In the Mid-Loddon area, grasslands occurred on the heaviest textured soils of the Riverine Plain that are elevated enough not to be subject to inundation (Table 3.2, Skene 1971), although some areas can become water-logged for brief periods by immediate run off after intense rainfall episodes. In contrast, where soils are subject to frequent and often prolonged inundation, woodlands of *Eucalyptus largiflorens* and *E. camaldulensis*, and shrublands of *Muehlenbeckia florulenta* tend to occur (Table 3.2, Skene 1971). In some areas, *M. florulenta* shrublands have been described as part of the broader "treeless plain" landscape unit (Skene 1971), but because they are subject to frequent flooding the vegetation is never dominated by perennial native tussock grasses. Woodlands dominated by *E. microcarpa, E. melliodora* and *Allocasuarina luehmannii*, and occasionally mallee eucalypt shrublands occur on relatively lighter textured soil both on and off the Riverine Plain, although these can be replaced by *E. largiflorens*, *E. camaldulensis* or *Muehlenbeckia florulenta* dominated wetland vegetation when subject to inundation (Table 3.2, Skene 1971).

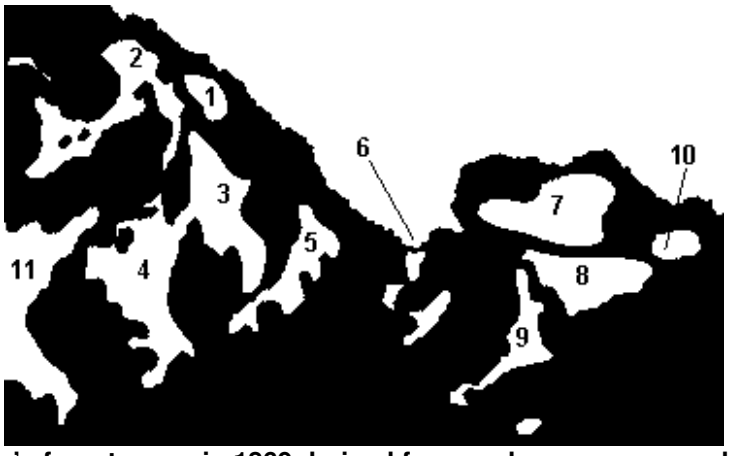

Fig. 3.5. Victoria's forest cover in 1869 derived from early survey maps showing the western portion of the Northern Plain. Sources: (Everett 1869) reproduced in Woodgate and Black (1988). Compare with Fig. 3.6. 1 - Kerang east, 2 - Kerang west and lower Avoca, 3 - Tragowel, 4 - Fernihurst, 5 - Patho, 6 - Echuca, 7 - Nathalia/Numurkah, 8 - Shepparton north, 9 - Shepparton west, 10 - Yarrawonga, 11 - Charlton.

Comparison between the distribution of treeless plains derived from soil types (Fig. 3.6) and that produced in Woodgate and Black (1988) from interpretation of an historical vegetation map of Victoria (Everett 1869), shows broad correspondence. In general, 6 of the 11 discrete plains apparent in the Everett map (Fig. 3.5) correspond to treeless plains on the map derived from soil types (Fig. 3.6). Differences occur with respect to overall extent and boundary detail of the various discrete plains. To some extent these differences can be attributed to contrasts

between the broad scale of the 1869 vegetation map of forest cover (1:1,000,000) and the detail of the recent soils maps (1:31,000). However, some of the differences are less readily reconciled. For instance, plains east of the Campaspe River in the Everett map (Nos. 7, 8, 9 and 10, ignoring No. 11 because it is west of the Avoca River and out of the study area, Fig. 3.5) are not or barely represented in the more recent map (see Discussion).

Remnant Vegetation and Post-Settlement Vegetation Change

A list of 28 species of woody plants from 10 families was compiled from incidental observations in often highly degraded vegetation throughout the western portion of the Northern Plain that were thought to have formerly supported grasslands (Table 3.3). This list is thought to include most woody species present in remnant Northern Plains grassland vegetation. Chenopodiaceae is the dominant family with 13 species (46%) recorded. Most species were recorded along roadsides and rail reserves where stock grazing is infrequent or has been excluded for decades. Whilst some of these plants are still relatively widespread and abundant in the region, the vast majority (79%) are very rare and only represented by a handful of individuals or populations (Table 3.3). It is speculated that the shrub species recorded across the treeless plains in the historical sources included these now regionally rare taxa.

