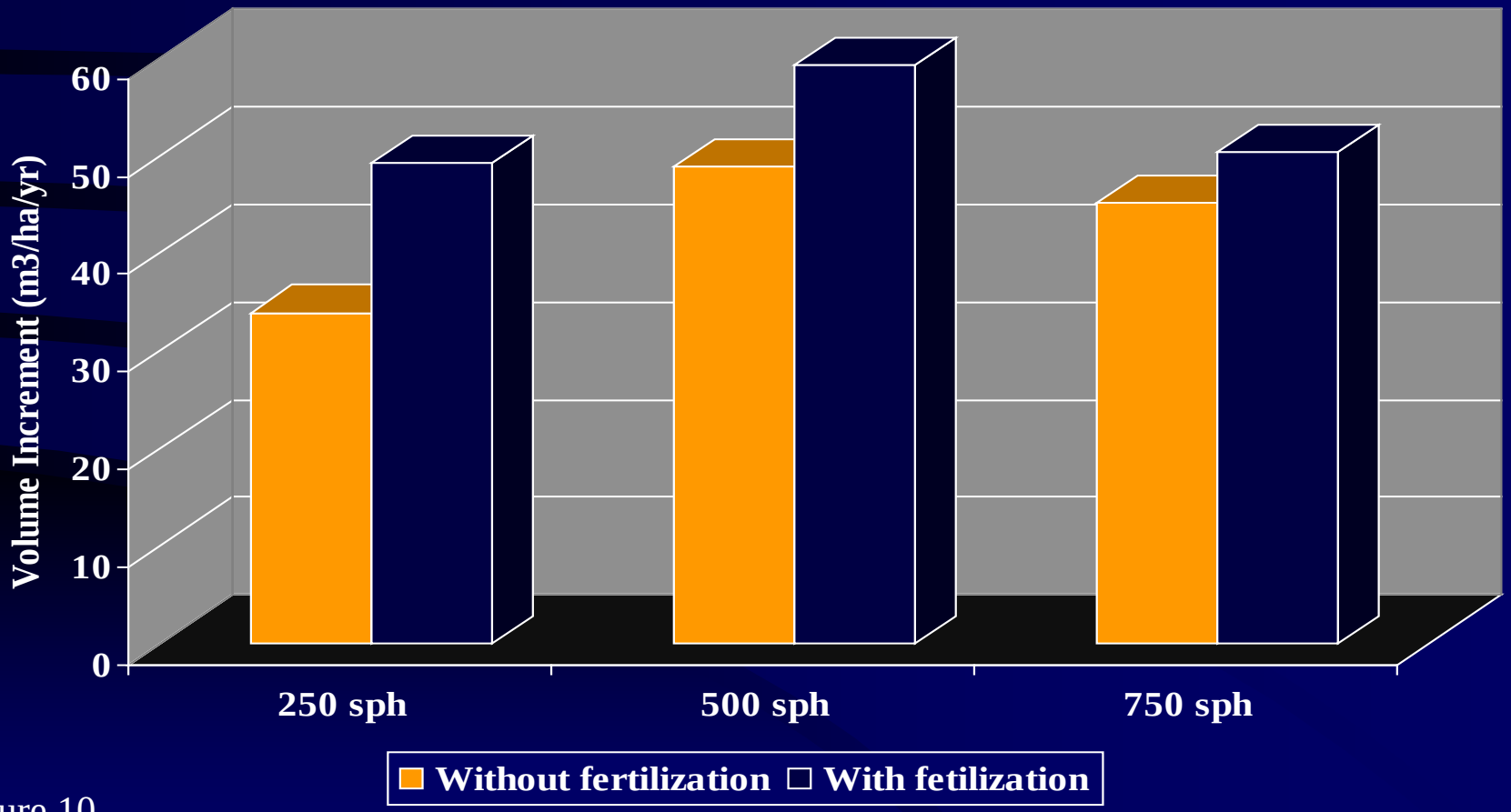


Figure 10

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

