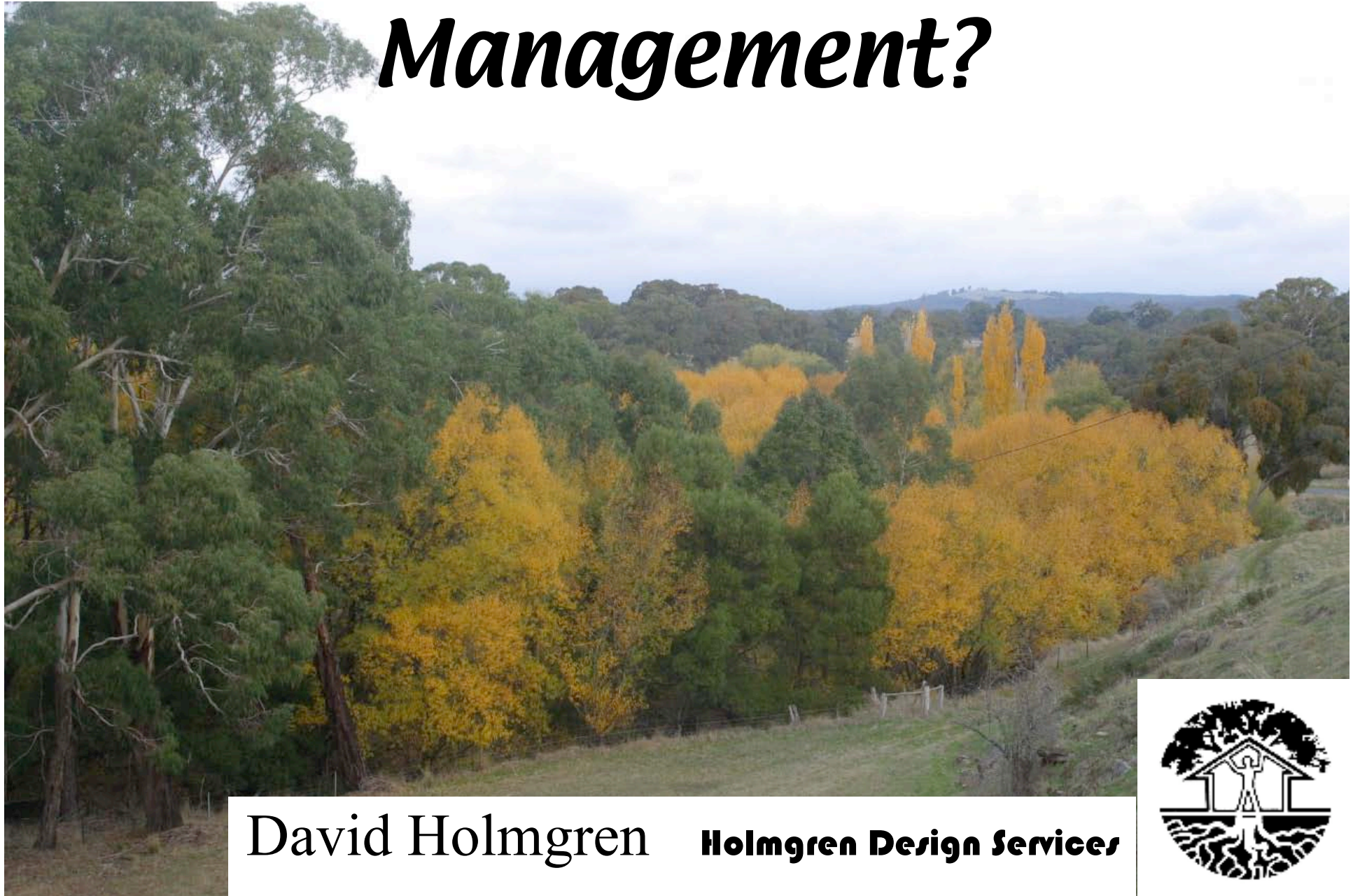


Willow Removal or Management?