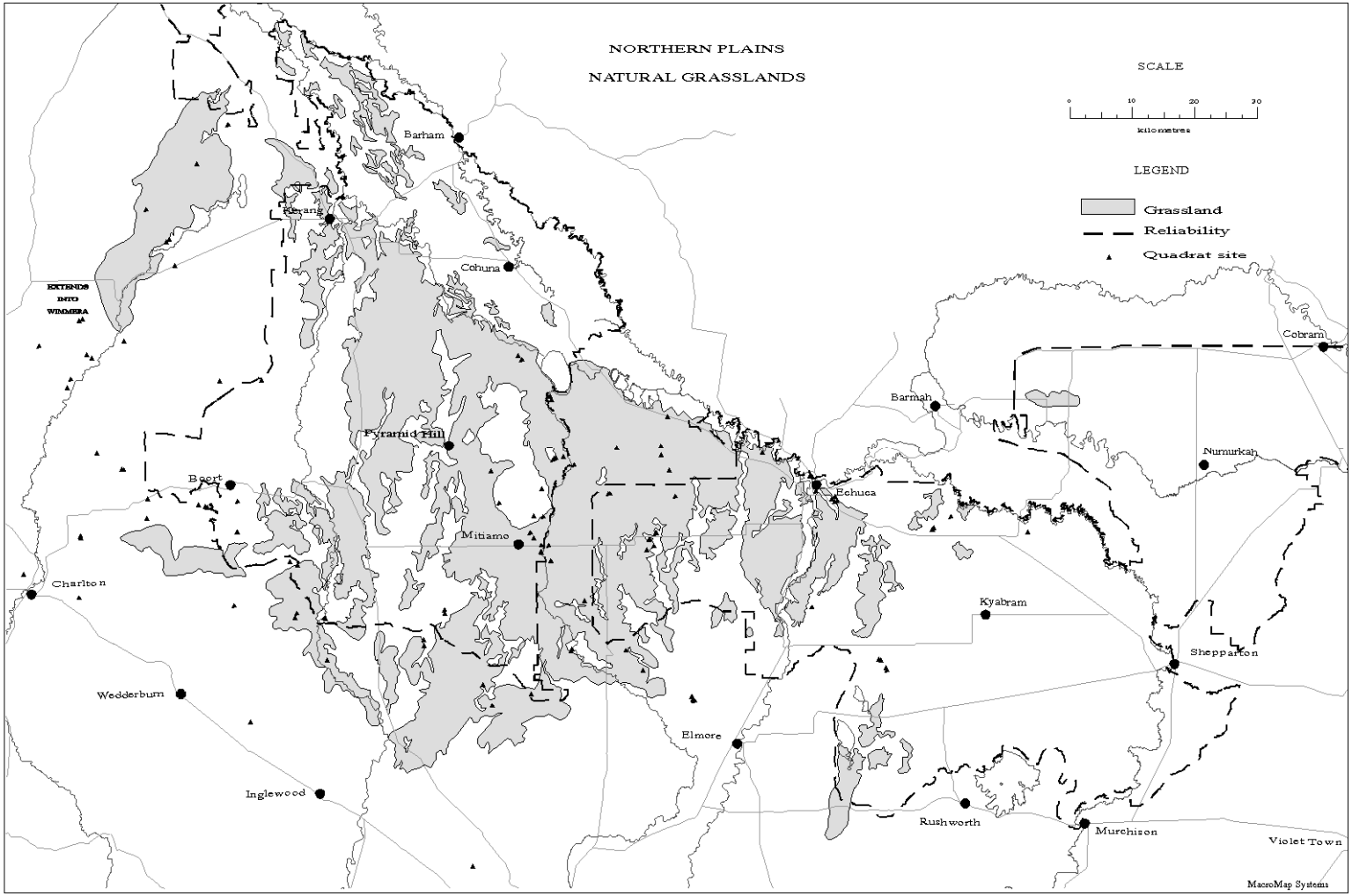

Fig. 3.6. A generalised distribution map of the presumed extent of treeless plains vegetation at the time of European settlement. Derived from detailed soil type maps and aerial photographic interpretation.

Table 3.3. List of shrubs observed in remnant grassland vegetation throughout the western portion of the Northern Plain. Growth form - ST = small tree (frequently > 3 m height), LS = large shrub (> 1.5 to 3 m height), MS = medium shrub (> 0.5 to 1.5 m height), SS = small shrub (< 0.5 m height or ground cover). Conservation status - Vic = Gullan *et. al.* (1990) status in Victoria, Extinct = no longer recorded from grassland remnants, Rare = recorded only from a handful of sites usually over a small geographic area, Common = recorded from many site usually throughout a large part of the grassland range, although sometimes more restricted. Note this list is not exhaustive.