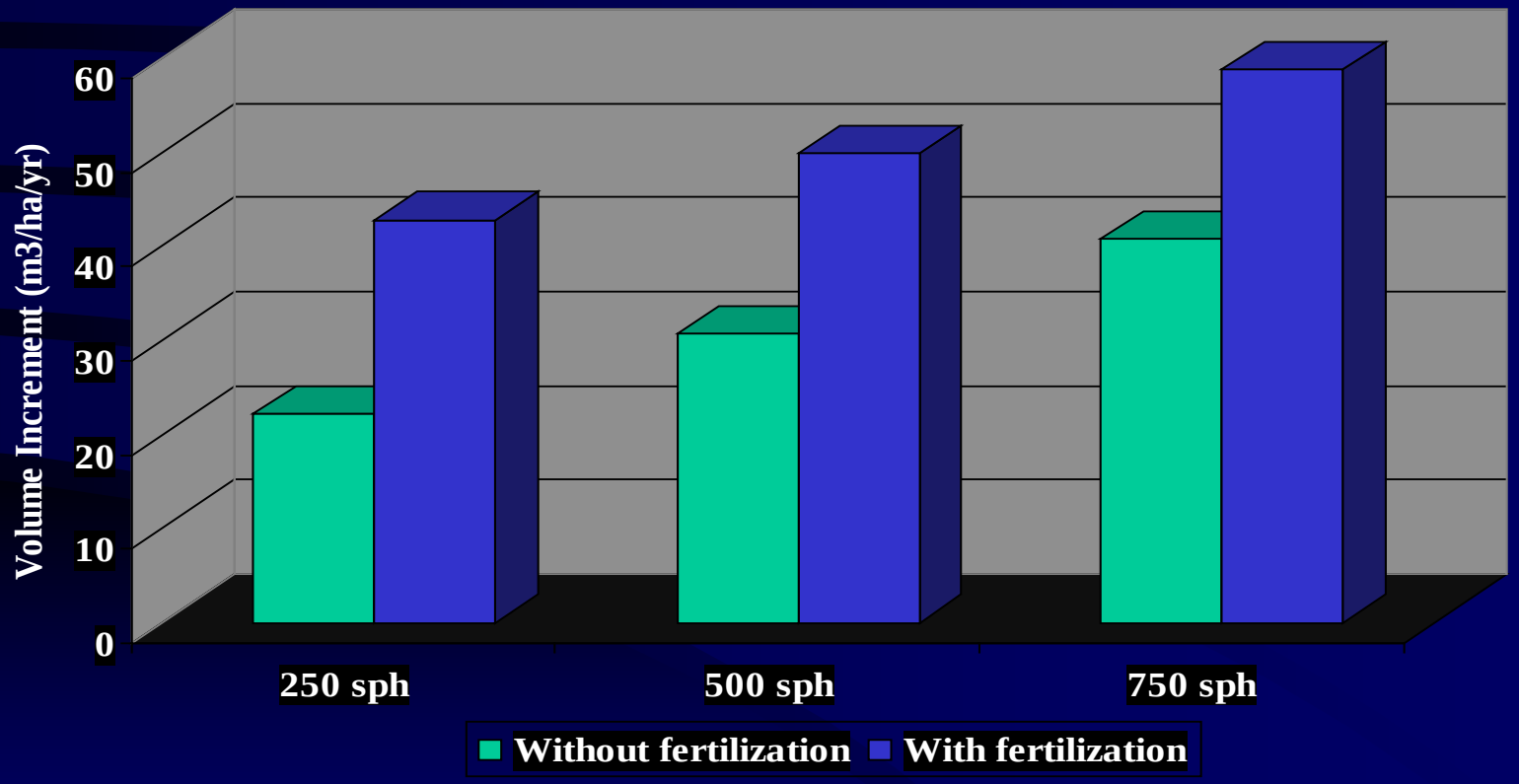


Figure 11

Volume growth by *E. globulus* following