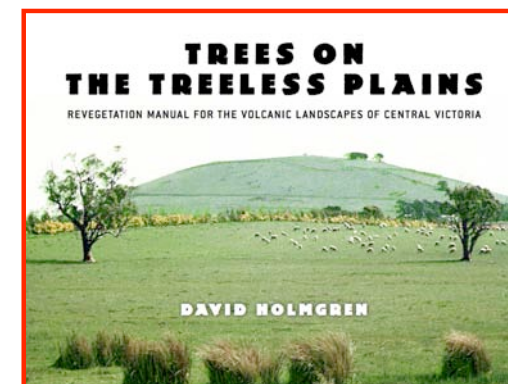
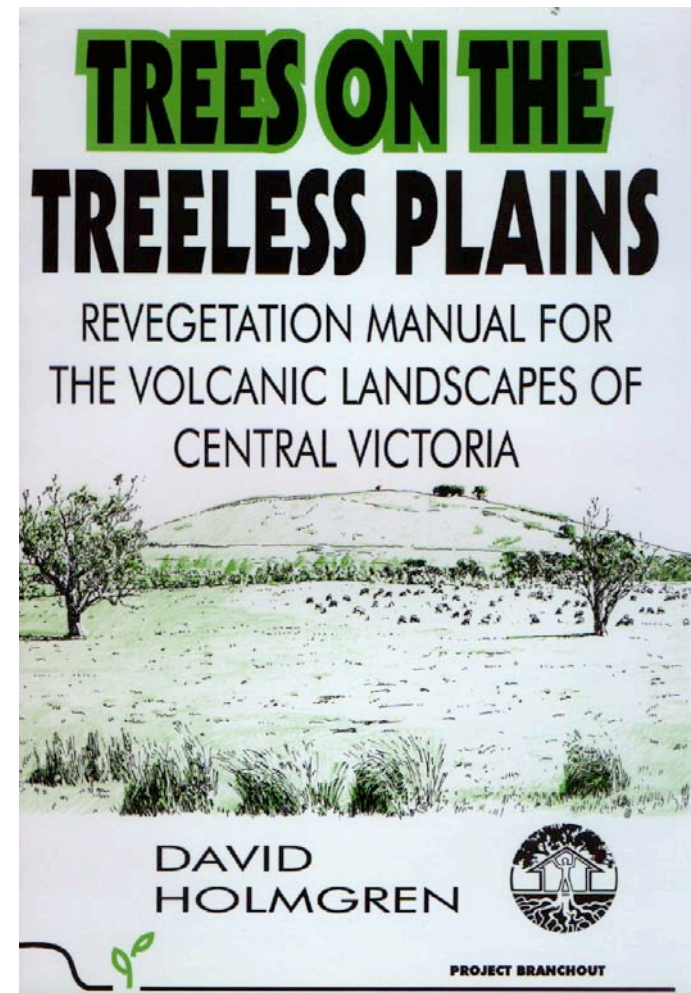


David Holmgren

Holmgren Design Services



- Co-originator of the Permaculture concept 30 years ago
- 20 years of revegetation design in Central Victoria
- 15 years of documentation of willow forest succession in Spring Ck Hepburn
- 10 years challenging the nativist orthodoxy in natural resource management



WILLOW FODDER DESIGN

Description:

Corridor plantation along drainage line of willows pollarded for summer fodder.

Application:

Broad drainage depressions with summer-moist subsoils, of gently undulating plains, predominately in climate zone 4.

Design Features:

- Tall single leader plant stock with plastic netting sleeves established with paddock closed for only one season.
- Pollarding at 2m allows regrowth without having to destock and produces short but uniform butt logs with specialty market potential.
- Alternate cutting along rows maintains some shade and shelter value and makes best use of light and moisture.
- Cutting once or twice a season in late summer to early autumn minimises inedible wood.