Species	Growth Form				Conservation Status	
	ST	LS	MS	SS	Vic	(Northern Plain)
Acacia omalophylla	✓				e	Rare
Acacia oswaldii		✓			r	Rare
Acacia pendula	✓				e	Extinct
Atriplex angulata			✓			Rare
Atriplex leptophylla				✓		Common/restricted
Atriplex nummularia		✓				Extinct
Atriplex semibaccata				✓		Common
Chenopodium desertorum sspp. *virosum*				✓		Common
Chenopodium nitrariaceum		✓				Rare
Disphyma clavellatum				✓		Rare
Enchylaena tomentosa			✓	✓		Rare
Frankenia serpyllifolia			✓		r	Rare
Ixiolaena leptolepis			✓			Rare
Leptorhynchos panaetioides			✓		r	Common
Lawrencia squamata			✓			Rare
Maireana aphylla			✓		r	Rare
Maireana decalvans			✓			Common
Maireana rohrlachii			✓		r	Rare
Minuria cunninghamii				✓	r	Rare
Muehlenbeckia horrida			✓		r	Rare
Nitraria billardierei		✓				Common/restricted
Rhagodia spinescens			✓			Rare
Pimelea glauca			✓			Rare
Pimelea spinescens			✓		r	Rare
Sclerolaena diacantha				✓		Rare
Sclerolaena napiformis				✓	e	Rare
Sclerostegia tenuis			✓			Rare
Zygophyllum glaucum				✓		Rare

Discussion

Introduction

Historical sources can provide a unique insight into the nature of landscapes and indigenous vegetation at the time of European settlement in Australia. Previous reconstruction has been based on survey records (vegetation maps), diary and journal accounts, herbarium specimens and illustrations (Jeans 1978; Sheail 1980; Clarke and Finnegan 1984; Mills 1988; Cronk 1989; Fensham 1989).

The precise techniques used for a particular region depend on the type and quality of historical sources available, and will greatly vary both between and within states. Numerous historical accounts of the Northern Plain exist, however few were originally intended to describe vegetation and only those utilised are known to make specific reference to the nature of the

landscape and its vegetation, particularly the “treeless plains”. Fensham (1989) notes that “because a major connecting road passed through the Midlands [of Tasmania] there are quite a number of descriptive accounts of this country by general travellers”. In contrast, the Northern Plain of Victoria has relatively few historical accounts because the region is remote from and does not lie between the early major population centres (such as the goldfields). In fact, for most of the 19th century the Northern Plains were a sparsely populated pastoral district (Curr 1965). However, these few records are of a high quality with many specific and presumably accurate observations of the nature and dynamics of indigenous vegetation.

Vegetation annotations on historical maps often proved to corroborate the observations of other sources, although specific references were scarce, and often generalised over a large area. In some areas, (particularly during the earlier squatting period) government surveyors actually delineated the boundaries of “treeless plains” apparently with considerable accuracy. Such authentic information provided critical evidence in support of previously published and widely held views on soils - vegetation correlations (e.g. Skene 1971).

The subjectivity and limitations of historical accounts and their interpretation for vegetation reconstruction have been discussed previously (Johnson 1963; Moore and Chater 1969; Watson 1969; Fensham 1989). To determine if people’s reactions to the same landscapes really differed, interpretation of the historical sources must be made in context, considering who made the observations and when. For instance, Mitchell described the plains around Pyramid Hill in June 1836 as “verdant”, whilst Hawdon wrote that the same plains were of the “worst description” some 18 months later. Clearly the differing season (and possibly the different years) could explain this stark contrast. However, given the two were in the region for very different reasons (Mitchell, on an expedition of discovery to “open up” the Port Phillip district for settlement and Hawdon a pragmatic squatter looking to earn his livelihood), politics and expectations may have further influenced their respective perceptions. However, whilst there are numerous examples of pioneering squatters and settlers being disappointed with the pastures of the Northern Plain, there is at least one instance of expectations being exceeded (Curr 1965 pg. 83). Despite these differences in accounts, with respect to the broad structure and composition of the vegetation, there are few contradictory records from separate sources,

although many references are ambiguous and difficult to relate to exact locations on the ground.