fertilization

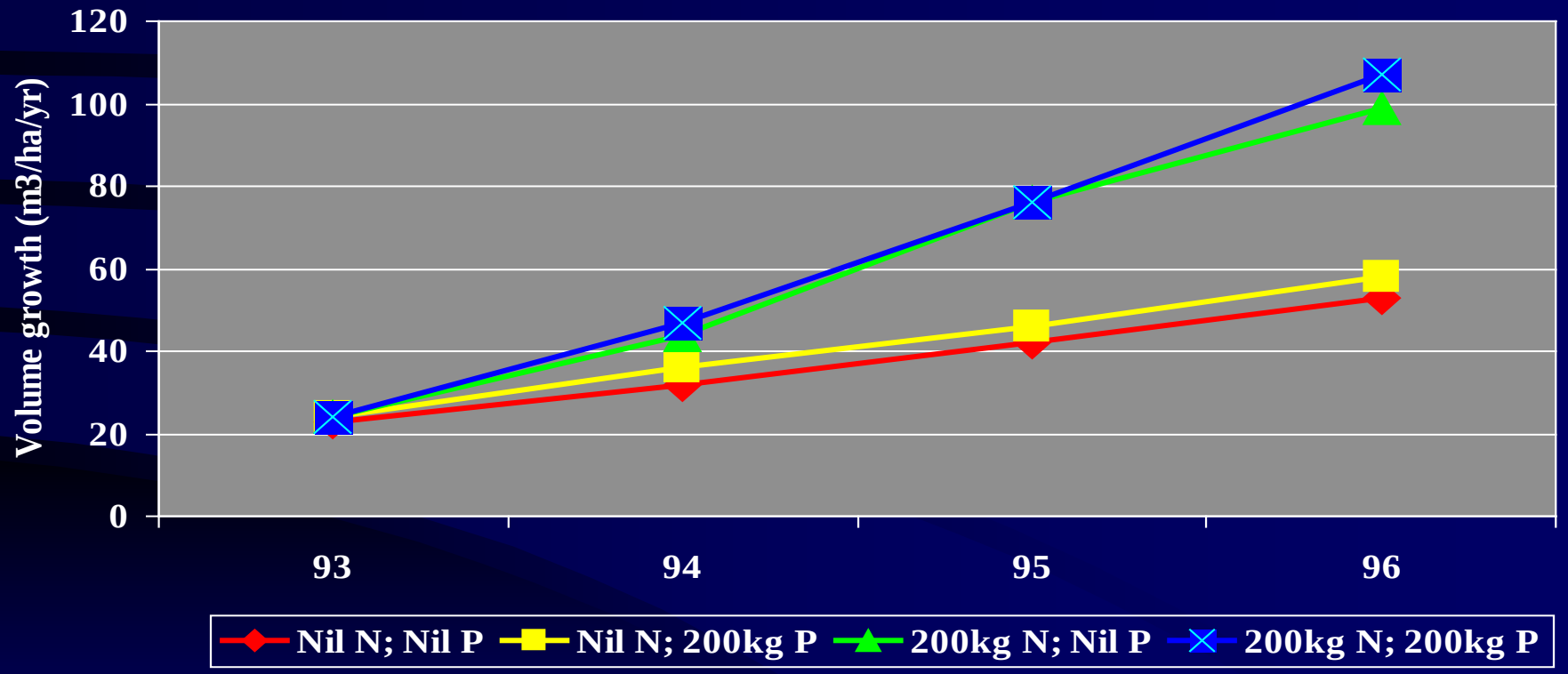
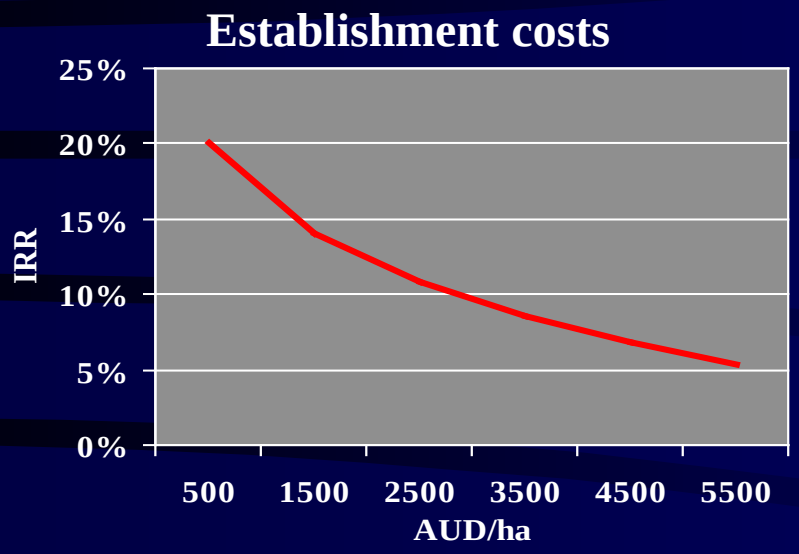