Establishment:

- Create willow paddock by landform fencing along scarp top with light weight electric fence.
- Winter plant bare rooted 1yr old cuttings 1-2m tall with small ball of fibrous roots in rip lines along reasonably drained bank of incised drainage line, or around edge of swampy flat.
- Sleeve willows with sisilation foil against rabbits and close paddock for hay cutting.
- Spring plant swamp gum copses on very wet sites.
- Summer prune willows to single leader.
- During the following summer, replace sisilation foil with heavy plastic mesh or electric wire loops on trunk and electric fence swamp gum copses with loop off scarp fence.
- Begin pollarding second year and stock paddock lightly for limited periods to test effectiveness of trunk guards. Once trees are mature try set stocking over summer with regular lopping of a few trees for green feed.

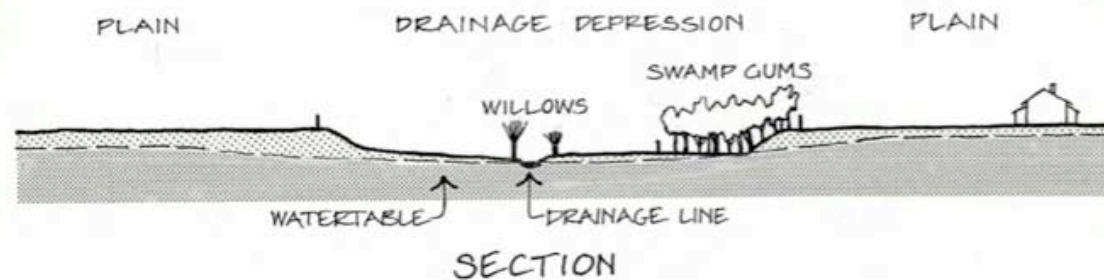
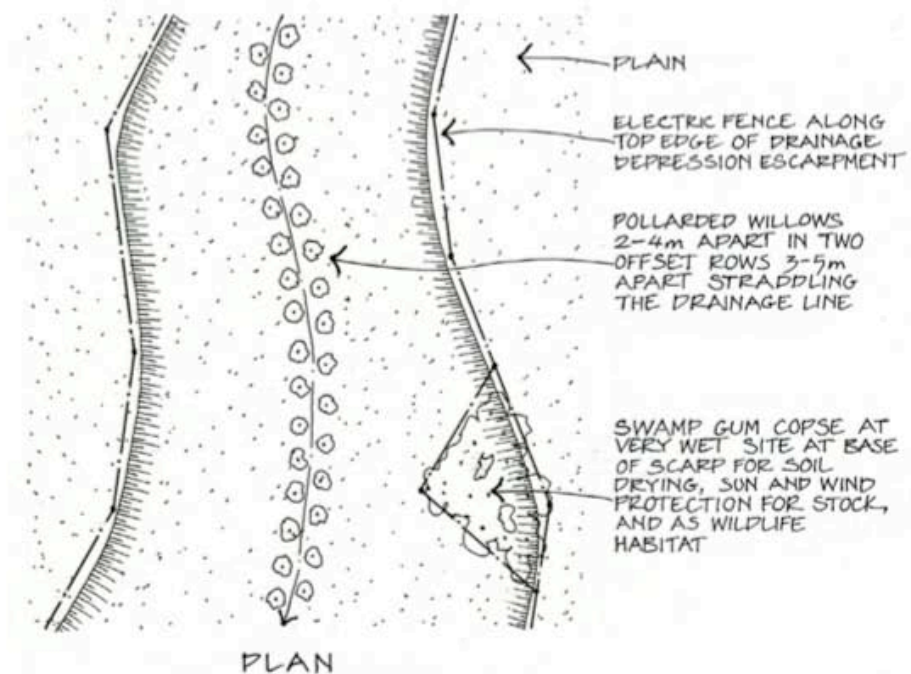
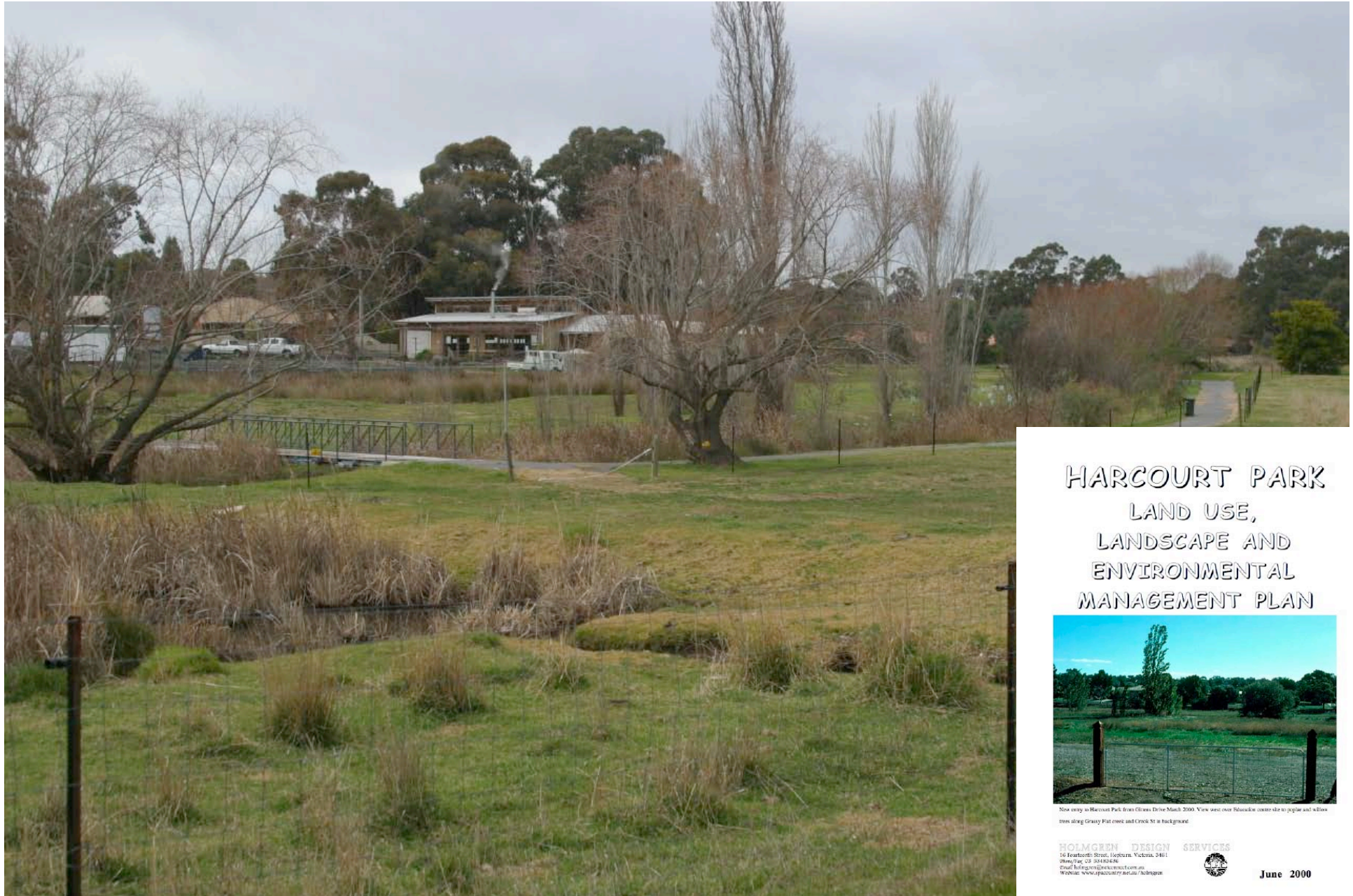