Many of the common adjectives used to describe the treeless plains, surrounding woodlands and the landscape in general, are the same as those encountered and documented elsewhere in south-eastern Australia (e.g. “grassy plain” and “open plain” see Jeans 1978; Clarke and Finnegan 1984; Fensham 1989). With respect to mapping the former distribution of vegetation structure (i.e. grassland compared to woodland or forest) these annotations are sufficiently unambiguous and frequent to assist in the validation of techniques used to map the former extent of grasslands on the basis of environmental attributes such as soil types. However, such information was rarely useful for reconstructing a more detailed impression of the former structure and composition of treeless plains vegetation. Such impressions have been derived from just a handful of often uncorroborated sources and at best only relate to the specific place in which the records were made.

Whilst the value of historical information is evident in this study, inevitably the validity of the conclusions drawn can only be tested through confirmation with independent data sources. Soil survey reports throughout the region (Johnson 1952; Skene and Poutsma 1962; Skene 1963; Skene and Harford 1964; Skene and Sargeant 1966; Sargeant *et. al.* 1978; Badawy 1984) support many of the environmental - vegetation relationships derived from the historical maps and literature. In particular the link between soil types and vegetation patterns: i.e. woodland on the lighter textured sand ridges scattered across the plains and on associated geological formations, shrubland and woodland in the seasonally inundated drainage lines and treeless vegetation (grasslands) on the level clay plains in between. These soil surveys included no reference to historical information and corroborate the records in the historical sources.

One example of historical mapping at the regional scale is Everett (1869) (Fig. 3.5). Compared with the map derived from the soil survey and API (Fig. 3.6), the distribution of treeless plains broadly correspond. However, east of the Campaspe River, the historical map records a series of three large treeless plains that are not present in the map derived from soil

types. Despite the fact that the region east of the Campaspe River is very intensively irrigated, indigenous tree cover is still widespread (pers. obs. based on field observations and API). Furthermore, a map of Victoria originally produced in 1847, reproduced in the “Atlas of Victoria” (Duncan 1982) denotes most of the area east of the Goulburn River as “Extensive box and gum forests” and to the west “Open forest country, good grass with belts of scrub” - not grassland as shown by Everett (1869). Additional support for this view is provided by Hodgkinson (1856) who commented for the region around the Ovens River: “This extent of land embraces a few small plains clear of timber, but is however for the most part wooded” - Hodgkinson only reports significant open plains north and west of the Broken Creek (around Numurkah). These contrasting historical references suggest possible errors with the later Everett (1869) map. Whilst grassy vegetation is almost extinct in this area because of the severity of irrigation (Rolf Weber pers. comm.), further ecological and historical study will be necessary to resolve this apparent conflict.

In addition, the soil survey results were based entirely on observations of the environment and its indigenous vegetation at the time of the survey (mainly in the 1960’s and 70’s). Despite the fact that the loss of tree cover in the region has been considerable (Woodgate and Black 1988), enough indigenous tree cover remains throughout the landscape even today to relate tree cover to particular soil types. Assessment of broad tree cover across the landscape today further corroborates the location of treeless plains at the time of European settlement based on both soil survey and historical sources.

Treeless Plain Distribution at the Time of European Settlement

Previous broad scale studies of the indigenous grassy vegetation of lowland plains of south-eastern Australia have depicted grasslands of the Victorian Riverina as being predominantly restricted to the west (McDougall and Kirkpatrick 1994; Kirkpatrick *et. al.* 1995). Because these studies were based on historical information sources (especially Everett 1869), this conclusion broadly agrees with that of this study.

Whilst accurate data on the remaining extent of grassy ecosystems is generally not available, it is estimated in Victoria that 0.3% of the original distribution is represented in conservation reserves (Department of Conservation and Environment 1992). A number of very large and significant grassland remnants have been documented in the Northern Plain primarily from private property (Foreman 1992; Foreman and Westerway 1993; Maher and Baker-Gabb 1993; Foreman and Bailey 1996; Foreman and Garner 1996). Whilst it would be expected that the proportion of grassy vegetation remaining in the Northern Plain would be broadly aligned with the statewise situation, only four areas representing 0.05% of the former extent have been specifically set aside for grassland conservation in the region (Foreman 1996).

Nature of Treeless Plain Vegetation at the Time of European Settlement and Post-Settlement Change

The accounts of the first explorers and pioneer squatters proved to be the most useful sources for reconstructing an impression of the former vegetation of the treeless plains. Some sources made quite explicit references to the variations in structure and occasionally composition. Because vernacular references were most frequently used, often the exact identify of the plants mentioned remain uncertain. However, most references were sufficiently unique to be readily linked to species known (usually dominant) from remnant vegetation today, especially when combined with some ecological notes (i.e. polygonum in swamps probably is tangled lignum or *Muehlenbeckia florulenta*).