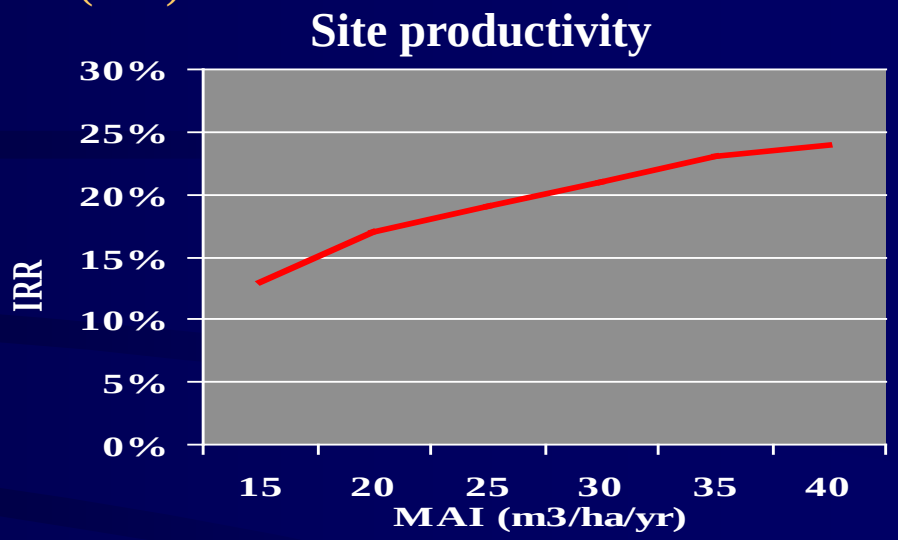
Figure 12

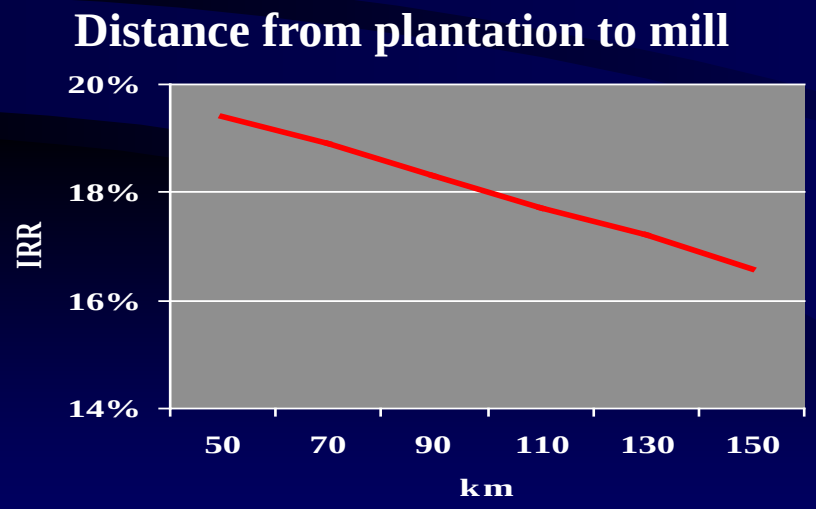
The Economic Return from Tree Crops

Sensitivity of profitability for E. globulus

IRR (real)