Figure 14.4 Willow fodder design for minor drainage lines and depressions with non-saline and permanent sub-soil moisture.

Harcourt Park Bendigo 2006



HARCOURT PARK LAND USE, LANDSCAPE AND ENVIRONMENTAL MANAGEMENT PLAN



Now entry to Harcourt Park from Clines Drive March 2000. View west over Education centre site to people and shelter trees along Grassy Flat creek and Creek St in background.

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June 2000

Harcourt Park Design Consultancy 1999/2000



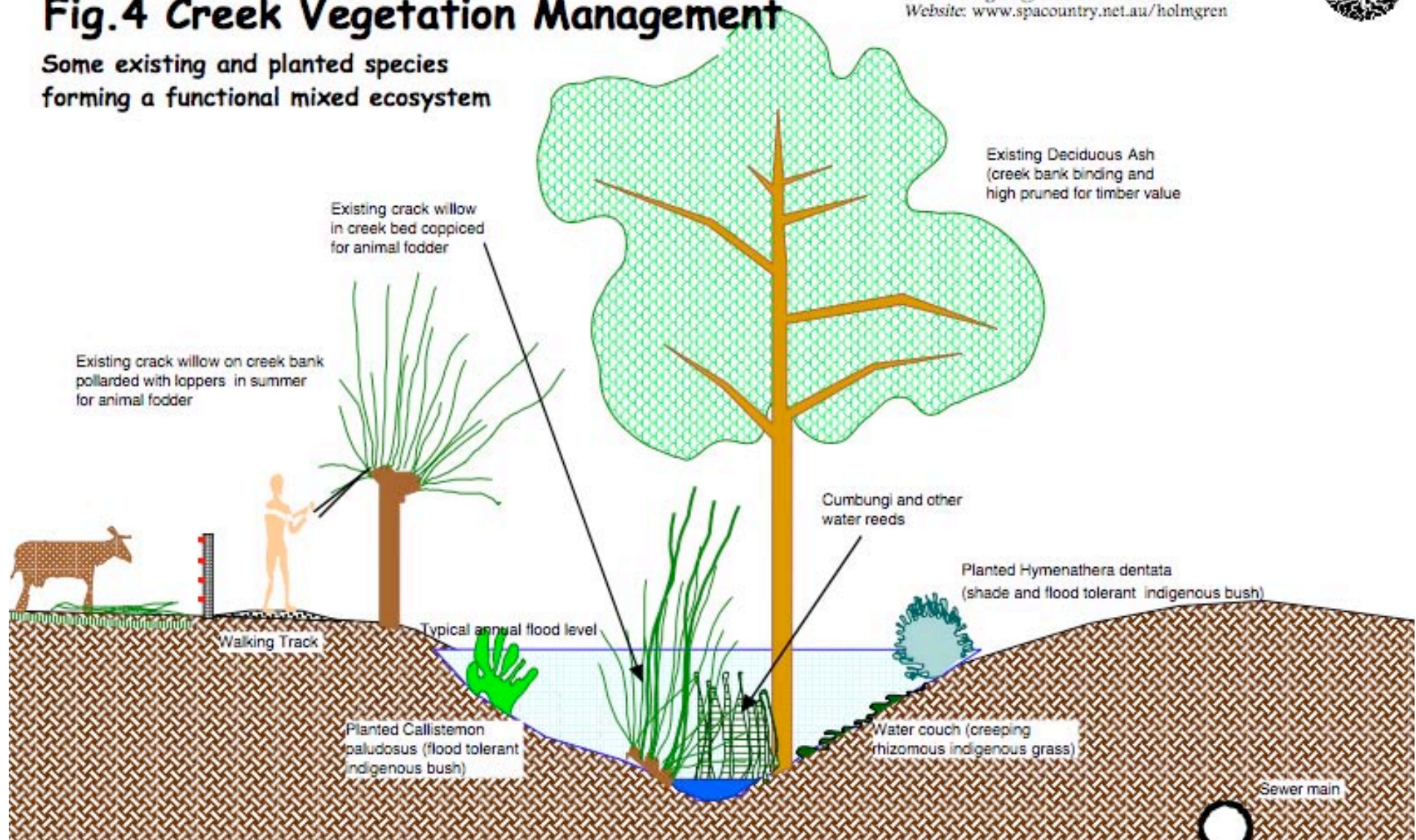
HOLMGREN DESIGN SERVICES

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Fig.4 Creek Vegetation Management