Interpretation of the historical sources suggested the vegetation of the treeless plains (at least in some areas) possessed the following broad characteristics: (a) large tussock grasses with a

sparse cover; (b) widespread presence of a variety of tall to low shrubs; and (c) widespread presence of various ground cover forbs including succulents such as pig's face (Fig. 3.7).

The observation of relationships between vegetation and the environment at the time of European settlement, suggest great vegetation complexity that many authors have assumed has been lost (Frankenberg 1971; Conn 1993). The community complexity presumably present at the time of European settlement, on the basis of soil type variation and existing remnant vegetation, has clearly emerged from interpretation of the available historical sources, although it is implied rather than explicitly described.

Whilst there is documentation of the extinction of fauna species (particularly vertebrates) (Conservation and Natural Resources 1995) no specific examples of plant species extinctions from the Northern Plain are evident in the historical sources. However, there is a clear suggestion in the literature that some elements of the original vegetation have been regionally lost or severely depleted (i.e. *Disphyma crassifolium* and shrubs such as *Atriplex nummularia*). Assuming few indigenous species have been introduced to the region since settlement, it is speculated that the composition of today's grassland vegetation is a subset of that of the former vegetation because of extinctions. Significant changes in population density have probably occurred as indicated by the structural changes interpreted from the historical sources. Apart from obvious changes resulting from clearance and fragmentation, there is considerable evidence of great change in vegetation structure and composition over the last 160 years of European occupation and agricultural land use. Existing remnant grassland vegetation is probably very different to that occurring in the same area 160 years previously.