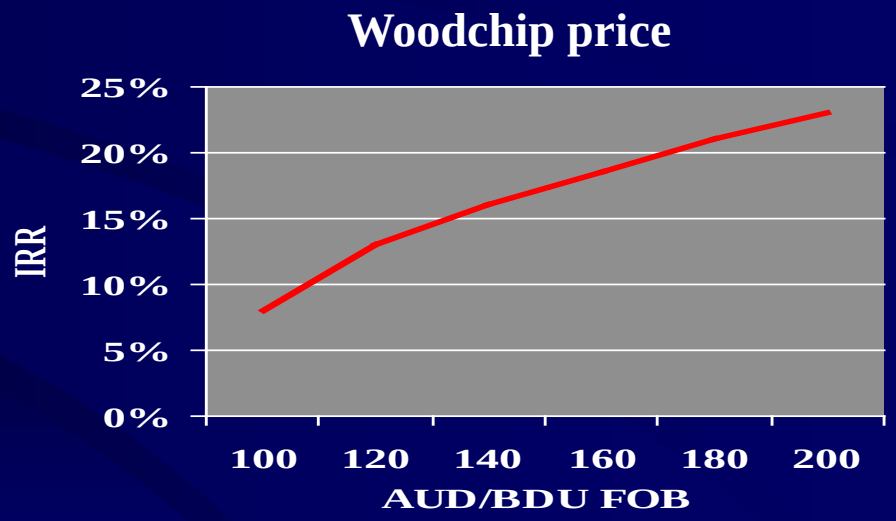


Figure 13

Pinus radiata Sharefarming

The Bluegum Project

Maritime (*Pinus pinaster*) Pine Project

Land availability in the intermediate rainfall zone for maritime pine