Some existing and planted species forming a functional mixed ecosystem

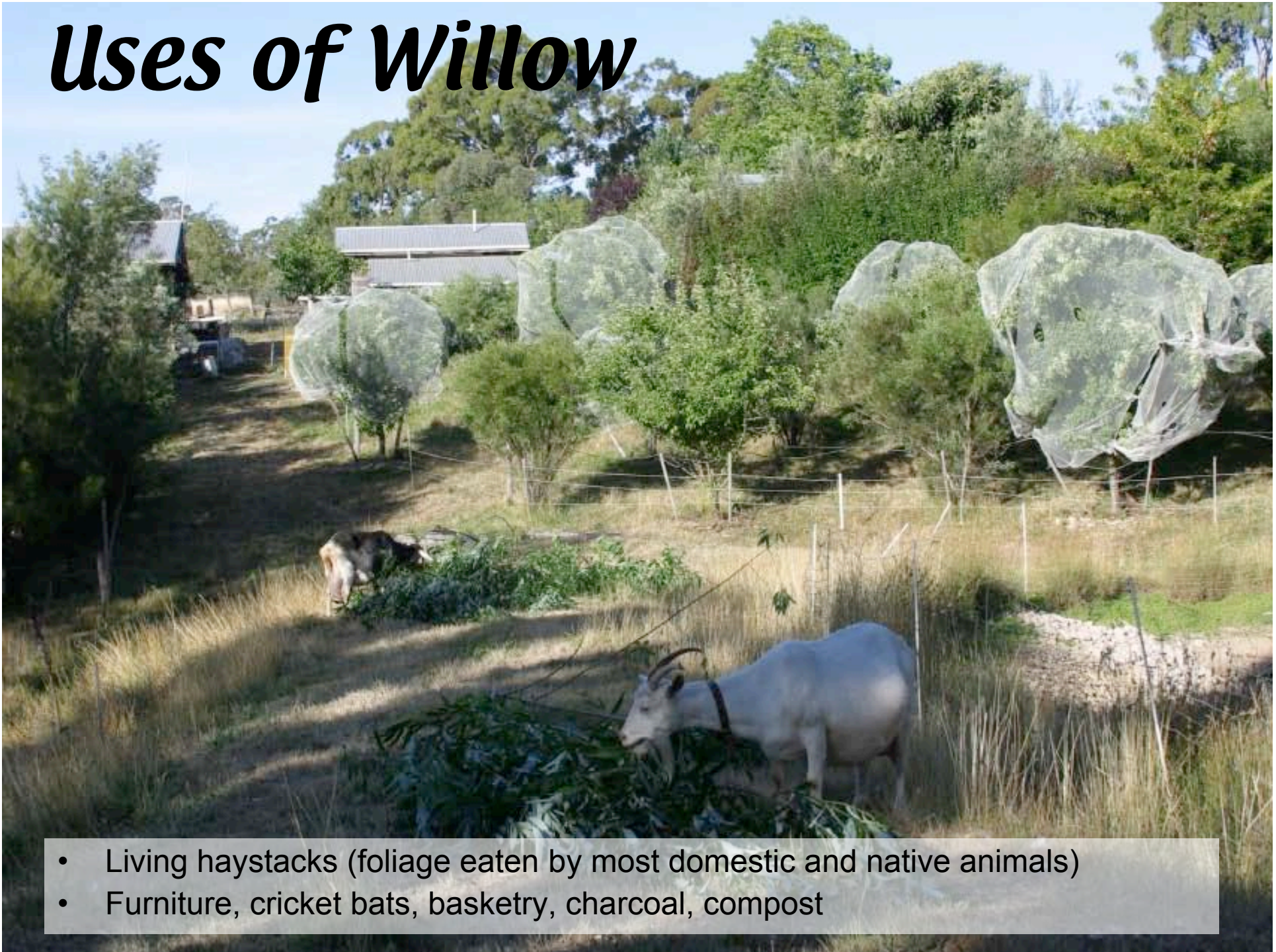


Willow Ecology



- Pioneer stabiliser of degraded stream banks
- Captures sediment and nutrients
- Lowers water temperature
- Habitat for fish

Uses of Willow



- Living haystacks (foliage eaten by most domestic and native animals)
- Furniture, cricket bats, basketry, charcoal, compost