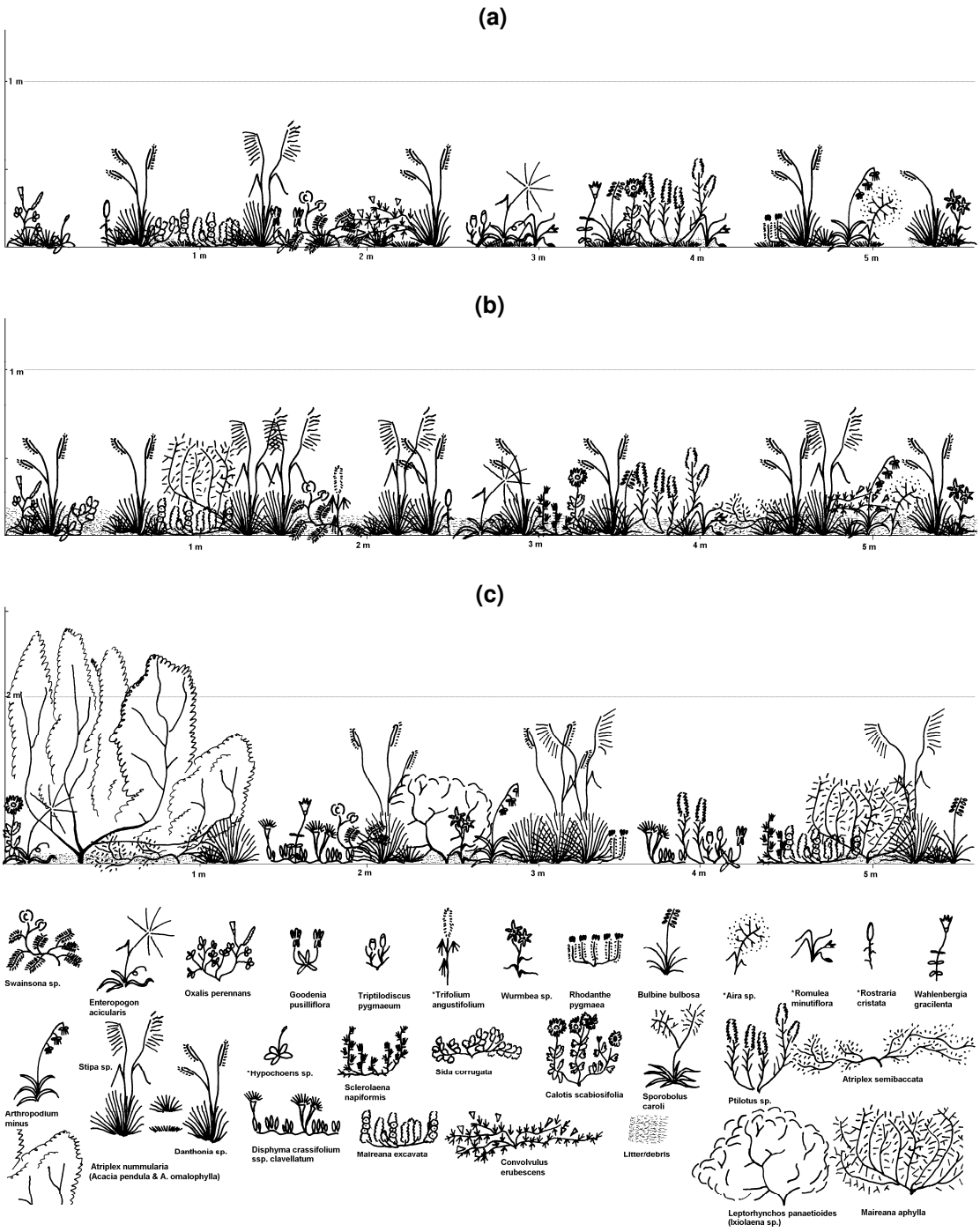

Fig. 3.7. Generalised vegetation profiles of (a) an existing lightly grazed species-rich grassland, (b) an existing ungrazed species-rich grassland, and (c) the hypothetical profile of treeless plain vegetation present around Mount Hope in the 1840's The first two profiles are based on observations of a grassland remnant north east of Mitiamo.

Edward Curr's accounts in particular are useful in this respect with specific references to vegetation change and hypotheses offering an explanation. Curr explicitly links vegetational change to modifications in the underlying ecological processes and disturbance regimes. In particular he mentions the following factors: (a) the absence of (aboriginal initiated) frequent burning, (b) the introduction of domestic stock grazing, (c) the introduction of exotic species as

a consequence of both grazing and later cultivation, and by implication, (d) the extinction of indigenous herbivores and other fauna. Curr makes quite specific connections between these various factors and vegetation change. Whilst these anecdotes are an invaluable historical insight, no evidence is presented to support his ascertains. In particular, because most of the change presumably occurred more or less simultaneously throughout the landscape, it is impossible to determine which factor or combinations of factors where responsible for most of the change and when.

Becker's water colours of the plains surrounding Terrick Terrick, suggest some of the change Curr reports may have occurred very early and rapidly. By 1860, Becker portrays the same region described only a decade or so earlier by Curr, in a significantly different way. Becker's water colours depict the plains as green, grassy and with a light scattering of trees. Despite that fact that two of the pictures were probably drawn from a major transport route that was presumably subject to intense use, compared with Curr's observations ("In places, as for instance around Mount Hope and the Terricks,... the salt-bushes obtained the height of 12 feet". Curr 1965), they suggest large areas of the treeless plains had been significantly modified within 24 years of Mitchell's Australia Felix expedition.

Comparisons with the Riverina of NSW

The conclusions drawn about the nature of pre-settlement grasslands in this study align closely with the results of reconstructions undertaken in the NSW Riverina (Moore 1953*a*, 1953*b*; Adamson and Fox 1982; Benson 1991). This work concludes on the basis of observations of remnant vegetation and historical accounts that much of what is today *Danthonia - Stipa* dominated grassland was formerly an *Acacia pendula - Atriplex nummularia* alliance. This transformation is attributed to the combination of intensive sheep grazing, drought (particularly during 1875-77), firewood utilisation and bush fires. Because the vegetation has been modified to a varying extent by the activities of people since European settlement, Riverine grasslands have been described as disclimax (Moore 1953*a*; McDougall and Kirkpatrick 1994).

In the same way that woody perennials have been variously eliminated from the treeless plains, it is likely shrubs have been largely removed from adjacent woodlands (Foreman 1993). Given their common post-settlement management, other structural and compositional changes suggested for grasslands have probably also occurred in woodlands. Despite this Moore (1953*a*, 1953*b*) describes woodlands as a climax communities because trees remain. The structural picture of the pre-settlement treeless plains vegetation reconstructed from historical sources suggests in some places shrub cover may have been < 10% or even absent, and therefore probably qualified as a form of grassland on the basis of modern systems of classification and nomenclature.

The historical accounts suggest all vegetation in the Riverina has been altered in some fashion by land use over the last 160 years. Much of this change remains undocumented, speculative and at best tentative, and is an inappropriate and unreliable basis on which to classify today's vegetation refugia. Furthermore, the term "disclimax" tends to imply that the vegetation to which it is applied is of lesser value or importance than vegetation classified and described as "climax". The important factor from a conservation biology viewpoint is the contribution to regional biodiversity, not the genesis of the vegetation community. "In practice, speculation about the biological composition or ecological processes that characterised the original (pre-European) grasslands is largely irrelevant to the conservation and management of small remnants" (Lunt 1994).