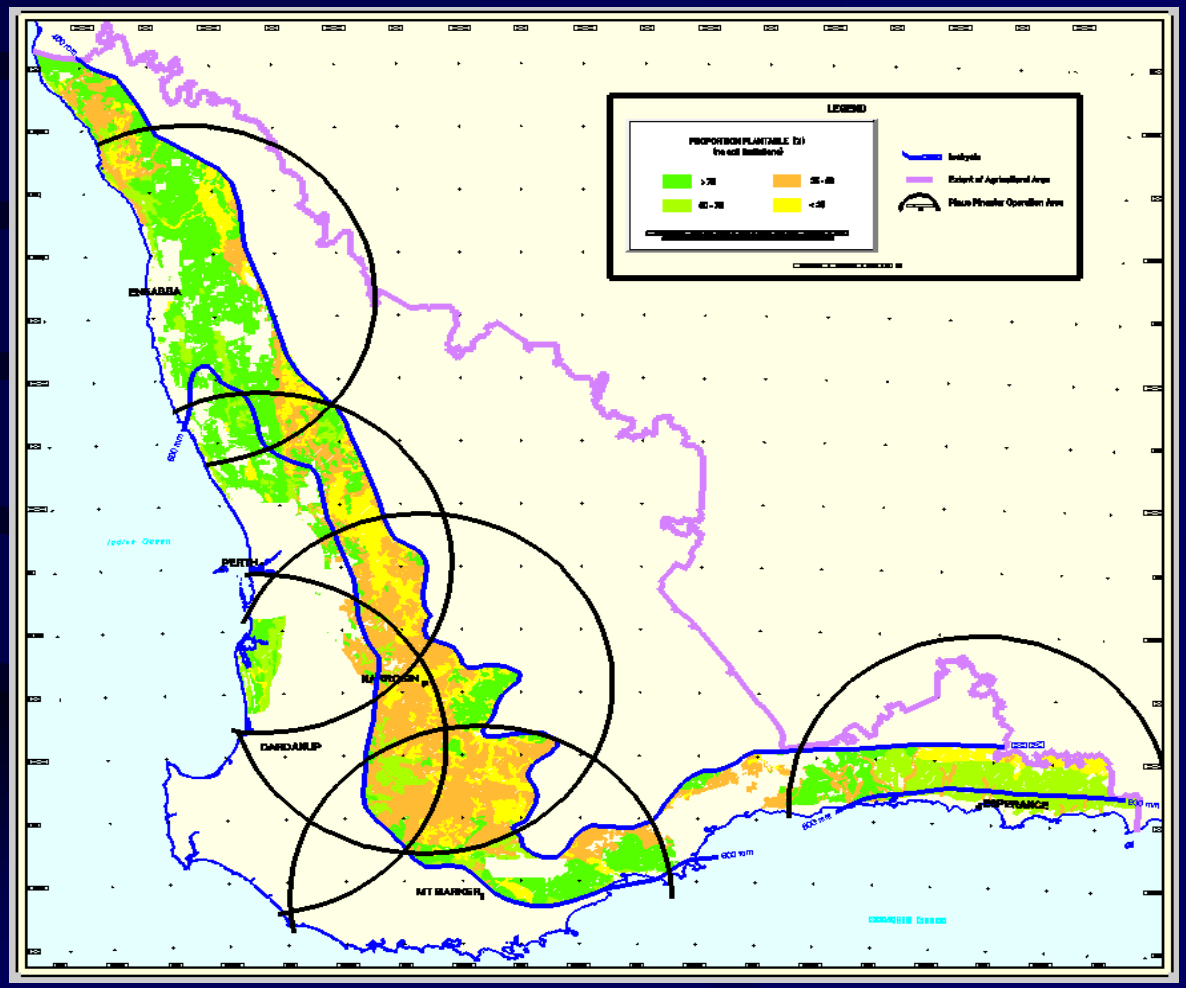


Figure 15

Tree Crops on Irrigated Land

Sandalwood growth and vigour with and without attachment to host

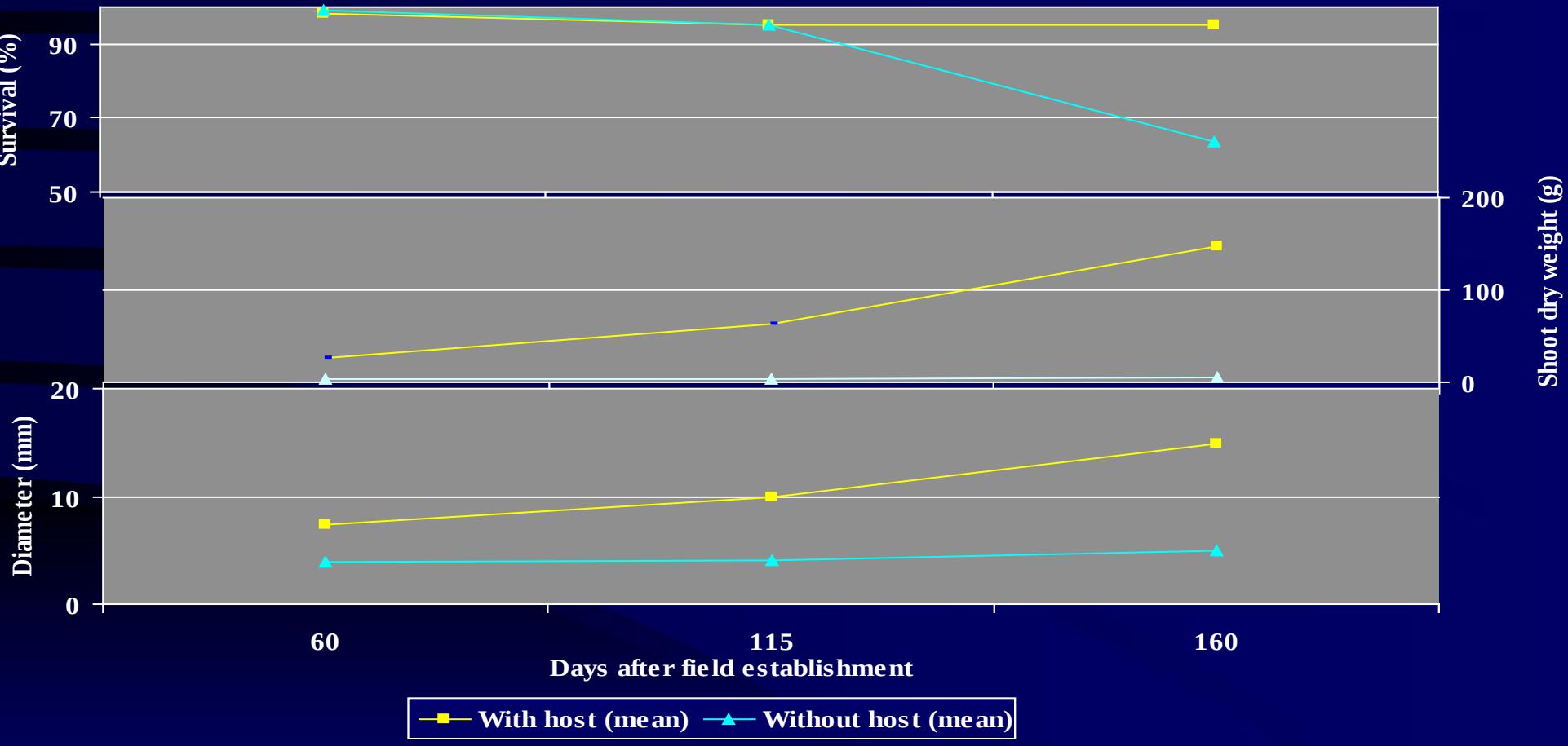


Figure 16

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