Willow succession



Natural succession of old willow to more shade tolerant and long lived trees

Community management



- David Holmgren leading tour through the Vern Howell arboretum, Spring Ck explaining 25 years of community management

Community management

HEPBURN COMMUNITY FOREST MAP

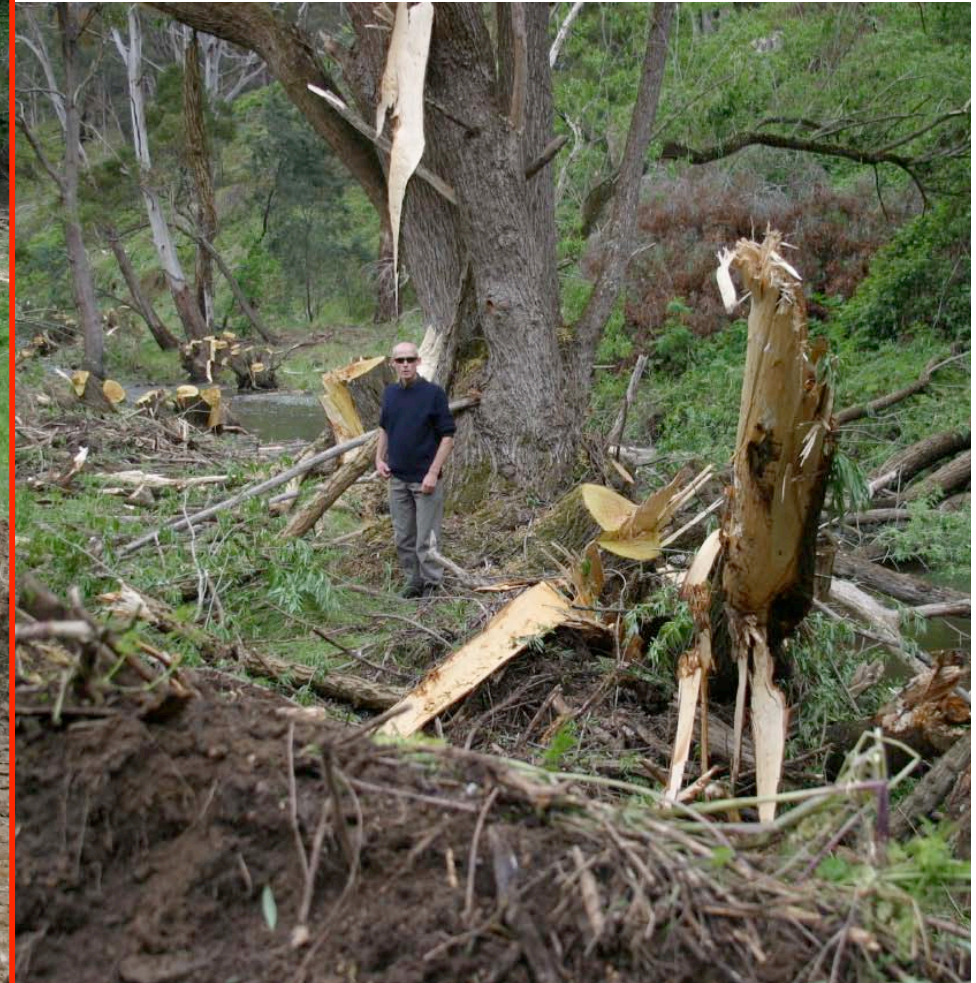
Original map of
Hepburn
Community Forest
by Kerry Wise (1994)