Conservation Management Implications

Current estimates of the extent of remnant grassland vegetation across the Northern Plain based on Plains-wanderer habitat survey (Maher and Baker-Gabb 1993) and floristics (Foreman 1995*a*) suggest a figure of upto 10,000 ha or 2.5% of the pre-settlement extent. However, this vegetation is variable in quality and the vast majority remains privately owned and vulnerable to a range of potentially destructive threats. Only four sites (0.05%) are officially designated grassland conservation reserves (Foreman 1996).

This study has confirmed the conclusions of previous studies (Frankenberg 1971; Frood and Calder 1987; Lunt 1991; McDougall and Kirkpatrick 1994) that grasslands of the Northern

Plain are severely depleted and seriously threatened with extinction. Whilst post-European settlement land management has changed the natural vegetation of the treeless plains, the remaining refugia are extremely valuable from a conservation biology perspective because so little is left. Irrespective of the past, grassland remnants supporting high biodiversity and low exotic cover are of greatest conservation value. These remnants often support the greatest densities of rare or threatened flora and fauna, and represent the best remaining examples of the former vegetation (Foreman and Westerway 1994; Foreman 1995*b*; Foreman and Bailey 1996; Foreman and Garner 1996). Accordingly, this conclusion has important implications for future conservation management. Whilst the historical evidence provides some valuable insights into the former nature of indigenous vegetation, reconstruction is speculative and at best provides a tentative impression of what is now extinct. Conservation management should be focused on the maintenance of existing biodiversity in refugia, rather than on what is thought to have occurred at the time of European settlement.

Treelessness

The absence of trees in south eastern Australia has been attributed to a number of factors, including grazing, frequent burning, soil texture, waterlogging and low temperatures (Patton 1930; Fensham and Kirkpatrick 1989; Conn 1993; Gibbons and Rowan 1993). The correlation between soil types and treeless plains on the Northern Plain has been demonstrated.

Compared with the closely related “prior stream woodland” soils, grassland soils have (a) slightly heavier texture throughout profile, (b) shallower surface horizons, (c) darker and duller, more intractable subsoil clay structure, (d) the presence of gypsum in deep subsoil, and (e) occur at slightly lower elevations, generally not subject to inundation (Skene and Poutsma 1962; Skene 1963; Skene and Harford 1964; Skene and Sargeant 1966; Skene 1971; Sargeant et. al. 1978). Such soils are most abundant in the north-western reaches of the Northern Plain as Macumber (1991) explains:

> “As coarser materials were deposited close to the highlands, there is a gradual fining northward across the Loddon Plain, until a point is reached beyond which stream loads were virtually reduced to suspended load; this allowed a predominantly clay plain to build up.”

These poorly drained non-inundated soils create very difficult conditions for deep-rooted non-aestivating perennial plants as Gibbons and Rowan (1993) explain:

> "The combination of relatively low 'profile of available water storage' (PAWS) and overall mediocre nutrient status with the limited summer rainfall [of the region], precludes formations of perennial species requiring ready supply of water, and also prevent the vigorous growth of any vegetation during the dry summer."

Other relevant features of grassland soils are the inhibition of root penetration during winter as the sodic clay swells reducing porosity and aeration, and in some soils the presence of deep cracking also imposes severe mechanical strain on plant roots. Plants which are capable of rapid growth, flowering and seed production during the favourable months of the year and semi-dormancy over the harsh summer period are favoured. Saltbush (*Atriplex* spp. and *Maireana* spp.) tends to occur where soils are sodic, alkaline or salty (Patton 1930; Gibbons and Rowan 1993).

Coincidently the distribution of treeless plain soils correspond broadly with rainfall in the region and may also contribute to patterns of treelessness. There is a gradation in precipitation across the region, ranging from 672 mm per annum (Benalla) in the south east down to 370 mm (Kerang) in the north west (LCC 1983). Broadly the grassland/woodland boundary corresponds with the ~450 mm isohyet (LCC 1983). The influence of rainfall has been implicated elsewhere in Victoria (McDougall and Kirkpatrick 1994), where treeless plains are restricted to regionally dry rain shadows (< 600 mm in the case of Gippsland).

The widespread and frequent burning activities of aborigines reported from the region by Curr at the time of European settlement may also have contributed to treelessness, a factor that has been implicated elsewhere in south-eastern Australia (e.g. Monaro region, McDougall and Kirkpatrick 1994). However, burning was apparently applied liberally throughout the landscape, including woodlands areas (Curr 1965). In the historical literature only Hodgkinson (1856) noted a relationship between tree and shrub abundance in Riverine forests and fire: "A dense underwood pervades much of the box forest, and I may here remark that the forest land

generally.... is rapidly deteriorating as regards its grazing capabilities, owing to the great increase of scrub and underwood consequent on the partial cessation of the bush fires which formerly checked their growth." There are however, no historical records of trees invading the treeless plains on the Northern Plain upon the cessation of burning as has been reported elsewhere (e.g. USA, Collins and Barber 1985; Collins 1990), although widespread stock grazing may have prevented this from occuring. On the basis of observations of grassland dynamics under disturbance (Chapter 4), burning may have also influenced the forb composition and structure of the former vegetation.

Conclusions

Historical information sources (primarily literature and survey maps) proved to be a useful tool for reconstructing an impression of the former distribution and nature of treeless plain vegetation across the Northern Plain. Such vegetation was apparently restricted to the drier western portion of the region on heavily textured riverine soils not subject to inundation. On the basis of soil type mapping, validated by historical vegetation maps, it is estimated that treeless plain occupied about 4000 km^2 of the region at the time of European settlement. Recent surveys of remnant vegetation across all tenure, suggest < 2.5% of the former extent remains (0.05% in conservation reserves), much of which is quite degraded and located on private property with an uncertain future. Woodlands and shrublands dominated by *Eucalyptus largiflorens* and *Muehlenbeckia florulenta* occurred in seasonally flooded clayey drainage lines, swamps and active flood plains. Sandier soils associated with lunettes, palaeo-channels and adjacent geological formations were occupied by woodlands dominated by *Callitris* spp., *Eucalyptus* spp. and *Allocasuarina luehmannii.*

The composition, structure and ecological function of the treeless plain vegetation of Victoria's Riverina has been profoundly transformed by 160 years of white occupation and intensive agricultural land use. The grassland refugia observed in the landscape today probably contain only a subset of the pre-settlement flora, a similar conclusion to that drawn for the southern Riverina of NSW.

Acknowledgments

Thanks for assistance during this project are extended to: Dallas and Robin Evans for access and use of the original plans of the pastoral runs surrounding Fernihurst Estate. Staff of the Department of Conservation and Natural Resources, Bendigo and Shepparton for the provision of necessary resources including relevant aerial photographs and general support. In particular Rob Price, Shirley Diez, Peter Milne and Rolf Weber for advice on the availability and interpretation of soil distribution maps. Bob Parsons, David Ashton, Peter Milne, Ian Lunt and John Morgan who provided useful comments on the manuscript. MacroMap Systems, particularly Phil Smalley for data scanning and preparation of pre-settlement treeless plain distribution map. Valuable comments on historical accounts were provided by Paul Haw, David Millsom, Phil Maher, Dorothy Davies and Jack Wishart. Valuable support was also provided at the beginning of the project by Keith McDougall, Mary Appleby and Noel Schoknecht.

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Appendix 3.1. Probable identity of common plant names mentioned on map annotations and in historical literature.

Vernacular reference in historical source	Probable identity (Ross 1993)
anguillaria	*Wurmbea* spp.
anthistiria	*Themeda triandra*
banilla, main plant	*Atriplex nummularia*
[banilla], small main plant	*Chenopodiaceae*
box	*Eucalyptus melliodora, E. microcarpa, E. largiflorens*
casuarinae	*Allocasuarina luehmannii, A. verticillata*
cotton bush	*Maireana aphylla*
cypress pine	*Callitris glaucophylla*, *C. gracilis*
dorothonia grass	*Danthonia* spp.
gum	*Eucalyptus camaldulensis*
hee oak	*Allocasuarina* spp.
honeysuckle	*Banksia marginata*
kangaroo grass	*Themeda triandra*
mallee	*Eucalyptus* spp.
myrnong	*Microseris lanceolata*
native carrot	*Microseris lanceolata*
pig's face	*Disphyma clavellatum*
pine	*Callitris glaucophylla*, *C. gracilis*
polygonum	*Muehlenbeckia florulenta*
salsuginous plants	*Chenopodiaceae*
saltbushes	*Chenopodiaceae*
saltbushes (dwarf variety)	*Chenopodiaceae*
she oak	*Allocasuarina* spp.
wire grass	*Lomandra effusa*
wiry grass	*Lomandra effusa*
yam	*Microseris lanceolata*
yarra trees	*Eucalyptus camaldulensis*