CMA intervention Jim Crow Ck 2005



CMA intervention Spring 2005



*Follow up documentation **Jim Crow Ck April 2006***



Follow up documentation April 2006



Follow up documentation April 2006



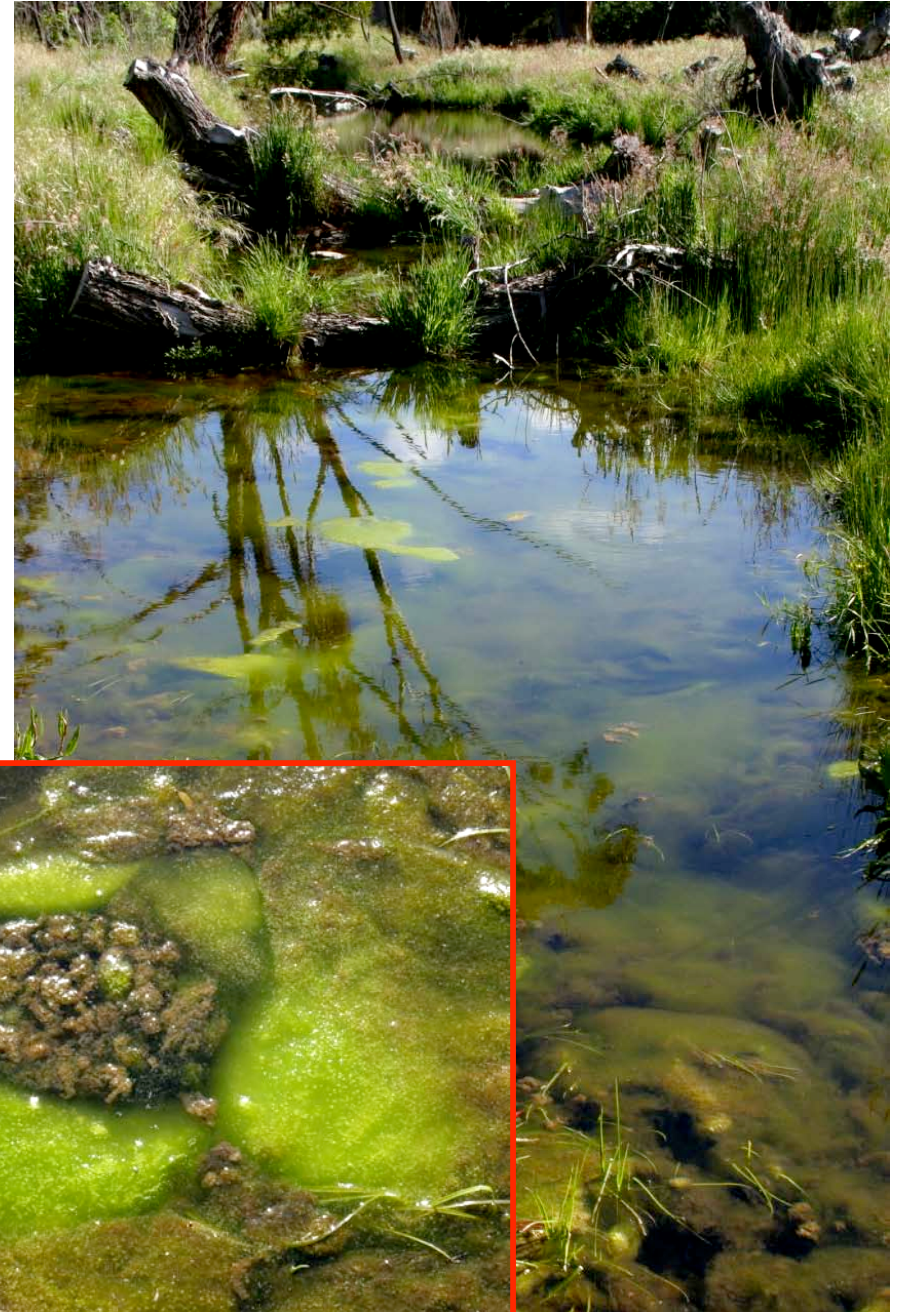
***Follow up
documentation
April 2006***



Follow up documentation Nov 2007



Follow up documentation Nov 2007



Opportunities

- Moratorium on removal programs
- Independent audit of existing removal programs
- Research options for win-win management of willows for;
 - » erosion control
 - » water quality & nutrient capture,
 - » weed control and ecological succession,
 - » animal fodder and drought security,
 - » biodiversity and amenity
 - » fire protection

For more information visit

www.holmgren.com.au